SYLLABUS OF CLINICAL MEDICAL EDUCATION

FOR INTERNATIONAL MEDICAL STUDENTS (IN ENGLISH)

(The Second Volume)

来华留学生临床医学专业本科（英语授课）教学大纲（下册）

中国教育国际交流协会国际医学教育分会 编

Edited by International Medical Education Committee,
China Education Association for International Exchange

清華大學出版社

北 京

图书在版编目(CIP)数据

来华留学生临床医学专业本科（英语授课）教学大纲. 下册：英文 / 中国教育国际交流协会国际医学教育分会编. —北京：清华大学出版社，2019
ISBN 978-7-302-49759-2

Ⅰ.①来… Ⅱ.①中… Ⅲ.①临床医学-高等学校-教学大纲-英文 Ⅳ.①R4-41

中国版本图书馆CIP数据核字(2018)第037256号

责任编辑：李 君
封面设计：常雪影
责任校对：王淑云
责任印制：丛怀宇

出版发行：清华大学出版社
网 址：http://www.tup.com.cn, http://www.wqbook.com
地 址：北京清华大学学研大厦A座 邮 编：100084
社 总 机：010-62770175 邮 购：010-62786544
投稿与读者服务：010-62776969, c-service@tup.tsinghua.edu.cn
质量反馈：010-62772015, zhiliang@tup.tsinghua.edu.cn
印 装 者：北京密云胶印厂
经 销：全国新华书店
开 本：185mm×260mm 印 张：25.25 字 数：604千字
版 次：2019年6月第1版 印 次：2019年6月第1次印刷
定 价：198.00元

产品编号：070679-01

《来华留学生临床医学专业本科（英语授课）教学大纲》参编院校名单

Anhui Medical University（安徽医科大学）
Army Medical University（陆军军医大学）
Capital Medical University（首都医科大学）
Central South University（中南大学）
China Medical University（中国医科大学）
Chongqing Medical University（重庆医科大学）
Dalian Medical University（大连医科大学）
Dongnan University（东南大学）
Fudan University（复旦大学）
Fujian Medical University（福建医科大学）
Guangxi Medical University（广西医科大学）
Guangzhou Medical University（广州医科大学）
Harbin Medical University（哈尔滨医科大学）
Hebei Medical University（河北医科大学）
Hebei University of Chinese Medicine（河北中医学院）
Huazhong University of Science and Technology（华中科技大学）
Jiangsu University（江苏大学）
Jiangxi University of Traditional Chinese Medicine（江西中医药大学）
Jilin University（吉林大学）
Jinan University（暨南大学）
Kunming Medical University（昆明医科大学）
Nanjing Medical University（南京医科大学）
Nanjing University（南京大学）
Nankai University（南开大学）
Nantong University（南通大学）

Ningbo University（宁波大学）
North China University of Science and Technology（华北理工大学）
North Sichuan Medical University（川北医学院）
Peking Union Medical College Hospital（北京协和医院）
Peking University（北京大学）
Qingdao University（青岛大学）
Shandong University（山东大学）
Shanghai Jiaotong University（上海交通大学）
Shanghai University of Traditional Chinese Medicine（上海中医药大学）
Shanxi Medical University（山西医科大学）
Sichuan University（四川大学）
Soochow University（苏州大学）
South China University of Technology（华南理工大学）
Southeast University（东南大学）
Southern Medical University（南方医科大学）
Sun Yat-sen University（中山大学）
The People's Hospital of Guangxi Zhuang Autonomous Region（广西壮族自治区人民医院）
Tianjin Medical University（天津医科大学）
Tianjin University of Traditional Chinese Medicine（天津中医药大学）
Tongji University（同济大学）
University of Electronic Science and Technology of China（电子科技大学）
Weifang Medical University（潍坊医学院）
Wenzhou Medical University（温州医科大学）
Wuhan University（武汉大学）
Xi'an Jiaotong University（西安交通大学）
Xinjiang Medical University（新疆医科大学）
Xuzhou Medical University（徐州医科大学）
Yangzhou University（扬州大学）
Zhejiang University（浙江大学）
Zhengzhou University（郑州大学）

《来华留学生临床医学专业本科（英语授课）教学大纲》编审委员会名单

Foreword

序　　言

随着中国社会、经济、文化的快速发展，国际影响力的不断提升，“留学中国计划”的逐步实施，越来越多的外国人留学中国，来华留学生规模不断扩大。2018 年，有来自 196 个国家和地区的 492 185 名各类外国留学生在我国的 1004 所高等院校学习，我国已经成为亚洲最大的留学目的地国家。来华学习医学的留学生人数增长迅速，目前来华学习医学的留学生人数已位居来华留学生人数的首位，2017 年来华学习医学本科的留学生 4.69 万人，其中临床医学本科留学生 3.74 万人，来华医学留学生教育为生源国培养了大批的医学人才。

教育部历来高度重视来华医学留学生教育质量，不断加强对医学留学生教育的规范和管理，提出了“提质增效、质量优先”的发展战略。在 2007 年制定的《来华留学生医学本科教育（英语授课）质量控制标准暂行规定》基础上，教育部又委托中国教育国际交流协会国际医学教育分会制定了《来华留学生临床医学专业本科教育（英语授课）质量控制规定》，进一步规范和加强来华留学生临床医学本科教育。

2017 年 9 月，中国教育国际交流协会国际医学教育分会在浙江大学正式成立。2018 年 3 月，教育部国际合作与交流司组织专家对 52 所招收临床医学留学生的高校实施调研。2018 年 10 月，中国教育国际交流协会又组织专家对部分高校的来华医学留学生教育的管理工作进行了专项调研，深入了解全国来华医学留学生教育的基本情况，为制定来华医学留学生教育政策提供依据。

由于来华留学生临床医学专业本科教育（MBBS）在我国较短的时间迅速发展，一些学校不能适应来华留学发展的需要，一些学校的办学资源和基础设施存在差异，课程设置差异也较大，有的学校开设课程不符合临床医学专业教育的基本要求，影响了来华留学生临床医学专业教育的健康发展，也影响了我们的国际声誉。新近公布的《中国本科医学教育标准——临床医学专业（2016 年版）》和即将公布实施的《来华留学生临床医学专业本科教育（英语授课）质量控制规定》对临床医学专业教育和来华留学生临床医学专业教育做出了具体规定和要求，教学大纲是教师和学生教学活动中重要的纲领性文件，制定 MBBS 教学大纲就是落实两个标准的具体措施之一。

为规范来华留学生临床医学专业本科教育，提高来华医学留学生的教育质量，在教育部国际合作与交流司、中国教育国际交流协会领导和清华大学出版社的支持下，启动了 MBBS 教学大纲的编写工作。2016 年 4 月，在天津医科大学召开了 MBBS 教学大纲编写会议，30 多所高校的领导和专家经过讨论、磋商，成立了“来华留学生临床医学专业本科（英语授课）教学大纲编审委员会”，制定了大纲编写的体例和编写原则，并收集了留学生主要生源国的教学大纲、执业医师资格考试要求等作为参考，会议确定了各科目教学

大纲编写任务及牵头单位。在各科目主编的精心组织下，2017年5月完成了来华留学生临床医学专业本科（英语授课）53门课程教学大纲的初稿，2017年6月在清华大学召开了大纲核心专家组的审稿会议，对大纲提出了修改意见，经各主编再次修改后，又进行了第三次修改，2018年9月在清华大学举行大纲审定稿会，来自全国近40所高校的著名教授、大纲主编、课程负责人集聚一堂为来华留学生临床医学专业53门课程的英语教学大纲做了最后的审定。

现在，历时3年，各高校翘首期盼的《来华留学生临床医学专业本科（英语授课）教学大纲》由清华大学出版社正式出版，供全国使用。参加编写来华医学留学生53门课程英语授课教学大纲的专家由我国长期从事医学留学生教育的教授、学者和一线教师组成，他们在全国医学高等院校来华医学留学生教育领域里具有代表性和影响力，MBBS教学大纲的编写出版凝聚了我国众多高校和专家的辛劳和努力。该套教学大纲主要供来华临床医学专业本科留学生，本土长学制医学生、医学本科生英语或双语教学使用。

来华留学生的教学质量是来华留学教育事业可持续发展的核心保障，教学大纲是来华医学留学生教育教材建设的重要组成部分。制定MBBS教学大纲是一件具有里程碑意义的工作，也是一件规范高校来华留学生临床医学专业教育的尝试性和探索性的工作，它不仅填补了我国来华医学留学生教学大纲的空白，而且对规范来华医学留学生教学，提高培养质量将发挥重要作用，同时也将对留学生系统性教材建设和教学改革发挥指导作用。

MBBS教学大纲的出版是一个良好的开端，希望在今后的来华医学留学生教学中能够审视理解、多提意见、反馈信息、不断修改，使其日臻完善。

张岫美　李国霞

2019年5月

Contents
目　录

PHYSICAL DIAGNOSTICS

临床诊断学

Chief Editors（主编）

Fu Rong（付蓉） Tianjin Medical University（天津医科大学）
Ruan Erbao（阮二宝） Tianjin Medical University（天津医科大学）
Ma Yan（马燕） Fudan University（复旦大学）

Deputy Chief Editors（副主编）

Jiang Kui（姜葵） Tianjin Medical University（天津医科大学）
Dong Lixia（董丽霞） Tianjin Medical University（天津医科大学）
Lian Yixin（连一新） Soochow University（苏州大学）
Xue Bicheng（薛必成） Wenzhou Medical University（温州医科大学）
Jiang Shan（江汕） Southern Medical University（南方医科大学）

Editors（编委）（按姓氏拼音排序）

Cui Jingqiu（崔景秋） Tianjin Medical University（天津医科大学）
Ding Kai（丁凯） Tianjin Medical University（天津医科大学）
Dong Lixia（董丽霞） Tianjin Medical University（天津医科大学）
Fu Rong（付蓉） Tianjin Medical University（天津医科大学）
Huang Yan（黄艳） North China University of Science and Technology（华北理工大学）
Jia junya（贾俊亚） Tianjin Medical University（天津医科大学）
Jiang Kui（姜葵） Tianjin Medical University（天津医科大学）
Jiang Shan（江汕） Southern Medical University（南方医科大学）
Lian Yixin（连一新） Soochow University（苏州大学）
Ma Yan（马燕） Fudan University（复旦大学）
Ruan Erbao（阮二宝） Tianjin Medical University（天津医科大学）
Su Shuai（苏帅） Tianjin Medical University（天津医科大学）
Xue Bicheng（薛必成） Wenzhou Medical University（温州医科大学）

Course Description

The course of diagnosis is a bridge between the basic medical course and clinical works. Student will learn the basic technique and the principles of how to make a diagnosis. The course includes 6 parts which covering physical examination, instruments

examination and laboratory test. The skills of taking a history and performing physical examination is still the most important skills for physicians.

The physical diagnosis include following parts: symptomatology, inquiry, physical examination, medical record writing, the diagnosis of diseases, electrocardiogram diagnosis (ECG), and ultrasound diagnosis et al.

Objectives

1. Master the mechanisms or pathogenesis of common symptoms.
2. Master the techniques of taking the patient's history.
3. Master the common methods of physical examination.
4. Master the mechanisms of typical signs and their clinical values.
5. Master the principle of how to make a medical record.
6. Master the patterns of normal ECG.
7. Be familiar with the features of abnormal ECG in common cardiac disease.
8. Be familiar with the laboratory examinations and their clinical values.
9. Cultivate the ability to analyze and synthesize clinical data, writing complete medical record.
10. Understand the mechanism of the ECG and ultrasound diagnosis.

Teaching and Learning Methods

Theory: Teaching diagnosis to medical students is provided with the help of lectures that deal with the basic technique and the principles of how to make a diagnosis.

Practical: Practical training asks for medical students to know according to the clinical practice, to be familiar with the relationship between clinical symptoms, signs and physical examination, the reports of the laboratory tests and special examination, then make a diagnosis.

Recommended Textbooks

Francis Greenspan, David Gardner. 2001. Basic and Clinical Endocrinology [M]. 6th ed. New York: McGraw-Hill Companies.

H Rouden Jones, Jayashri Srinivasan, Gregory J. 2012. Netter's Neurology [M]. 2th ed. Philadelphia: Elsevier Inc.

Larry Jameson. 2010. Harrison's Endocrinology [M]. 2nd ed. New York: McGraw-Hill Companies.

Steven Laureys, Giulio Tononi. 2009. The Neurology of Consciousness: Cognitive Neuroscience and Neuropathology [M]. San Diego: Elsevier Ltd.

Thomas Andreoli. 2001. Cecil Essentials of Medicine [M]. 5th ed. Philadelphia: WB Saunders Company.

Schedule Table

No.	Contents	Theory	Self-study	Practical
	General Introduction	1		
Part Ⅰ	Inquiry			
Part Ⅱ	Common Symptoms	5		2
Part Ⅲ	Physical Examination			
Chapter 1	Techniques for physical exam	1		1.5
Chapter 2	General Physical Examination	1		1.5
Chapter 3	Head and Neck	2		3
Chapter 4	Chest and Lung	4		3
Chapter 5	Cardiovascular Exam	8		3
Chapter 6	Abdomen Exam	6		3
Chapter 7	Anus Genitals		2	
Chapter 8	Spine and Extremities	1		1.5
Chapter 9	Neurological Exam	2		1.5
Part Ⅳ	Instrument exam			
Chapter 1	ECG	10		6
Chapter 2	Spirometry Interpretation and Arterial Blood Gas interpretation	2		
Chapter 3	UCG	2		3
Part Ⅴ	History Taking and Medical Records Writing	2		6
Part Ⅵ	Approach to diagnosis	2		3
	Total	50		38

General Introduction

OBJECTIVES

1. To master the important role of diagnosis.
2. Be familiar with the main content of diagnosis.
3. Be familiar with the fundamental skills of physical examination.

COURSE CONTENTS

1. Expound the properties of clinical diagnosis and its clinical significance.

2. Explain the contents of clinical diagnosis and its clinical types and emphasizing the combination of theory and practice.

3. Presenting the purpose and requirements of clinical diagnosis and asking the students to master the mechanisms or pathogenesis of common symptoms and signs, inquire about the patient's history, do a complete physical examination and write case history.

4. Introducing the history of diagnosis and novel progress.

Part One The Common Symptoms

OBJECTIVES

1. To master the definition of all the common symptoms.

2. Be familiar with the etiology, the pathogenesis, the classification and the accompanying symptoms.

COURSE CONTENTS

Chapter 1 Fever

1. The definition of fever.
2. The etiology of fever: infectious and non-infectious.
3. The clinical profiles of fever.
4. The onset and the process of fever.
5. The clinical patterns and the clinical significance of fever.
6. The accompanying symptoms of fever.
7. How to conduct an interrogation.

Chapter 2 Obesity

1. The definition and measurement of obesity.

Obesity is best defined as the presence of an abnormal absolute amount or relative proportion of body fat. The clinical definition of obesity is a body mass index (BMI) of

30 or higher.

2. Classification of obesity.

Based on BMI:

(1) Underweight (BMI<18.5).

(2) Normal (BMI 18.5~24.9).

(3) Overweigh (BMI 25.0~29.9).

(4) Obese (BMI 30.0~39.9).

(5) Severely obese (BMI>40.0).

3. The pathogenesis and etiologic classification of obesity.

(1) Neuroendocrine diseases associated with obesity.

(2) Drug-induced obesity.

(3) Dietary obesity.

(4) Reduced energy expenditure.

(5) Genetic factors in obesity.

4. Evaluation of the obese patient.

(1) Central or visceral-abdominal obesity (a waist measurement of >102cm in men and >88cm in women).

(2) Gluteal-femoral obesity (fat deposits are located primarily below the waist in the hips and thighs).

5. Medical consequences of obesity.

(1) Type 2 DM.

(2) Hypertension.

(3) Hyperlipidemia and dyslipidemia.

(4) Arteriosclerotic heart disease and stroke.

(5) Gallbladder disease, osteoarthritis, cancers and other conditions.

Chapter 3 Emaciation

1. The definition and measurement of emaciation.

2. Some conception about emaciation: underweight, cachexia.

3. The common causes of emaciation:

(1) Endocrine and metabolic diseases (Thyrotoxicosis, diabetes).

(2) Acute and chronic infection.

(3) Cancer.

(4) Gastrointestinal tract diseases.

(5) Drug abuse.

(6) Emotional illness.

4. The clinical manifestation and concomitant symptoms:

(1) Endocrine and metabolic diseases.

(2) Chronic wasting diseases.

(3) Malnutrition.

(4) Anorexia nervosa.

(5) Mental disorder.

Chapter 4 Anemia

1. Definition of anemia.

Anemia is defined as a decrease in the total amount of hemoglobin (Hb), Red Blood Cells (RBCs) and hematocrit (HCT) in the blood. In China, diagnosis of anemia in men is based on a hemoglobin of less than 120 g/L, while in women, it must be less than 110 g/L, in pregnant women, it is less than 100 g/L.

2. Classification of anemia.

Based on the morphology of RBC:

(1) Normocytic anemia.

(2) Macrocytic anemia.

(3) Microcytic hypochromic anemia.

3. Causes and mechanisms of anemia.

(1) Impaired production.

(2) Increased destruction.

(3) Blood loss.

4. Symptoms of anemia.

(1) Common symptoms: paleness, fatigue, dizziness, tinnitus.

(2) Cardiovascular symptoms: palpitations, short of breath, tachycardia, cardiac diation.

(3) Digestive symptoms: anorexia, nausea, vomiting, abdominal distension.

(4) Urogenital symptoms: diuresis, albuminuria.

5. The common symptoms accompanied with anemia.

(1) Iron deficiency anemia: koilonychias, glossitis, pica.

(2) Megaloblastic anemia: "beefy" tongue, peripheral neuritis.

(3) Aplastic anemia: bleeding and infection.

(4) Hemolytic anemia: jaundice, hemoglobinuria, hepatosplenomegaly.

Chapter 5 Mucocutaneous Hemorrhage

1. Causes and mechanism of mucocutaneous hemorrhage.

(1) Vessel wall disorders.

(2) Abnormality of platelet account or function.

(3) Deficiency of coagulation factors.

(4) Increased coagulant in blood.

(5) Hyperfibrinolysis.

2. Symptoms of mucocutaneous hemorrhage.

(1) Petechia: diameter of subcutaneous hemorrhage$\leqslant$2mm.

(2) Purpura: diameter of subcutaneous hemorrhage 3~5mm.

(3) Ecchymosis: diameter of subcutaneous hemorrhage$>$5mm.

(4) Hematoma.

(5) Blood blisters.

(6) Epistaxis.

3. The common symptoms accompanied with mucocutaneous hemorrhage.

(1) Allergic purpura: arthralgia, stomachache.

(2) ITP or DIC: extensive hemorrhage like hematuria and melena.
(3) Hemophillia: joint pain and deformity.

Chapter 6 Cough and Expectoration

1. Definition of cough.
2. Causes and mechanisms of cough.
(1) Respiratory disorders.
(2) Pleural diseases.
(3) Cardiovascular disorders.
(4) Central nervous system disorders.
3. Mechanisms of sputum production.
(1) Transudates.
(2) Exudates.
(3) Mucus.
(4) Dusts aspirated.
(5) Infracted tissues.
4. The common symptoms accompanied with sputum.
(1) Blood sputum.
(2) Bloody gelatinous sputum.
(3) Rusty sputum.
(4) Stringy mucoid sputum.
(5) Frothy sputum.
(6) Purulent sputum.
(7) Broncholiths.

Chapter 7 Chest Pain

1. The definition of chest pain.

2. The common causes of chest pain: acute coronary syndrome; aortic dissection; pulmonary embolism; angina; diseases of chest wall; lung diseases; mediastinal diseases; gastrointestinal diseases; mental disorder.

3. The clinical manifestation and risk assessment: check the vital sign and history taking.

4. The differential diagnosis of chest pain.

Chapter 8 Dyspnea

1. Causes and mechanisms of dyspnea.
(1) Respiratory disorders.
(2) Pleural diseases.
(3) Cardiovascular disorders.
(4) Central nervous system disorders.
2. Differential diagnosis of dyspnea.
(1) Cardiac dyspnea.
(2) Pulmonary dyspnea.

Chapter 9 Cyanosis

1. The definition of cyanosis.

Cyanosis is defined as the bluish or purplish discolouration of the skin or mucous membranes due to the tissues near the skin surface having low oxygen saturation.

2. Cause and mechanisms of cyanosis.

(1) Central nervous system:

1) Intracranial hemorrhage.

2) Drug overdose.

3) Tonic–clonic seizure.

(2) Respiratory system:

1) Pneumonia.

2) Bronchiolitis.

3) Bronchospasm (e. g. asthma).

4) Pulmonary hypertension.

5) Pulmonary embolism.

6) Hypoventilation.

7) Chronic obstructive pulmonary disease, or COPD (emphysema).

(3) Cardiovascular diseases:

1) Congenital heart disease.

2) Heart failure.

3) Valvular heart disease.

4) Myocardial infarction.

(4) Blood:

1) Methemoglobinemia.

2) Polycythaemia.

(5) Others:

1) High altitude.

2) Hypothermia.

3) Obstructive sleep apnea.

Chapter 10 Palpitation

1. Definition of Palpitation:

Palpitation is defined as an awareness of the beating of the heart, an awareness commonly brought about by a change in the heart's rhythm or rate or by an augmentation of its contractility.

2. Causes and mechanisms of palpitation.

(1) Augmentation of heart contractility.

(2) Arrhythmia.

(3) Cardiac neurosis.

3. The common causes of palpitation: Augmentation of heart contractility.

(1) Physiological augmentation: Exercising strongly and overnervous, after drinking coffee, tea, alcohol, taking medicine such as ephedrine, aminophylline, atropin etc.

(2) Pathological augmentation: Ventricular hypertrophy, thyrotoxicosis, anemia,

fever, hypoglycemia, etc.

4. The common causes of palpitation: Arrhythmia.

(1) Tachycardia: sinus, supraventricular, ventricular, premature beat, atrial fibrillation irregular beat or long course.

(2) Bradycardia: SSS, AVB, sinus bradycardia.

5. The common causes of palpitation: Cardiac neurosis.

Turbulence of sympathetic nerve & pneumogastric nerve, always happening with other symptoms: chest pain, tire, insomnia, headache, dizziness etc.

Chapter 11 Abdominal Pain

1. The definition of abdominal pain.

2. The common causes of abdominal pain:

(1) The common causes of acute abdominal pain.

(2) The common causes of chronic abdominal pain.

3. The clinical manifestation:

(1) The region of abdominal pain.

(2) The quality and severity of abdominal pain.

(3) The inducing factors.

(4) Temporal characteristics of abdominal pain.

(5) Concomitant symptoms.

4. The key points when history taking.

Chapter 12 Haematemesis

1. The definition of the haematemesis.

Hematemesis refers to the patient vomiting blood which caused by the upper gastrointestinal tract (esophagus, stomach, duodenum, gastrojejunostomy after jejunum, pancreas, bile duct) diseases.

2. The etiology of of haematemesis.

Hematemesis has many causes, including a bleeding ulcer, bleeding esophagus, gastroenteritis, inflammation of the stomach lining, swallowing blood from a nosebleed and a tumor in the gastrointestinal tract.

3. The common symptoms accompanied with haematemesis.

Chapter 13 Hemafecia

1. The definition of the hemafecia.

2. The etiology of of hemafecia.

3. The common symptoms accompanied with hemafecia.

Chapter 14 Jaundice

1. The definition of jaundice.

Jaundice, also known as icterus, is a yellowish or greenish pigmentation of the skin and whites of the eyes due to high bilirubin levels.

2. The differential diagnosis of the haemolytic, obstructive, and hepatogenic.

jaundice.

The differential diagnosis and the related disease When a pathological process interferes with the normal functioning of the metabolism and excretion of bilirubin just described, jaundice may be the result. Jaundice is classified into three categories, depending on which part of the physiological mechanism the pathology affects.

Chapter 15 Diarrhea

1. The definition of the diarrhea.

Diarrhea is an increase in the volume of stool or frequency of defecation. It is one of the most common clinical signs of gastrointestinal disease, but also can reflect primary disorders outside of the digestive system.

2. The pathogen and pathogenesis of diarrhea.

3. The common diarrheal diaseases.

The most common cause is an infection of the intestines due to either a virus, bacteria, or parasite; a condition known as gastroenteritis. A number of non-infectious causes may also result in diarrhea, including hyperthyroidism, lactose, intolerance, inflammatory bowel disease, a number of medications, andirritable bowel syndrome.

Chapter 16 Constipation

1. The definition of the constipation.

Constipation refers to bowel movements that are infrequent or hard to pass. The stool is often hard and dry.

2. The pathogen and pathogenesis of constipation.

3. The common constipation diaseases.

The causes of constipation can be divided into organic and functional constipation.

Chapter 17 Nausea and Vomiting

1. The definition of the nausea and vomiting.

Nausea is an uneasiness of thestomach that often comes beforevomiting. Vomiting is the forcible voluntary or involuntary emptying ("throwing up") of stomach contents through themouth.

2. The pathogen and pathogenesis of nausea and vomiting.

The cause of nausea and vomiting is widespread, including multifaceted factors, involving almost every system.

3. The common symptoms accompanied with nausea and vomiting.

Chapter 18 Dysphagia

1. The definition of the dysphagia.

Dysphagia is the medical term for the symptom of difficulty in swallowing.

2. The pathogen and pathogenesis of dysphagia.

The most common symptom of esophageal dysphagia is the inability to swallow solid food, which the patient will describe as 'becoming stuck' or 'held up' before it either passes into the stomach or is regurgitated. Pain on swallowing or odynophagia is a distinctive symptom that can be highly indicative of carcinoma, although it also has

numerous other causes that are not related to cancer.

3. The common dysphagia diaseases.

Dysphagia is classified into the following major types:

(1) Oropharyngeal dysphagia.

(2) Esophageal and obstructive dysphagia.

(3) Neuromuscular symptom complexes.

(4) Functional dysphagia is defined in some patients as having no organic cause for dysphagia that can be found.

Chapter 19 Indigestion

1. The definition of the indigestion.

Indigestion, also known as dyspepsia, is a condition of impaired digestion.

2. The etiology of indigestion.

Dyspepsia is a common problem and is frequently caused by gastroesophageal reflux disease (GERD) or gastritis. In a small minority it may be the first symptom of peptic ulcer disease (an ulcer of the stomach or duodenum) and occasionally cancer.

3. The common symptoms accompanied with indigestion.

The common symptoms may include upper abdominal fullness, heartburn, nausea, belching, or upper abdominal pain.

Chapter 20 Hematuria

1. Definition of microscopic hematuria.

Microscopic hematuria is defined as 4 erythrocytes per high-powered field (HPF) on a spun urine specimen.

2. Classification of hematuria.

Based on the clinical occurrence:

(1) Systemic hematuria (Pre-Renal hematuria).

(2) Renal hematuria.

(3) Post-Renal hematuria.

3. Differenciation of hematuria.

(1) The pattern of gross hematuria indicates the source of the blood: initial hematuria, terminal hematuria, total hematuria.

(2) Dysmorphic RBCs are cells that have been deformed by the transit through the glomerulus and through the medullary interstitium. Phase contrast microscopy aids in the identification of dysmorphic RBCs.

(3) The presence of RBC casts is often conclusive evidence for the glomeruonephritis.

Chapter 21 Frequent Micturition, Urgent

1. Causes of frequent micturition, urgent micturition, dysuria.

(1) The causes of frequent micturition include increased total urinary volume, decreased bladder capcity, or increased stimulation of the micturition reflexes caused by irreitation of the genitourition tract.

(2) Urgent micturition often results from acute cystitis, urethritis, prostatitis, ureteral calculus, bladder cancer and neurogentic bladder, or psychic factors.

(3) Dysuria is the pain located in the penis or the female urethra with urination, usually resulted from inflammation of or breaks in the urethral epithelium, such as infection or trauma.

2. Symptoms of frequent micturition, urgent micturition, dysuria.

(1) The average adult urinates about five or six times daily.

(2) Frequent micturition and urgent micturition are commonly attributed to benign prostatic hyperplasia (BPH) when an older man presents with voiding symptom or filling symptom. Type I (acute bacterial) and type II (chronic bacterial) prostatitis accounted for 5 to 10% of prostatitis is characterized by lower urinary symptoms, particularly dysuria, frequency, and urgency. Type III (chronic abacterial/chronic pelvic pain syndrome) is characterized by pelvic pain, lower urinary symptoms, and pain during or after ejaculation. Type IV prostatitis is asymptomatic.

Chapter 22 Oliguria and Polyuria

1. The definition Causes of oliguria and polyuria.

Adults daily urine output less than 400 ml for oliguria, less than 100 ml for anuria, and more than 2500 ml for polydipsia.

Chapter 23 Disturbance of Consciousness

1. Definition of disturbance of consciousness.

Disturbance of consciousness is impediment of having an awareness of one's environment and one's own existence, sensations and thoughts.

2. Causes of disturbance of consciousness.

(1) Cardiovascular diseases.

(2) Diabetes.

(3) Seizure Disorder.

(4) Head Trauma.

(5) Alcoholism.

(6) Drug History.

(7) Psychiatric Diseases.

(8) Other.

3. Symptoms of disturbance of consciousness.

(1) Somnolence.

(2) Confusion.

(3) Stupor.

(4) Coma.

(5) Delirium.

4. The common symptoms accompanied with disturbance of consciousness.

(1) Fever.

(2) Abnormality of rhythm in respiration.

(3) Arrhythmia.

(4) Dilation and contraction of pupil.

(5) Hypertension and hypotension.

(6) Bleeding, ecchmosis, petechia and purpura.

(7) Meningeal irritation sign.

(8) Paralysis.

Chapter 24 Vertigo

1. Definition of vertigo.

Vertigo is the illusion of movement of the body or the environment. It may be associated with other symptoms, such as impulsion (a sensation that the body is being hurled or pulled in space), oscillopsia (a visual illusion of moving back and forth), nausea, vomiting, or gait ataxia.

2. Causes and Classification of vertigo.

(1) Peripheral vertigo.

(2) Central vertigo.

(3) Others.

3. Mechanisms of vertigo.

(1) Visual disturbance.

(2) Deep sensory disfunction.

(3) Vestibular dysfunction.

4. Symptoms of vertigo.

(1) Pripheral vertigo tends to be intermittent, lasts for briefer periods, and produces more distress than vertigo of central origin. Nystagmus is always associated with peripheral vertigo. Peripheral lesions commonly produce additional symptoms of inner ear or acoustic nerve dysfunction, ie, hearing loss and tinnitus.

(2) Central vertigo may occur with or without nystagmus. Central lesions may produce intrinsic brainstem or cerebellar signs, such as motor or sensory deficits, huperreflexia, extensor plantar responses, dysarthria or limb ataxia.

5. The common symptoms accompanied with vertigo.

(1) Constitutional symptoms.

(2) Hearing disorder.

(3) Visual disturbance.

(4) Nervous system abnormalities.

Chapter 25 Tic and Convulsion

1. Definition of Tic and Convulsion.

Tic and Convulsion are disorders characterized by excessive or oversynchronized discharges of cerebral neurons.

2. Causes and mechanism of Tic and Convulsion.

(1) Cerebral disease.

(2) Systemic disease.

(3) Neurosis.

3. Symptoms of Tic and Convulsion.

(1) Generalized seizures: generalized tonic-clonic seizures, hysterical seizure, febrile convulsion, hypocalcemic tetany, Tourette syndrome, breath-holding

syndrome.

(2) Partial seizures: begin with motor, sensory, or autonomic phenomena, depending on the cortical region affected. For example, clonic movements of a single muscle group in the face, a limb, or the pharynx may occur and may be self-limited; they may be recurrent or continuous or may spread to involve contiguous regions of the motor cortex.

4. The common symptoms accompanied with Tic and Convulsion.

(1) Fever.

(2) Hypertension.

(3) Meningeal irritation sign.

(4) Mydriasis and tongue bite.

(5) Headache.

(6) Loss of conciousness.

Part Two Pandect and Inquiry

OBJECTIVES

1. Understand diagnostics is a basic tool to get proper diagnose and give treatment.

2. Recognize the physical signs of systemic disease.

3. Do a preliminary evaluation of their finding and its relationship to the management of their patient.

4. Understand the important significance of interviewing.

5. Understand the content of interviewing including name, sex, residence, birth date and age, history of present illness, past medical history, family history, review of systems, etc.

COURSE CONTENTS

1. Recognize factors that facilitate or impede the process of inspection.

2. Compare the purposes of palpation, percussion and auscultation with their appropriate technique.

3. Identify appropriate equipment and associated techniques for measuring vital signs.

4. Identify appropriate physical properties and associated techniques for using the following instruments: stethoscope, ophthalmoscope, otoscope, ruler & tape measure, electrocardiograph, spirometry.

PRACTICAL

1. Identify appropriate physical properties and associated techniques for using the following instruments: stethoscope, ophthalmoscope, otoscope, ruler & tape measure, electrocardiograph, spirometry.

2. Bring history & physical findings together to arrive at tentative diagnosis.

3. Perform & write up a medical history & physical examination.

4. Master and practice the skill of medical interviewing, including name, sex, residence, birth date and age, history of present illness, past medical history, family history, review of systems, etc.

Part Three Physical Examination

OBJECTIVES

1. Understand the goal and the importance of physical examination.

2. Understand the important significance of interviewing.

3. Understand the important aspects of physical examination.

4. Be able to record the vital signs of patient.

5. Master the principles, the items, methods and sequence of physical examination.

6. Master the application of inspection, palpation, percussion, and auscultation in physical examination.

7. Be familiar with the clinical significance of normal and abnormal signs.

TEACHING AND LEARNING METHODS

1. Understand the basic techniques in procuring a medical history and in performing a physical examination of the patient.

2. Master the skill of palpation, percussion and auscultation.

3. Demonstrate and instruct through the teaching aid, then let the student examine each other, practice the examination order and methods, remember the normal state of the body.

4. Examine the patient, identify abnormal signs and analyses their clinical significance through the clinical practice.

COURSE CONTENTS

Chapter 1 Methods and Physical Examination

1. Inspection.
2. Palpation.
(1) Light palpation.
(2) Deep palpation.
(3) Deep slipping palpation.
(4) Bimanual palpation.
(5) Deep press palpation.
(6) Ballottement.
3. Percussion.
(1) Indirect percussion (Mediate percussion).
(2) Direct percussion (Immediate percussion).
4. Auscultation: Use stethoscope.

Chapter 2 Vital Signs and Anthropomorphic Data

1. Vital signs.
(1) Body temperature (oral, rectal, axillary).
(2) Respiratory rate.
(3) Blood pressure.
(4) Pulse.
(5) Heart rate.
2. Anthropomorphic data:
(1) Sex.
(2) Age.
(3) Mental status.
(4) Development/Habits.
(5) Nutrition state.
(6) Consciousness (Somnolence, Confusion, Stupor, Coma).
(7) Facial feature/Expression.
(8) Position/Posture (Active position, Passive position, Compulsive position).
(9) Gait.
(10) Skin.
3. Examination of the lymph nodes.
(1) Palpation of the cervical lymph nodes.
(2) Palpation of axillary infraclavial and supraclavicular lymph nodes.

Chapter 3 Head and Neck

1. Head.

(1) The general examination of external cranium.

(2) the examination of eye, fossa orbitalis.

(3) The movement of eyes, corneal reflex, light reflex, convergence reflex, accommodation reflex.

(4) The abnormal signs of eyelids: Lid Inversion (entropion), Lid eversion (ectropion), palpebral edema, Failure of lid closure, Failure of lid opening.

(5) The ear examination: auricle, acoustic duct, deaphragma auris exam.

(6) The nose examination: shape and nasal vestibule.

(7) Palpation of accessory nasal cavity.

(8) The examination of Paranasal sinus.

(9) The examination of mouth.

(10) The grade of tonsil enlargement.

(11) Laryngeal edema's symptoms include: hoarseness, dyspnea, stridor.

(12) Parotid gland exam.

2. Neck.

(1) The shape and movement of neck.

(2) The inspection, palpation and auscultation of cervical blood vessel.

(3) The clinical significance of distended cervical vein and pulsation of cervical vein and carotid artery.

(4) The examination of thyroid gland and trachea position.

3. The following abnormal signs'clinical significance.

Palpebral edema, Failure of lid closure, Failure of lid opening, Macrocephalia, Squared skull, Conjunctival edema, Exophthalmos, Yellow sclera, Asymmetrical pupils, Loss of light reflex, Disappearance of the near reflexes, Lip pale, Lip cyanosis, Buccal pigmentation, Koplik spots, White patches, Stiff neck, Increase of CVP, Enhancing of venous pulsation, Enhancing of arterial pulsation, Deviation of trachea.

Chapter 4 Chest and Lung

1. The chest landmarks.

(1) Skeletal landmarks (Clavicle、Suprasternal notch、Manubrium sterni、Sternal angle (angle of Louis)、Xiphoid process、suprabdominal angle (infrasternal angle、Costal angle、Ribs、Intercostal spaces).

(2) Imaginary vertical lines (Anterior midline、Sternal line、Midclavicular line、Anterior axillary line、Mid axillary line、Posterior axillary line、Scapular line、Posterior midline).

(3) Natural fossa and anatomic regions (Suprasternal fossa、Supraclavicular fossa、Infraclavicular fossa 、Axillary fossa).

2. The boundary of lung and pleura.

(1) Lung apex.

(2) Upper boundary of the lung.

(3) Lower boundary of the lung.

3. Examination of chest wall.

(1) Inspection.

1) General examination.

2) Superficial vein.

3) Subcutaneous emphysema.

(2) Tenderness, intercostal space.

4. Examination of Thorax.

(1) Normal thorax.

(2) Thoracic deformity.

1) Flat chest.

2) Barrel chest.

3) Pigeon chest.

4) Funnel chest.

(3) Thoracic spine deformity.

1) Kyphosis.

2) Curved or angular spine.

3) Lordosis.

4) Scoliosis.

5. Breast examination.

(1) The importance of breast examination.

(2) Quadrants of the Breast: 4 quadrants.

(3) Inspection.

1) Symmetry appearance and size.

2) Skin of breast.

3) Nipple.

(4) Palpation.

1) Consistency and elasticity.

2) Tenderness.

3) Masses.

4) Lymph nodes.

6. Lungs and Pleura.

(1) Inspection.

1) Respiratory movement: Diaphragmatic vs thoracic respiration.

2) Rate: adult: 12~20; new born: 44.

3) Pattern: Hypopnea、Hyperpnea.

4) Rhythm and amplitude: Cheyne-stokes breathing (Tidal breathing)、Biot breathing、Sighing respiration.

5) Breathing movement.

(2) Palpation.

1) Thoracic expansion.

2) Vocal fremitus (tactile fremitus).

3) Pleural friction fremitus.

(3) Percussion.

1) Indirect percussion (technique、Sounds).

2) Definitive percussion of the chest (Resonance、Dullness、Tympany).

3) Boundary of lung (Lung apex、Anterior boundary of the lung、Lower boundary of the lung).

4) Abnormal percussion sound distribution.

(4) Auscultation.

1) Normal breath sounds、Bronchial breath sounds、Vesicular breath sound、Bronchovesicular sound).

2) Abnormal breath sounds.

3) Adventitious sounds (rales): Crackles or moist rales、Rhonchi or dry rales.

4) Vocal resonance.

5) Pleural friction rub.

7. Main signs of commmon pulmonary disease.

(1) Consolidation.

(2) Atelectasis.

(3) Pneumothorax.

(4) Pleural effusion.

Chapter 5 Cardiovascular System

1. Heart.

(1) Inspection.

1) Profile of the heart.

2) Apical impulse: correct impulse position, intensity, area and significance.

3) Significance of precordial impulse.

(2) Palpation.

1) Apical impulse: correct impulse position, intensity, area and significance.

2) Thrill: reason, position, duration and significance.

(3) Percussion.

1) Gesture of percussion.

2) Cardiac dullness: normal border, the reason, character and significance of cardiac dullness shift.

(4) Auscultation.

1) Position of valvular area.

2) Mechanism of the cardiac sound.

3) Heart rate and rhythm.

4) Variation of cardiac sound.

Significance of the variation of S1 (intensity, character).

Significance of increase, decrease and splitting of P2 and A2.

5) Cardiac murmur.

Mechanism of cardiac murmur.

Position, character, duration, intensity and conduct.

6) Pericardial friction sound: mechanism, character, significance, difference with

pleural friction sound.

2. Vessel.

(1) Shape, rate and rhythm of the pulse.

(2) Relationship of the intensity with the vascular wall.

(3) Water hammer pulse (Corrigan's pulse) and Paradoxical pulse.

(4) Capillary pulsation.

(5) Deficit pulse.

(6) Taking of blood pressure and significance of the pressure.

3. Signs of the common diseases (mitral stenosis, heart failure).

(1) Mitral stenosis.

1) Pathophysiology.

2) Signs: mitral faces, enhanced S1, opening snap, diastolic rambling murmur, enhancing of P2 and splitting of S2, systolic ejection murmur in pulmonary valve area.

(2) Mitral regurgitation.

1) Pathophysiology.

2) Signs: left and downward variation of apical impulse, lessening of S1, enhancing of P2 and splitting of S2, pansystolic apical murmur.

(3) Aortic stenosis.

1) Pathophysiology.

2) Signs: systolic murmur in aortic valve area, lessened A2, paradoxical splitting of S2.

(4) Aortic regurgitation.

1) Pathophysiology.

2) Signs: Coeur en sabot, LV dilation, diastolic blowing murmur, Austin-Flint murmur.

3) Peripheral vascular signs.

Chapter 6 Abdomen Examination

1. The surface landmarks of the abdomen and subdivisions of the Abdomen.

2. Examination of the Abdomen.

(1) Inspection.

1) Abdomen contour.

Normal abdomen contour.

Change of the abdomen contour: The meaning of the common and local distention.

2) Movement of Respiration.

3) Venous Distention of Abdomen: The method and clinical meaning of the blood current direction check.

4) The meaning of the Gastral pattern and Intestinal pattern and Peristalsis.

5) Umbilicus check.

6) Skin: Scar, Purple striae, Hernia.

(2) Palpation.

1) Method of Palpation.

2) Muscle tension and its meaning.

3) Tenderness and its meaning, the method of cheaking for, and significance of tenderness and rebound tenderness.

4) Palpation of the masses in abdomen and the matters needing attention.

5) Palpation of the liver and spleen: The normal configuration of the liver and spleen, the measurement and meaning of the enlargement of the liver and spleen.

6) Palpation and clinical significance of the kidney.

7) Palpation of Gallbladder.

8) The traits and the corresponding relationships with the viscera of the abdomen masses.

(3) Percussion.

1) Percussion of the Liver and Spleen and Tenderness in Renal Region.

2) Percussion of the Traube's region.

3) The percussion method and significance of Shifting Dullness and Fluctuation (fluid wave).

4) Auscultation.

5) Borhorygmus (peristatic sounds): The normal trait and the clinical significance of the change.

6) Succussion Splash.

7) Vascular Bruits.

3. The Main Symptoms and Signs of the Common Abdominal Disease: Gastroduodenal ulcers, acute peritonitis, masses, etc.

Chapter 7 Anus, Rectum and Genitals

SELF-STUDY CONTENTS

1. Anus.

(1) Inspection: Recognize the anal fissure, external hemorrhoid, hedrosyrinx, proctoptosis, etc.

(2) Method and matters needing digital palpation.

2. Male Genitals: The development or abnormality of penis, phimosis, ulcer, etc.

Chapter 8 Spine and Extremities

1. Spine: Physical curves, deformities, tenderness, Percussion tenderness, restricted mobility.

2. Extremities.

(1) The abnormal position and configuration: joint denaturation, acromegaly, edema, venous distention of lower limbs, acropachy, koilonychias, movement obstacle, joint disease.

(2) Movement obstacle: Paralysis of limbs, restricted mobility, tremor, tetany, etc.

Chapter 9 The Neurological Examination

Explain the method of examination of the reflexes and significance of pathologic reflexes.

1. Superficial Reflexes: Corneal sensitivity, abdominal wall reflex, cremasteric reflex, plantar reflex.

2. Deep Reflexes: biceps reflex, triceps reflex, brachioradialis reflex, Patellar reflex (knee jerk), Achilles tendon reflex (ankle jerk).

3. Pathologic Reflex.

(1) Pyramidal Tract Signs:

1) Babinski's Sign and Those Having the Same Meaning: Oppenheimer sign, Gordon sign, Chaddock sign.

2) Hoffman's Sign.

3) Clonus: ankle clonus, patella clonus.

(2) Meningeal stimulation sign:

1) Nuchal Rigidity.

2) Kernig's Sign.

3) Brudzinski's Sign.

PRACTICAL

1. Perform palpation of abdomen each other under the direction of teacher.

2. Perform percussion of chest and abdomen each other under the direction of teacher.

3. Analysis of percussion tones.

4. Learn how to use stethoscope.

5. Perform auscultation of heart and breath sound each other under the direction of teacher.

6. Analysis of auscultation sound.

7. Perform an examination of eyes, ears, nose, mouth and neck:

(1) The eversion of the lower and upper lid.

(2) Examine the eyeball's movement.

(3) Evaluation of auditory acuity.

(4) Test patency of each nostril.

(5) Palpation of the paranasal sinus.

(6) Test for vagal nerve.

(7) Palpation of the thyroid gland.

(8) Palpation the position of trachea.

(9) The use of tongue blade.

8. Examine each other and practice the method with the teacher's guidance after the classes.

9. Observe the abnormal signs of the abdomen in clinical practice. Check the patients if conditions permit.

10. Discuss the symptoms and signs of the typical cases in groups.

11. Write down the records of history and the physical examination of the abdominal disease after study and practice.

12. Examine each other and practice the method with the teacher's guidance after the classes.

13. Observe the abnormal signs of the spine and extremities in clinical practice.

Check the patients if conditions permit.

14. Write down the records of the physical examination of the spine and extremities after the study and practice.

15. Examine each other and practice the method with the teacher's guidance after the classes.

16. Observe the abnormal signs of the neurological system in clinical practice. Check the the patients if conditions permit.

17. Write down the records of the physical examination of the neurological system after study and practice.

Part Four Instrument Examination

OBJECTIVES

1. Master the significance and mechanism of the waves.
2. Master the normal range of waves or segment of normal ECG.
3. Be familiar with the characteristics of abnormal ECG.
4. Understand the electrophysiology of the heart.
5. Comprehend the principle of the spirometry.
6. Understand the mechanism of respiratory physiology.
7. Perform the lung function tests, know the indication and limitation of the lung function tests.
8. Interpretation of the lung function test reports.
9. Understand the principle of arterial blood gas tests.
10. Interpretation of the lung function test reports.
11. Learn the principal of ultrasonic diagnosis.
12. Learn the typical image in occupied diseases.
13. Learn the typical image of cardiac inner structure, valvular heart diseases, the pericardial effusion and congenital cardiovascular defects.

COURSE CONTENTS

Chapter 1 ECG

1. The mechanism and leads of ECG.
2. The characteristics of normal ECG, and the measuring of waves and segments of ECG.
3. Clinical use of ECG.
4. Analysis method of ECG.

5. Common abnormal ECG.

(1) Hypertrophy in left or right atrium, and ventricle.

(2) Premature beat.

(3) Tachycardia.

(4) Atrial fibrillation.

(5) Atrial ventricular block.

(6) Fascicular block.

(7) Myocardial infarction.

Chapter 2 Spirometry & Arterial Blood Gas Interpretation

1. Spirometry Interpretation.

(1) Know well which diseases are the indication or the limitation of the spirometry.

(2) Clinical implications of the spirometry.

(3) Review the Respiratory Physiology, the Pulmonary Anatomy.

(4) Introduce the measurement and the development of the spirometry. Know how to perform the lung function test.

(5) Interpret the reports of lung function test.

2. Arterial Blood Gas Interpretation.

(1) Introduce the basic conception of the ABG test.

(2) Clinical implications of the ABG test.

(3) Interpret the reports of ABG test.

Chapter 3 Ultrasound Examination

1. Physical fundament and basic diagnostic principal of ultrasonic examination,

2. Clinical applications of ultrasound.

3. The diseases of liver and gallbladder and kidney.

4. The valvular heart dideases, pericardial diseases, congenital cardiovascular defects.

PRACTICAL

1. Analyze the normal and typical abnormal ECG under the direction of teacher.

2. Write the report of ECG.

Part five Medical Records Writing

OBJECTIVES

1. Master the basic principle of medical record writing: format, contents, and

precautions.

2. Be familiar with the pattern and content of complete medical record.

3. Be familiar with the classification of medical record.

4. Understands the meanings and purpose of the medical record.

Skill.

Master the skill of how to make a medical record clearly, in right form and present the clinical data accurately, intactly and objectively.

COURSE CONTENTS

1. The definition of medical record and it's classification.

2. The principals of medical record.

3. The format and issues of medical record.

PRACTICE

1. Clinical probation: to practice the inquiry and clinical data collection, physical examination and make a primary diagnosis.

2. Write a full medical record based on the real patient in the hospital in 24 hours.

3. Evaluate and modify the medical record in class.

Part Six Diagnosis Theory

OBJECTIVES

1. Master the basic principle of making a diagnosis, the line of making a diagnosis. The category, contents and format of clinical diagnosis.

2. Be familiar with the additional criteria to test the diagnosis.

3. Be familiar with the thinking methods.

4. Understanding the common line of thought of how to make a diagnosis.

Skills

According to the clinical practice, to be familiar with the relationship between clinical symptoms, signs and the reports of the laboratory tests and special examination. and then make a diagnosis.

COURSE CONTENTS

1. Short introduce of how to making a diagnosis.
2. The process and approach of making a diagnosis.
3. Collecting, settling, and analyzing the clinical data.
4. Making a primary diagnosis.

PRACTICAL

1. Visit a in-patient, practice the inquiry skill.
2. Discuss and analyze the data collected, then making a primary diagnosis.

LABORATORY DIAGNOSTICS

实验诊断学

Chief Editors（主编）

Fu Rong（付蓉） Tianjin Medical University（天津医科大学）
Zhou Hong（周红） Jiangsu University（江苏大学）
Hu Zhidong（胡志东） Tianjin Medical University（天津医科大学）
Zhang Jun（张钧） Zhejiang University（浙江大学）
Wang Xuefeng（王学锋） Shanghai Jiao tong University（上海交通大学）
Zheng Lei（郑磊） Southern Medical University（南方医科大学）

Deputy Chief Editors（副主编）

Ruan Erbao（阮二宝） Tianjin Medical University（天津医科大学）
Chen Yu（陈瑜） Zhejiang University（浙江大学）
Xu Yuanhong（徐元宏） Anhui Medical University（安徽医科大学）
Wang Mei（王梅） Jiangsu University（江苏大学）
Xu Shunfu（徐顺福） Nanjing Medical University（南京医科大学）
Lou Bin（楼滨） Zhejiang University（浙江大学）

Editors（编委）（按姓氏拼音排序）

Chen Yu（陈瑜） Zhejiang University（浙江大学）
Dong Lizhen（董丽真） Tianjin Medical University（天津医科大学）
Fu Rong（付蓉） Tianjin Medical University（天津医科大学）
Hu Zhidong（胡志东） Tianjin Medical University（天津医科大学）
Jiang Kui（姜葵） Tianjin Medical University（天津医科大学）
Liang Wenjie（梁文杰） Hebei University of Chinese Medicine（河北中医学院）
Lou Bin（楼滨） Zhejiang University（浙江大学）
Mu Yuan（穆原） Nanjing Medical University（南京医科大学）
Ruan Erbao（阮二宝） Tianjin Medical University（天津医科大学）
Wang Mei（王梅） Jiangsu University（江苏大学）
Wang Ting（王婷） Jiangsu University（江苏大学）
Wang Xuefeng（王学锋） Shanghai Jiaotong University（上海交通大学）
Wang Zengguang（王增光） Tianjin Medical University（天津医科大学）
Xie Erfu（谢而付） Nanjing Medical University（南京医科大学）
Xu Shunfu（徐顺福） Nanjing Medical University（南京医科大学）
Xu Yuanhong（徐元宏） Anhui Medical University（安徽医科大学）
Zhang Jun（张钧） Zhejiang University（浙江大学）

Zhang Wei（张薇） Tianjin Medical University（天津医科大学）
Zheng Lei（郑磊） Southern Medical University（南方医科大学）
Zhou Hong（周红） Jiangsu University（江苏大学）

Course Description

Laboratory Diagnostics is a bridge between the basic medical course and clinical works. Student will learn the basic technique and the principles of how to make a diagnosis. Laboratory Diagnostics is based on clinical examination to provide the results or data, by the physician with clinical history/family history, symptoms/signs, imaging examination/pathological examination and other information, through logical thinking and scientific analysis, applied to clinical diagnosis, differential diagnosis, Disease observation, efficacy monitoring and prognosis; but also for scientific research, prevention of disease, health census, health care, individualized medical and genetic counseling to provide an important experimental basis.

Objectives

At the end of the course the student will be able to:

1. Perform the basic tests in laboratory diagnosis.
2. Design simple experiments for the study of the variations happened in body fluid..
3. Understand the mechanism in the experiment.
4. Avoid fault results caused by choosing unsuitable tests or collection specimen incorrectly.
5. Know the clinical complications of routine laboratory tests and how to apply these tests rightly.

Teaching and Learning Methods

1. Case studies: The significant and common diseases are discussed in the form of a representative clinical case in which the clinical features, the course of the disease in those particular patient and relevant laboratory investigations are discussed by a clinical faculty in an interactive manner in small groups. This is followed by demonstration of the features of the disease in that case by the supervisor.

2. Didactical lectures: discussing a particular topic at length in an one to two hours lecture.

By a combination of all kinds of modalities/tools, student learns applied aspects of the disease diagnosis.

Recommended Textbooks

Denise D Wilson. 2007. McGraw-Hill's Manual of Laboratory and Diagnostic Tests [M]. New York: McGraw-Hill Education.

Frances Talaska Fischbach. 2003. A Manual of Laboratory and Diagnostic Test [M]. 7th ed. Philadelphia: Lippincott Williams & Wilkins Publisher.

Kingfisher Fitness. 2010. A Text-Book of Clinical Diagnosis by Laboratory Methods, For the Use of Students [M]. Practitioners and Laboratory Workers, Montana: Nabu Press.
Michael Laposata. 2010. Laboratory Medicine [M]. New York: McGraw-Hill Education.
Shijun Li (李士军). 2014. Laboratory Diagnostics [M]. Beijing: Science Press.

Examinition Pattern & Marks Distribution

1. Theory Papers: Fill in the blanks, explain the terms, answer the questions, multiple choices, T or F questions etc.

2. Experiment.

(1) Written examination: Fill in the blanks and answer the questions.

(2) Practical.

Contents	Theory	Experiment	Contents	Theory	Experiment
Quiz	10		Attendance		10
Case study	5		Report		10
Review	5		Practice		40
Mid-term exam	20		Written exam		40
Final exam	60		Total	100	100

Schedule Table

Contents	Theory	Experiment	Total
Outline of hematology and basic blood hematology tests	4	3	
Cytological study of bone marrow	2		
Studies for hemorrhage, thrombus, hemostasis	4		
Laboratory diagnosis of blood diseases	4		
Urine studies	2	3	
Stool studies	1	3	
Cerebrospinal fluid and serous effusion studies	1		
Tests for glucose metabolism	3	3	
Blood fats tests	3		
Routine tests of hepatic diseases	3		
Nephropathy tests in laboratory	3	3	
Biochemistry marker of myocardium damage tests	3		
Examine functions of immune system	3	3	
Diagnostic tests of infective immunity	3		
Examines for autoimmune diseases	3		
Tumor markers	3		

Continued

Contents	Theory	Experiment	Total
Routine items used in clinical microbiology	2		
Microbiology examines of routine clinical specimens	2	3	
Hospital infection and management	2		
Total	51	21	72

Course Contents

Chapter 1 Clinical Hemotology Studies

1. Outline.

(1) Objectives.

The basic conceptions of laboratory diagnosis and the content of this course should be mastered. Know how to chose and evaluate a laboratory diagnosis rightly. The students are going to get an overview of laboratory diagnosis through understanding the physical factors and the interferential factors influencing tests, the conceptions of reference value, abnormal value, accuracy and errors, the standard methods, and the international significance of diagnostic technology.

2. Basic hematology tests.

(1) Objectives.

1) Master the tests about red blood cell count (RBC; Erythrocyte Count), measuring hemoglobin (HB), white blood cell count (WBC; Leukocyte Count), and differential white blood cell count (Diff; Differential Leukocyte Count). Remember all reference values of these tests and understand clinical implications of them.

2) Know the classification of anemia according to the morphology of red blood cells. The reference values of Hematocrit (Hct; Packed Cell Volume, PCR) and RBC and their clinical implications must be mastered.

3) Understand the methods of reticulocyte count and sedimentation rate (also called Erythrocyte Sedimentation Rate, ESR). The reference values and clinical implication of these tests also need be mastered.

(2) Course contents.

1) Red blood cell count, hemoglobin, Hematocrit.

① The methods of RBC and measuring hemoglobin are taught and the reference values of these tests are introduced.

② The reference values and clinical implications of Hematocrit.

③ Clinical implications when the values of RBC and hemoglobin increase or decrease under physical or pathological conditions.

④ Clinical implications about the change of morphology of red blood cell, including size, morphology, stain feature and structure abnormality.

⑤ Platelet Count (PLT).

2) Anemia characterized by morphology of red blood cells.

① Normal diameter and average diameter of red blood cell and their clinical implications.

② The morphologic characters and common reasons in macrocytes anemia, anisocytosis anemia, microcytes with hypochormatic anemia, and microcytes anemia.

3) Concise principle used in diagnosing hemolytic anemia (HA).

① Understand clinical implications of Ham test and testing free hemoglobin.

② Clinical implications of Rous test and measurement of haptoglobin.

③ Clinical implications of osmotic fragility test and measurement of methemalbumin.

④ Clinical implication of Coombs test and cold agglutination test.

4) Reticulocyte count, its reference values and clinical implications.

5) Influencing factors, reference values and clinical implications and principle in Erythrocyte Sedimentation Rate.

6) White blood cell count and differential white blood cell count.

① Reference values and physical variations of WBC and differential white blood cell count.

② Clinical implication in change of quantity of different white blood cell.

③ Clinical implication in the structural change of nucleus of neutrophils.

④ Clinical implication about common pathological morphology of leukocyte.

3. Cytological study of bone marrow.

(1) Objectives.

1) Understand the indications of bone marrow test. The process of hematopoiesis, the normal components in bone marrow, and clinical implications about the grade of proliferation, Granulocyte/Erythroblast Ratio and their clinical variation should also be known.

2) Understand routine stain methods for cell chemical reactions, including glycogen, peroxidase, neutrophilic alkaline phosphatase, iron stain, and their clinical implication. Know how to use these tests in identifying diagnosis of acute leukemia.

3) Understand the characters of bone marrow in anemia, leukemia and idiophathic thrombocytopenic purpura (ITP).

(2) Course contents.

1) The process of hematopoiesis and the features of morphology in normal blood cell.

2) The content, methods and clinical implication of bone marrow studies.

3) Introduce the characters of bone marrow in leukemia, anemia (contains iron deficiency anemia, IDA, sideroblastic anemia, SA, aplastic anemia, AA) and idiophathic thrombocytopenic purpura (ITP).

4) Introduce route methods of blood cell chemical stain.

4. Studies for hemorrhage, thrombus, hemostasis.

(1) Objectives.

1) Master the mechanism of hemostasis, coagulation and dissolves by plasmin.

2) Know the protocol in selecting tests for hemorrhage and the steps in laboratory.

3) Understand common reasons leading to abnormal hemostasis and hemorrhage. Know the tests for discovering these abnormalities, and mechanisms and clinical implications of these tests.

(2) Course contents.

1) Review mechanism of hemostasis, coagulation and dissolves by plasmin.

2) Reference values and clinical implications of routine tests for hemorrhage, thrombus, hemostasis, including bleeding time, clotting time, plasma prothrombin time, activated partial thromboplasting time, platelet count.

3) Summarize how to choose and apply these items.

5. Laboratory diagnosis of blood diseases.

(1) Objectives.

Understand all kinds of laboratory tests and clinical implication used in blood disease.

(2) Course contents.

1) Laboratory diagnosis of anemia.

2) The standard for classification of leukemia.

3) Laboratory tests for discovering abnormalities in hemorrhage, hemostasis.

Chapter 2 Studies of Body Fluid Excretions and Secretions

1. Urine studies.

(1) Objectives Master the methods of various urine testing, and the reference values and clinical implication of every parameter in routine urinalysis.

(2) Course contents.

1) Collection and storage of urine specimens.

2) Routine urinalysis and its clinical implications.

① General characters: urine volume, urine appearance, urine odor, urine specific gravity.

② Chemical tests: urine PH, urine protein, urine glucose, urine ketones.

③ Microscopic examine of urine sediment: urine epithelial cells, urine red blood cells, urine white blood cells, casts and urine crystals.

3) Special examine of urine: morphological examine of urine red blood cells, electrophoresis of urine protein, microalbumminuria and immunoglobulin in urine (also called as Bence-Jones protein, BJP).

2. Stool studies.

(1) Objectives.

1) Know how to examine stool specimen and clinical implications of variation.

2) Understand measurement of occult blood and its clinical implication.

(2) Course contents.

1) Collection of specimens.

2) Stool specimens analysis and its clinical implications.

① General examine of stool: Stool consistency, shape, form, amount and odor.

② Microscopic examine of stool: cells in stool, eggs of parasites in stool, fat in stool and food residue in stool.

③ Occult blood test: methods and clinical implication.

3. Cerebrospinal fluid and serous effusion studies.

(1) Objectives.

1) Understand the indications and methods of cerebrospinal fluid examination, and

its reference values and clinical implications.

2) Understand general characters of cerebrospinal fluid in cerebral and meningitic disease.

3) Master the differences between transudate and exudate.

(2) Course Contents.

1) Examine of cerebrospinal fluid.

① Indications and contraindications of cerebrospinal fluid aspiration, and the methods for aspiration.

② Tests for cerebrospinal fluid.

A. General character: color, appearance, and clotting in CFS.

B. Chemical examine: quality and quantity test of protein in CFS, measurement the amount of glucose in CFS, and the content of chloride in CFS.

C. Microscopic examine of cerebrospinal fluid: total cell count; differential cell count.

D. Microbiology test of cerebrospinal fluid.

E. General characters of cerebrospinal fluid in cerebral and meningitic disease.

2) Examine of serous effusion.

① Indications and contraindications of collection serous effusion, and the methods of collection specimens.

② Tests for serous effusion.

A. General tests: volume, color, appearance, clotting and specific gravity.

B. Chemical tests: Rivalta tests, and quantity tests for protein.

C. Microscopic examine of serous effusion: cell count, differential cell count and cancer cell examination, etc.

③ Identification of transudate and exudate.

Chapter 3 Chlincal Chemistry Studies

1. Tests for glucose metabolism.

(1) Objectives.

1) Master the reference values and clinical implications of fasting blood glucose; indications and methods of oral glucose tolerance test (OGTT), and its reference values and clinical implications; reference values and clinical implications of glycated hemoglobins and fructosamine; the diagnostic standard of diabetes mellitus and the goal of its control and therapy.

2) Be familiar with the influencing factors during collection specimens and testing.

3) Know the procedure of glucose metabolism and how glucose be taken in and let out. Understand clinical implications in measurement of insulin and C-peptide.

(2) Course contents.

1) Tests of fasting blood glucose and oral glucose tolerance test.

2) Measurement for glycated hemoglobins and fructosamine.

3) Diagnostic standard of diabetes mellitus and its targets of control and therapy.

4) Determine the amount of insulin and C-peptide in serum.

2. Blood fats tests.

(1) Objectives.

1) Master the reference values and clinical implications of total cholesterol, high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein (LDL), triglycerides; the characters of Lp (α) and its reference values and clinical implications; the reference values and clinical implications of apolipoprotien A and B; electrophoresis of lipoprotein and the classification of hyperlipidemia.

2) Comprehend the interfering factors during sample collection and testing; the classification of disorder in lipoprotein metabolism.

3) Know the reference values and clinical implications of homocysteine (HCY) in plasma.

(2) Course contents.

1) Tests for total total cholesterol, high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein (LDL), triglycerides.

2) Measurement of Lp (α).

3) Electrophoresis of lipoproteins.

4) Determine of apolipoprotien.

5) Typing hyperlipidemia.

6) Measurement of homocysteine in plasma.

3. Routine tests of hepatic diseases.

(1) Objectives.

1) Master the reference values, pathological variations and clinical implications of ALT, AST, ALP and GGT, and their features and the distributions in tissues. Measurement of total protein in plasma, the ratio of A/G, electrophoresis of proteins, the reference values and the clinical implications of these test should be comprehend completely. He/she should master the reference values and clinical implications of bilirubin and total bile acids, and can evaluate the degree of jaundice.

2) Be familiar with the clinical implications in measurement of enzymes in cytoplasm and amino oxidase. The students should know the different and correlative between ALP and GGT which are tested in hepatic disease and bone disease, and the significance of these tests. He/she also need know the reference values and clinical implications of prealbumin in plasma, and the basic process of bilirubin mechanism and the key points of identifying all kinds of jaundice.

3) Understand the goal for hepatic disease in laboratory diagnosis, the structure of liver, the criterion of choosing enzymatic tests, and the particular alternation of proteins in plasma when the hepatic cells were damaged.

(2) Course contents.

1) Goal of laboratory diagnosis in hepatic diseases.

2) Enzymatic tests in hepatic diseases.

3) Examine the proteins in plasma.

4) How to select tests for evaluating liver function. 3.4.

4. Nephropathy tests in laboratory.

(1) Objectives.

1) Master the conceptions of renal clearance rate and glumerilar filtration rate, the reference values and clinical implications of creatinine clearance (Ccr), serum creatinine,

serum urea, tests of condensed or diluted urine, measurement of urine osmolality, CH2O test, microabluminuria test and test of urine N-acetyl-β-glucosaminidase (NAG). He/she also needs to know well how to grade the damage of glomerular function and how to choose and apply these tests.

2) Know the relation among the tests of glumerilar filtration, the reference values and clinical implications of urine transferrin and α1-macroglobulin (α1-MG).

3) Understand the reference values and clinical implications of serum β2-macroglobulin (β2-MG) and γ-microglobulin. The students should acquaint themselves with tests for examine the function of proximal tubule and tubular acidification effect. Additional, one is able to find out microscopic structure of kidney and their physical functions.

(2) Course contents.

1) Test for glumerilar filtration and the standard system for grading the damage of glomerular function.

2) Re-absorpiton and excrtion of tubular tests.

3) Examine of kidney damage in early stage.

4) The protocol for choosing tests of renal functions.

5. Biochemistry marker of myocardium damage tests.

(1) Objectives.

1) Master the characters, tissue distributions, reference values and clinical implications of creatine kinase (CK) and lactiate dehydrogenase (LD) and their isoenzyme. The reference values and clinical implications of measurement of myoglobin (Mb) should be grasped, too.

2) Be familiar with the concenption of acute coronary syndrome (ACS) and the steps for diagnosing these diseases. The standard diagnosis of acute myocardial infarction (AMI) from WHO should be known, including how to collect sample and how many times should be taken after AMI happened.

3) Understand the redefinition of AMI and its diagnostic standard, and the judgement of reperfusion after thrombus dissolving.

(2) Course contents.

1) Typical alternation of myocardium markers during AMI.

2) Measurement of spectrum of myocardium enzymes and their isoenzymes.

Chapter 4 Chlincal Immunology Studies

1. Examine functions of immune system.

(1) Objectives.

1) Master the reference values and clinical implications of measurement of IgG, IgA, IgM, and the immune markers of the subunits of T cells.

2) Understand the clinical implications and methods of complement and circle immune complex.

3) Know the clinical significance and methods of cytokines and its receptors, and IgE, sIgE, IgD.

(2) Course contents.

1) Methods of testing five immunoglobuins, complement, and circle immune complex and their clinical implications.

2) Examine of the subgroups of T cells and its clinical significance.

3) The clinical significance of cytokines and their receptors.

2. Diagnostic tests of infective immunity.

(1) Objectives.

1) Mastery: mastery of the methods and clinical significance of Ag and Ab determination of HAV, HBV, HCV, CRP test.

2) Familiarity: determination and clinical significance of HIV, syphilis/diplococcus gonorrhoeae infections.

3) Understand: immunological examinations of mycoplasma/chlamydia infections, serological tests in common use of bacterial infections, immunological detections of parasitic diseases, CRP test.

(2) Course contents.

1) Ag and Ab determination of HAV, HBV, HCV, HDV, HEV.

2) Immunological examinations of HIV, syphilis/diplococcus gonorrhoeae/mycoplasma/chlamydia infections.

3) TORCH tests.

4) Serological tests in common use of bacterial infections.

5) Iimmunological detections of parasitic diseases.

6) CRP test.

3. Examines for autoimmune diseases.

(1) Objectives.

1) Master the determination and the clinical significance of ANA, anti-dsDNA, anti-ENA, ANCA.

2) Understand the determination and the clinical significance of AFA, SMA, AMA.

3) Know the determination and the clinical significance of RF and cryoglobalin.

(2) Course contents.

Determination and the clinical significance of ANA, anti-dsDNA, anti-ENA, ANCA, RF and cryoglobalin.

4. Examination of tumor markers.

(1) Objectives.

1) Masters the conception/clinical value of tumor markers, determination and t he clinical significance of the frequently used tumor markers (AFP, CEA, CA19-9, CA125, CA15-3).

2) Understand the determination and the clinical significance of NSE, SCC, PSA.

3) Know the questions should be pay attention in the clinical application.

(2) Course contents.

Determination and the clinical significance of frequently used tumor markers, clinical application of tumor markers, and the questions should be pay attention in the clinical application.

Chapter 5 The Basic Knowledge Used in Clinical Microbiology

1. Routine items used in clinical microbiology.

(1) Objectives.

1) Master the clinical implications and category of antimicrobial susceptibility t e s t, and how to explain the results.

2) Understand some kinds of specific bacterium which usually have particular resistance for some drugs and the clinical implications of these phenomenons.

3) Know how to examine bacteria throng slide smear and isolating culture and the clinical implications of these tests.

(2) Course contents.

1) Morphology of bacterium.

2) Isolate culture of pathogen.

3) Antimicrobial susceptibility test.

4) Specific tests used in particular resistance of some bacterium.

2. Microbiology examines of routine clinicalspecimens.

(1) Objectives.

1) Master how to storage all kinds of specimens, their clinical alters and how to write a report.

2) Be familiar with collection methods of all kinds of samples and the clinical implications of common pathogen.

3) Know various clinical specimens often contain which kinds of bacterium.

(2) Course contents.

Microbiological examination used in blood, bone marrow, urine, stool, sputum, cerebrospinal fluid, bile, serous effusion, and pus.

3. Hospital infection and management.

(1) Objectives.

1) Master the definition of hospital infection and its diagnostic standard.

2) Be familiar with the causation and prevalence of hospital infections, and the multiple resistant bacterium that are recently key surveyed.

3) Know the bacterium usually caused hospital infections, the trends of bacteria resistance, and the significance and strategy for controlling hospital infection.

(2) Course contents.

1) Common knowledge of hospital infection.

2) Manage hospital infection.

3) Trends of bacteria resistance and the strategy to control it.

EXPERIMENT

Count Blood Cells

OBJECTIVES

1. Master the test of counting red blood cells through microscopy.

2. Master the principle and methods of counting reticulocyte.
3. Master the principle and methods of counting white blood cells through microscopy.
4. Master the methods of counting platelet.

CONTENTS

1. Red blood cell count.
(1) Specimens: peripheral blood or EDTA-anticoagulated venous blood.
(2) Objectives and requirements:
1) Place diluents for red blood cell counting.
2) Add blood.
3) Pour into the hemocytometer.
4) Count the erythrocytes.
5) Calculate the erythrocytes.
2. Reticulocyte count.
(1) Specimens: fresh whole blood.
(2) Objectives and requirements:
1) Add reagents.
2) Mix the blood sample with a supravital stain.
3) Prepare a smear with this mixture and scan under a microscope.
4) Count and calculate the reticulocytes.
3. White blood cell count.
(1) Specimens: peripheral blood.
(2) Objectives and requirements:
1) Place dilution in the test tube.
2) Mix the blood sample with dilutions.
3) Destroy red blood cells.
4) Pour the mixture into the hemocytometer.
5) Count the leukocyte.
6) Calculate the leukocyte.
4. Platelet count.
(1) Specimens: peripheral blood.
(2) Objectives and requirements:
1) Place dilution for platelet count.
2) Mix the blood sample with dilutions.
3) Pour the mixture into the hemocytometer.
4) Count the platelet.
5) Calculate platelet.

Routine Urine Tests and Urinary Sediment Tests

OBJECTIVES

1. Master the general feature of urine and the methods to test them.
2. Master the methods for measuring the quality and quantity of proteins.
3. Master the way to detecting glucose in urine and its clinical implications.
4. Master the methods to detect urine ketone bodies.
5. Master the methods used in urinary sediment and the components in it.

CONTENTS

1. General characters of urine.

(1) Specimens: urine from patient and normal healthy person.

(2) Objectives and requirements:

1) Observe the appearance of urine and the clarity of the specimen.

2) Smell the urine and record perceptions.

3) Measure the entire urine amount in a graduated and appropriately calibrated pitcher or other receptacle.

4) Dip the reagent strip into a freshly voided urine specimen and compare the color changed with the standardized color chart on the bottle that correlates color results with PH values.

5) Urine specific gravity test.

2. Tests for discovering the proteins in urine.

(1) Specimens: different degree proteinuria from patients.

(2) Objectives and requirements:

1) Add urine.

2) Place the reagents and mix them.

3) Observe the results and report it.

3. Measure the amount of urine protein (Biuret methods).

(1) Specimens: different degree proteinuria from patients.

(2) Objectives and requirements:

1) Measure the amount of urine.

2) Add urine or diluted urine.

3) Place sulfuric acid into the urine.

4) Pour sodium tungstate into the mixture.

5) Centrifugation.

6) Add normal solution.

7) Add biuret reagents.
8) Water bath the mixture.
9) Measure the absorption.
10) Calculate the results.
4. Urine glucose (Clinitest).
(1) Specimens: urine from patients with diabetes mellitus.
(2) Objectives and requirements:
1) Boiling the compounds.
2) Add urine into the compounds.
3) Observe the results and report.
5. Urine ketones tests (Rothera method).
(1) Specimens: urine from diabetes mellitus patients with ketoacidosis.
(2) Objectives and requirements:
1) Add urine.
2) Place the compounds of sodium nitroprusside into urine.
3) Add high concentration of ammonia water towards the mixture.
4) Observe the results and report it.
6. Urinary sediment test (Centrifugation and smear).
(1) Specimens: urine sample from patients with nephritis.
(2) Objectives and requirements:
1) Suspense the urine.
2) Draw the urine.
3) Centrifugation.
4) Aspirate and pour out the suspension.
5) Prepare a smear.
6) Observe and count through microscopy.

Stool Studies

OBJECTIVES

1. Master the appearance of stool, examine the stool through microscopy. The substances exist in stool and estimating methods should be known.
2. Master occult blood test.

CONTENTS

1. Examine the appearance of stool.

(1) Specimens: stool samples from patients with related diseases.

(2) Objectives and requirements:

Observe the color, appearance, and parasite in stool by eyes.

2. Examine stool through microscopy.

(1) Specimens: stool samples from patients with related diseases.

(2) Objectives and requirements:

1) Prepare a smear.

2) Observe: erythrocyte, macrophage, microphage, epithelium, food residue, eggs of parasite, bacterium and yeast.

3) Report the results.

3. Occult blood test (colloidal gold tests).

(1) Specimens: stool specimens from patients with hemorrhage in low digestive tract.

(2) Objectives and requirements:

1) Treat the samples.

2) Dip the reagent trips and observe.

3) Report the results.

Blood Sugar Test

OBJECTIVES

1. Know the reference values and clinical implications of blood sugar.

2. Master the principle and methods of measuring glucose by glucose oxidase.

CONTENTS

1. Specimens: serum sample.

2. Objectives and requirements:

(1) Add serum sample or standardized glucose solution into two tubes, respectively.

(2) Place PBS buffer into the tubes.

(3) Add the mixture with enzyme and phenol into the tubes.

(4) Shake the tube lightly, and water bath the tubes.

(5) Absorption.

(6) Calculation and report the results.

Blood Fats Tests

OBJECTIVES

1. Master the principle and methods of testing triacylglycerol, its reference values and clinical implications.

2. Learn how to isolate human serum HDL. Furthermore, to master enzymatic methods used in measuring cholesterol.

CONTENTS

1. Serum triacylglycerol tests (Accty-lactone, 2, 4-pentanedione methods).

(1) Specimens: serum from patiens.

(2) Objectives and requirements:

1) Extraction.

2) Saponification.

3) Add reagent in order to oxidize and observe the color.

4) Absorption.

5) Report the results.

2. Isolate HDL in serum and measuring the amount of cholesterol.

(1) Specimens: serum specimens.

(2) Objectives and requirements:

1) Isolate HDL.

2) Add standardized cholesterol solution, HDL suspension, distilled water in three tubes, respectively.

3) Place reagents into the tubes.

4) Shake the tubes lightly and water baths them.

5) Absorption.

6) Report the results.

Renal Functions Tests

OBJECTIVES

1. Understand routine tests used in evaluating renal functions.

2. Master preparing blood filtration.

3. Know the principle of testing serum creatinine, and its reference values and clinical implications.

4. Know the principle of testing serum urea, and its reference values and clinical implications.

CONTENTS

1. Serum creatinine tests (Jaff's methods).

(1) Specimens: serum from patiens.

(2) Objectives and requirements:

1) Prepare blood filtration without proteins.

2) Add the sample, standardized creatinine solution and distilled water in three tubes, respectively.

3) Place the reagents into the tubes.

4) Shake tubes lightly and place it on the table, wait for a few minutes.

5) Absorption.

6) Report the results.

2. Serum urea tests (Diacetylmonoxime methods).

(1) Specimens: serum specimens.

(2) Objectives and requirements:

1) Add standardized urea solution, serum specimen, distilled water in three tubes, respectively.

2) Place reagents into the tubes.

3) Shake the tubes lightly and water bath them, and then, cool them down.

4) Absorption.

5) Report the results.

Precipitation And Agglutination Reactions

OBJECTIVES

1. Master the conceptions of precipitation, and to know the principles and clinical implications of several routine precipitate reactions.

2. Master the definition of agglutination. And to understand the principles, methods and clinical implications of some types of agglutinate reactions.

CONTENTS

1. Single radial immunodiffusion.

(1) Specimens: serum samples.

(2) Objectives and requirements:

1) Prepare agar plate contained diagnostic serum.

2) Puncture holes on the plate.

3) Add reference serum or samples into the holes.

4) Place the plate into a box, which can keep it moister and incubation at 37℃.

5) Measure the diameter of the precipitation and calculate the amount of immunoglobulin.

2. Two-way radial immunodiffusion.

(1) Specimens: serum specimen.

(2) Objectives and requirements:

1) Prepare agar plate.

2) Puncture holes on the agar.

3) Add antibody into the middle hole and add antigens into the peripheral holes.

4) Place the plate into a box, which can keep it moister, and incubation at 37℃ for 24h.

5) Observe the results and analysis.

3. Hemagglutination test.

(1) Specimens: immune serum.

(2) Objectives and requirements:

1) Prepare "o" antigen and sensitized red blood cells suspension.

2) Take nine tubes and numbered them.

3) Diluted serum by double times.

4) Add the sensitized red blood cells suspension.

5) Shake the tubes lightly and water bath at 37℃ .

6) Observe the results and determine the titer.

Examine an Unknown Sample by Microbiological Methods

OBJECTIVES

1. Master the tests frequently used in microbiological studies.

2. Know the procedure and methods to examine an unknown sample.

1. Specimens: unknown specimen.

2. Objectives and requirements:

(1) Collect a little specimen to Gram stain.

(2) Select appropriate media to culture the specimen.

(3) Isolate the single colony to Gram stain. Moreover, choose the appropriate biochemical reactions to examine the same colony.

(4) Identify the organism according to the results from biochemical reaction and Gram Stain.

(5) Antimicrobial susceptibility tests according to the characters of bacterium.

(6) Report the results.

MEDICAL IMAGING
医学影像学

Chief Editors（主编）
Luo Liangping（罗良平） Jinan University（暨南大学）
Wang Peijun（王培军） Tongji University（同济大学）
Li Ziping（李子平） Sun Yat-sen University（中山大学）

Deputy Chief Editors（副主编）
Duan Xiaoyi（段小艺） Xi'an Jiaotong University（西安交通大学）
Shi Changzheng（史长征） Jinan University（暨南大学）
Liang Weixiang（梁伟翔） Guangzhou Medical University（广州医科大学）

Editors（编委）（按姓氏拼音排序）
Chen Meng（陈蒙） Soochow University（苏州大学）
Cui Meng（崔盟） The People's Hospital of Guangxi Zhuang Autonomous Region（广西壮族自治区人民医院）
Duan Xiaoyi（段小艺） Xi'an Jiaotong University（西安交通大学）
Li Ziping（李子平） Sun Yat-sen University（中山大学）
Liang Jianye（梁建业） Jinan University（暨南大学）
Liang Weixiang（梁伟翔） Guangzhou Medical University（广州医科大学）
Lu Li（鲁丽） Shanghai University of Traditional Chinese Medicine（上海中医药大学）
Luo Liangping（罗良平） Jinan University（暨南大学）
Shi Changzheng（史长征） Jinan University（暨南大学）
Wang Peijun（王培军） Tongji University（同济大学）
Xiao Zeyu（肖泽宇） Jinan University（暨南大学）
Zhang Dong（张冬） Jinan University（暨南大学）

Course Description

Medical imaging refers to several different technologies that are used to view the human body in order to diagnose, monitor, or treat medical conditions. Each type of technology gives different information about the area of the body being studied or treated, related to possible disease, injury, or the effectiveness of medical treatment. The main parts of medical imaging include techniques and diagnostic

radiology. Medical imaging techniques describes the principle of different imaging modalities in physics, including X-ray imaging, computed tomography (CT), magnetic resonance imaging (MRI), ultrasound and nuclear isotope imaging. Diagnostic radiology refers to the application of different imaging modalities used in all the major organ systems.

The course provides an introduction to both clinical and technical aspects and covers applications in all the major organ systems: brain, heart, abdomen and muscle-skeleton. An introduction to ongoing research and new developments in the different modalities and techniques will be given. The course will be given by a multi-disciplinary group of lecturers with background in clinical radiology, nuclear medicine, informatics, medical physics and radiation protection.

Objectives

At the end of the course, the MBBS students should have a basic understanding in the following areas:

1. Knowledge of basic principles for medical imaging based on advanced image modalities: X-ray, MRI, CT, Ultrasound and Nuclear isotope imaging.

2. Knowledge of technological similarities and differences between the different modalities and choice of equipment for different clinical applications.

3. Knowledge of normal and abnormal appearance of different diagnostic imaging modalities in the major organ systems, and of the typical signs of different diseases in clinic.

4. Knowledge of new applications and technology trends for the different modalities.

At the end of the course, the MBBS students should have a basic ability in the following areas:

1. Master the application of different medical imaging technique procedures used in clinic.

2. Master the ability of reading medical imaging, and identifying imaging signs of different diseases.

Teaching and Learning Methods

Theory: Teaching the medical imaging to students is provided with lectures and tutorials. The principles of different imaging techniques will be introduced based on the basic physics, and the diagnostic radiology will be taught referring to the pathophysiology of different medical conditions.

Practical: Practical training asks for medical students to master the basic principles, methods, procedures and strategies for the major medical imaging techniques used in clinic. The student is advised to stay at the medical imaging department for a period time, and practice the skill of reading medical images under the guidance of the teachers in clinic.

Recommended Reference books

Adam, A K Dixon. 2008. Grainger & Allison's Diagnostic Radiology [M]. 5th ed. New York: Elsevier Churchill Livingstone.

Liu Linxiang. 2012. Diagnostic Imaging [M]. 2nd ed. Bei Jing: People's Military Medical Press.

Qu Xiaofeng, Bian Jie, Guo Dongmei. 2014. English Tutorial of Medical Imaging [M]. Bei Jing: Peking Union Medical College Press.

Schedule Table

Part	Contents	Hours	Part	Contents	Hours
1	Imaging Techniques	3	7	Imaging of the Urogenital System	3
2	Imaging of Central Nervous System	3	8	Imaging of the Mammary Glands	3
3	Imaging of Head and Neck	3	9	Imaging of the Osteoarticular and Muscular System	12
4	Imaging of the Respiratory System	12	10	Interventional Radiology	3
5	Imaging of the Circulatory System	3			
6	Imaging of the Digestive System	9	Total		54

Course Contents

PART 1 IMAGING TECHNIQUES

Chapter 1 X-ray Imaging

1. The principles of X-ray imaging.

2. Equipment of X-ray and property of radiograph.
3. Clinical applications of X-ray imaging.
4. Characteristics of X-ray images.
5. The security of X-ray examinations.

Chapter 2 Multi-detector Computed Tomography (MDCT)

1. The principles of MDCT.
2. Technical overview of MDCT.
3. Image reconstruction and analysis.
4. Clinical applications of MDCT.
5. Characteristics of MDCT images.
6. Radiation dose considerations.

Chapter 3 Magnetic Resonance Imaging (MRI)

1. The principles of MRI.
2. Instrumentation: magnets, coils and computers.
3. Pulse sequences.
4. Clinical applications of MRI.
5. Characteristics of MRI images.
6. Safety considerations.

Chapter 4 Ultrasound

1. The principles of ultrasound.
2. Ultrasound instrument.
3. Clinical applications of ultrasound.
4. Characteristics of ultrasound images.
5. Safety of ultrasound.

Chapter 5 Radionuclide Imaging

1. The principles of radionuclide imaging.
2. Radionuclide imaging instruments.
3. Clinical applications of radionuclide imaging.
4. Characteristics of radionuclide images.
5. Safety considerations.

Chapter 6 New Development of Medical Imaging

1. Molecular imaging and the development.
2. Quantitative medical imaging.

Chapter 7 Diagnostic Radiology Thought Procedures

1. The principles of reading.
2. The procedures of reading.

PART 2 IMAGING OF CENTRAL NERVOUS SYSTEM

Chapter 1 Brain

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Congenital malformation of the brain.
5. Trauma.
6. Infectious diseases of brain.
7. Cerebral vascular diseases.
8. Intracranial neoplasm.
9. Others.

Chapter 2 Spine

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of spine.

PART 3 IMAGING OF HEAD AND NECK

Chapter 1 Eyes and Orbit

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of eyes and neck.

Chapter 2 Ears

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of ears.

Chapter 3 Nose and paranasal sinuses

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.

4. Diseases of nose and paranasal sinuses.

Chapter 4 Pharynx and Larynx

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of pharynx and larynx.

PART 4 IMAGING OF THE RESPIRATORY SYSTEM

Chapter 1 Lungs

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of the lungs.

Chapter 2 The Chest Wall, Pleura and diaphragm

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of the chest wall, pleura and diaphragm.

Chapter 3 Mediastinum

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of the mediastinum.

PART 5 IMAGING OF THE CIRCULATORY SYSTEM

Chapter 1 Heart and Pericardium

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Congenital heart disease.
5. Nonischaemic acquired heart disease.
6. Ischaemic heart disease.

Chapter 2 Great Vessels

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of the great vessels.

PART 6 IMAGING OF THE DIGESTIVE SYSTEM

Chapter 1 Esophagus and Gastrointestinal tracts

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of the esophagus and gastrointestinal tracts.

Chapter 2 Liver, Biliary system, Pancreas and Spleen

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of liver.
5. Diseases of biliary system.
6. Diseases of pancreas.
7. Diseases of spleen.

PART 7 IMAGING OF THE UROGENITAL SYSTEM

Chapter 1 Urinary System

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of kidney.
5. Diseases of ureter.
6. Diseases of bladder.

Chapter 2 Adrenal Glands

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of adrenal glands.

Chapter 3 Female Genital System

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of female genital system.

Chapter 4 Male Genital System

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of male genital system.

PART 8 IMAGING OF THE MAMMARY GLANDS

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of the breast.

PART 9 IMAGING OF THE OSTEOARTICULAR AND MUSCULAR SYSTEM

Chapter 1 Skeleton

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of the bone.

Chapter 2 Joints

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of the joints.

Chapter 3 Soft Tissue

1. Methods of examination.
2. Normal anatomy and variance.
3. Common abnormal imaging signs.
4. Diseases of the soft tissue.

PART 10 INTERVENTIONAL RADIOLOGY

1. Principles of interventional radiology.
2. Equipment of interventional radiology.
3. Clinical applications of interventional radiology.
(1) Contraindications.
(2) Complications.
(3) Medicine.
(4) Preoperative preparation.
(5) Postoperative treatment.
4. Security of interventional radiology.

INTERNAL MEDICINE

内 科 学

Chief Editors（主编）

Fu Rong（付蓉） Tianjin Medical University（天津医科大学）
Jiang Kui（姜葵） Tianjin Medical University（天津医科大学）
An Ping（安萍） Wuhan University（武汉大学）

Deputy Chief Editors（副主编）

Ruan Erbao（阮二宝） Tianjin Medical University（天津医科大学）
Lu Biao（卢飚） Tianjin Medical University（天津医科大学）
Ma Yan（马燕） Fudan University（复旦大学）
Lian Yixin（连一新） Soochow University（苏州大学）
Xue Bicheng（薛必成） Wenzhou Medical University（温州医科大学）

Editors（编委）（按姓氏拼音排序）

An Ping（安萍） Wuhan University（武汉大学）
Bian Bo（边波） Tianjin Medical University（天津医科大学）
Fu Rong（付蓉） Tianjin Medical University（天津医科大学）
Huang Yan（黄艳） North China University of Science and Technology（华北理工大学）
Jia Hongwei（贾红蔚） Tianjin Medical University（天津医科大学）
Jiang Kui（姜葵） Tianjin Medical University（天津医科大学）
Li Shuo（李硕） Tianjin Medical University（天津医科大学）
Lian Yixin（连一新） Soochow University（苏州大学）
Lu Biao（卢飚） Tianjin Medical University（天津医科大学）
Lv Xing（吕星） Tianjin Medical University（天津医科大学）
Ma Yan（马燕） Fudan University（复旦大学）
Ruan Erbao（阮二宝） Tianjin Medical University（天津医科大学）
Xue Bicheng（薛必成） Wenzhou Medical University（温州医科大学）
Zhang Wei（张薇） Tianjin Medical University（天津医科大学）

Course Description

Internal medicine is an important clinical subject, which has the characteristics of broad scope and consolidated integrity. It's the base of all the other clinical subjects and associated with many basic and clinical materials. Internal medicine does with

physiology and pathophysiology of every system and organ of human being, and concerns about etiology, pathogenesis, clinical feature, diagnosis, treatment and prevention, which has the general senses in clinical theories and practices and therefore be the foundation of learning and mastering other clinical subjects.

The mission of teaching internal medicine includes basic theories and knowledge of prevalent internal diseases, training in basic skills and introduction of seldom but classic diseases. For the terms "master", "be familiar with" and "understand", teachers will give "detailed", "general" and "key pointed" explanation. During the teaching course, teachers will introduce some advancements of modern medicine, will encourage students, in accordance to Practices, to learn by themselves and exchange their opinions, will culture students to think, analyze, and solve problems independently.

In the present syllabus, materials will include: Introduction, Respiratory System, Circulatory System, Nephrology System, Endocrine System, Digestive System, Hematology System and Immunology System.

Teaching-learning methodology includes lecture, ward visit, and laboratory practice. Teachers will prepare teaching plan previously and use multimedia teaching-tools to accentuate simplicity and improve teaching effects.

Teaching and Learning Methods

Multimedia lecture.
Typical case analysis.

Recommended Textbooks

Anthony S Fauci, Eugene Braunwald, Dennis L Kasper, 2010. Harrison's Pulmonary and Critical Care Medicine [M]. 17th ed. New York: McGraw-Hill Professional.

Douglas L Mann, Douglas P Zipes, Peter Libby, et al. 2014. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine [M]. 10th ed. Philadelphia: W B Saunders Company.

Ernest B. 2001. Williams Hematology [M]. 6th ed. New York: McGraw-Hill Company.

Gary S Firestein, Ralph C Bucld, Sherine E Gabriel, et al. 2017. Kelly & Firestein's Textbook of Rheumatology [M]. 10th ed. Philadelphia: Elsevier.

G Michael Besser, Michael O Thorner. 2002. Comprehensive Clinical Endocrinology [M]. 3rd ed. New York: Mosby Ltd.

Karl Skorecki, Glenn M Chertow, Philip A Marsden, et al. 2016. Brenner and Rector's the Kidney [M]. 10th ed. Philadelphia: Elsevier.

Kasper, Dennis L Braunwald. 2004. Harrison's Principles of Internal Medicine [M]. 16th ed. New York: McGraw-Hill Medical Publishing Division.

Lee Goldman, Andrew I Schafer. 2016. Goldman's Cecil Medicine [M]. 25th ed. Beijing: Peking University Medical Press.

Lee Goldman, Andrew I Schafer. 2015. Cecil Textbook of Medicine [M]. 25st ed. New York: W B Elsevier.

Lee Goldman, Andrew I Schafer. 2011. Goldman's Cecil Medicine [M]. 24th ed. Elsevier.
Michael A Grippi, Jack A Elias, Jay A Fishman, et al. 2015. Fishman's Pulmonary Diseases and Disorders SE [M]. 5th ed. New York: McGraw-Hill Professional.
Ncis S Greenspan, David G Gardner. 2001. Basic & Clinical Endocrinology [M]. 6th ed. Beijing: McGraw Hill.
P Reed Larsen, Henry M Kronenberg, Shlomo Melmed, et al. 2003. Williams Textbook of Endocrinology [M]. 10th ed. Philadephia: Saunders Publishers.
Valentin Fuster, Robert A Harrington, Jagat Narula, et al. 2017. Hurst's the Heart [M]. 14th ed. New York: McGraw-Hill Medical.

Schedule Table

RESPIRATORY DISEASE

chapter	Contents	hours
1	Introduction of internal medicine	2
2	Pneumonia	6
3	Asthma	5
4	Cor pulmonal	6
5	Tuberculosis	7
6	Chronic obstructive pulmonary disease	9
7	The plural	5
8	respiratory failure	5

CIRCULATION SYSTEMIC DISEASE

chapter	Contents	hours
1	Heart failure	5
2	Arrhythmia	6
3	Hypertension	3
4	Coronary artery disease	8
5	Valvular heart disease	5
6	Pericardial disease	2
7	Endocarditis	2
8	Cardiomyopathy and myocarditis	5
9	Common congenital heart disease	2

GASTROENTEROLOGY

chapter	Contents	hours
1	Introduction	1
2	Gastritis	3.5
3	Peptic ulcer	4
4	Functional Gastrointestinal Disease	3.5
5	Intestinal Tuberculosis and Tuberculous Peritonitis	3.5
6	Cirrhosis of the Liver	5
7	Hepatic Encephalopathy	3.5
8	Primary Carcinoma of the Liver	2.5
9	Ulcerative Colitis	4
10	Crohn's disease	3.5

Continued

NEPHROLOGY		
chapter	Contents	hours
1	General Introduction	0.5
2	Primary Glomerular Disease	6
	Nephritic Syndrome	2.5
	Chronic Glomerular Disease, IgA Nephropathy	2
3	Secondary Glomerular Disease	2
4	Acute Interstitial Nephritis	2
5	Urinary Tract Infection	2
6	Acute Renal Failure	3
7	Chronic Renal Failure	4

HEMATOLOGY		
chapter	Contents	hours
1	General introduction	1
2	Anemia: General Aspects	1
3	Iron Deficiency Anemia	1.5
4	Megaloblastic Anemia	2.5
5	Aplastic Anemia	2.5
6	Hemolytic Anemia	2.5
7	Leukopenia, Neutropenia and Agranulocytosis	2
8	Myelodysplastic Syndromes	3
9	Leukemia	5
10	Lymphoma	3
11	Plasma Cell Dyscrasia	1.5
12	Myeloproliferative Disease	2
13	Hemorrhagic Disease	1
14	Idiopathic Thrombocytopenic Purpura	1.5
15	Hematopoietic Stem Cell Transplantation	2

ENDOCRINOLOGY		
chapter	Contents	hours
1	Introduction	2
2	Thyroid disease	6
3	Diabetes mellitus	6
4	Hypercortisonism	1
5	Primary chronic hypocortisonism	1

RHEUMATOLOGY		
chapter	Contents	hours
1	Rheumatoid Arthritis	2
2	Systemic Lupus Erythematosus	2
3	Sjögren Syndrome	2
4	Spondyloarthropathies (SpAs) and Ankylosing Spondylitis (AS)	2
	Total	197

Part One Introduction

OBJECTIVES

1. Understand how to be a good doctor, How to learn Internal Medicine.
2. Master the definition and scope of internal medicine.
3. Master the aims and methodology of learning internal medicine.
4. Understand the advancements of internal medicine.
5. Understand the principles of diagnostic thinking.
6. Understand the principles of therapeutic thinking.

COURSE CONTENTS

1. Understand the changes of internal medicine materials in new medical mode.
2. Understand the sense of culturing correct medical thinking mode.
3. The physician should know their responsibility of interacting with patient. The ideal patient-physician relationship is based on thorough knowledge of the patient, on mutual trust, and on the ability to communicate.
4. An informative history and methodical and thoroughly physical examination should be performed.
5. Medical decision-making including ordering of additional tests, requests for prognosis and treatment should be evidence-based.

Part Two Respiratory Disease

OBJECTIVES

This course includes the structure and function of the respiratory system, pneumonia, cor pulmonale, asthma, tuberculosis, chronic obstructive pulmonary disease and the pleura. Through the study, the students should:

1. Master the diagnosis and medicine therapy of pneumonia and asthma; diagnosis, therapeutic principle and complication of chronic obstructive pulmonary disease and cor pulmonale; diagnosis and medicine therapy of tuberculosis; mechanisms and diagnostic procedures of pleural effusion.

2. Understand the mechanisms of asthma; the pathogens which caused to pneumonia; the pathology and pathogenesis of COPD; the pathophysiology of pulmonary hypertension and cor pulmonale; treatment of pleural effusion; risk factors for tuberculosis.

COURSE CONTENTS

Chapter 1 Pneumonia

1. Definition: Pneumonia s an inflammatory condition of the lung.

2. Classification of pneumonia: Pneumonia is most commonly classified by where or how it was acquired: community-acquired, aspiration, healthcare-associated, hospital-acquired, and ventilator-associated pneumonia.

3. Pathogens: Pneumonia is due to infections caused primarily by bacteria or viruses and less commonly by fungi and parasites.

4. Diagnosis of pneumonia.

(1) the signs and symptoms.

(2) physical examination.

(3) blood test.

(4) radiological images.

(5) microbiology exam.

5. Differential diagnosis: tuberculosis, lung cancer, chronic obstructive pulmonary disease (COPD), asthma, pulmonary edema, bronchiectasis.

6. Management of pneumonia: antibiotics.

Chapter 2 Asthma

1. Definition: Asthma is a chronic inflammatory disorder of the airway.

2. The basal pathologic characteristic is inflammation in the airway and structural remodeling.

3. Measurements of lung function.

4. The differential diagnosis of Asthma:

(1) Heart-induced asthma.

(2) COPD.

(3) Lung cancer.

(4) Allergic pulmonary disease.

5. Clinical classification of asthma.

(1) Intermittent.

(2) mild persistent.

(3) moderate persistent.

(4) sever persistent.

6. Management of asthma.

7. Asthma Education.

Chapter 3 Tuberculosis

1. Definition: Tuberculosis (TB) is an chronic infectious disease caused by the bacterium Mycobacterium tuberculosis (MTB).

Aetiology: Mycobacterium tuberculosis, acid-fast bacilli.

2. Epidemiology: began to increase.

3. risk factors of tuberculosis:

(1) people infected with HIV.

(2) people who were infected with TB bacteria in the last 2 years.

(3) babies and young children.

(4) people who inject illegal drugs.

(5) people who have other diseases that weaken the immune system.

(6) elderly people.

(7) people who were not treated correctly for TB in the past.

4. Pathology.

5. Clinical features and diagnosis:

(1) Coughing that lasts three or more weeks.

(2) Coughing up blood.

(3) Chest pain, or pain with breathing or coughing.

(4) Unintentional weight loss.

(5) Fatigue.

(6) Fever.

(7) Night sweats.

(8) Chills.

(9) Loss of appetite.

6. Classification of tuberculosis:

(1) Primary pulmonary tuberculosis.

(2) Post-primary pulmonary tuberculosis.

(3) Miliary tuberculosis.

(4) Extra-pulmonary tuberculosis.

7. General principles of control and prevention.

(1) Case-finding.

(2) BCG vaccination.

(3) Tuberculin tests.

8. Chemotherapy (first-line and second-line medicine).

(1) Adverse effects.

9. Standard drug regimens (Total duration 6 months).

(1) Initial phase 2 months: Pyrazinamide (plus ethambutol) in combination with isoniazid and rifampicin.

(2) Continuation phase 4 months: Isoniazid and rifampicin.

10. Prognosis.

Chapter 4 Corpulmonale

1. Definition: Pulmonary heart disease, also known as cor pulmonale is the enlargement and failure of the right ventricle of the heart as a response to increased vascular resistance (such as from pulmonic stenosis) or high blood pressure in the lungs.

2. The causes of pulmonary heart disease:

(1) acute respiratory distress syndrome (ARDS).

(2) COPD.

(3) Primary pulmonary hypertension.

(4) Blood clots in lungs.

(5) Kyphoscoliosis.

(6) Interstitial lung disease.

(7) Cystic fibrosis.

(8) Sarcoidosis.

(9) Obstructive sleep apnea (untreated).

3. Main pathophysiological changes of pulmonary heart disease is the product of greater right ventricular workload secondary to a rise in pulmonary arterial pressures.

4. Clinical manifestation of pulmonary heart disease:

(1) History.

(2) Physical examination.

(3) Laboratory findings.

(4) lectrocardiography.

(5) Chest X-ray find.

(6) Echocardiography.

(7) Radionuclide studies.

(8) Catheterization and angiography.

5. Treatment of pulmonary heart disease.

(1) Oxygen.

(2) bronchodilators (anticholinergic agents, beta-agonists, and theophylline),

(3) Diuretics,

(4) Digitalis.

(5) Antibiotics.

Chapter 5 The Pleura

1. The Etiology and Mechanisms of pleural effusion.

(1) Increased hydrostatic pressure in microvascular circulation.

(2) Increased permeability of the microvascular circulation.

(3) Decreased oncotic pressure in microvascular circulation.

(4) Impaired lymphatic drainage.

(5) Movement of fluid from peritoneal space.

(6) Injury to the chest.

2. The Diagnostic Procedures.

(1) History.

(2) Symptoms.

(3) Asymptomatic, Chest pain, Dyspnea, Cough, Fever, Symptoms of associated disease.

(4) Physical Examination.

(5) Laboratory Examination (Radiological Examination: Chest X-ray, CT; Ultrasound Examination).

(6) Thoracentesis and pleural fluid analysis.

(7) Routine tests: Appearance, Specific gravity, Cell counts.

(8) Biochemical tests: PH, Protein content, Glucose, lipid content, LDH, Adenisine deaminase (ADA), CEA.

(8) Immunity examination: Rheumatoid factor (RF), Lupus pleuritis (LE) cells.

(9) Gram stain and culture.

(10) Cytologic examination.

(11) Pleural Biopsy.

3. The Treatment of pleural effusion.

(1) Thoracentesis.

(2) Treatment for the cause.

Chapter 6 Chronic Obstructive Pulmonary Disease (COPD)

1. Definition: COPD is a disease state characterized by airflow limitation that is not fully reversible.

2. Cigarette smoking remains the most important environmental factors implicated in the development of COPD.

3. Main pathophysiological changes of COPD are airflow limitation, hyperinflation of lungs and disturbanced gas exchange.

4. The three most common symptoms in COPD are cough, sputum production, and exceptional dyspnea.

5. Associated examination.

(1) X-ray examination: Again need perform or to make clear radiographic evidence of chronic bronchitis and emphysema.

(2) Laboratory examination: routine test of sputum and blood, sputum culture and drug-sensitive test.

(3) The lung function characteristics of COPD.

6. Complications.

(1) Cor pulmonale.

(2) acute lung infection.

(3) primary pneumothorax etc.

7. Treatment of COPD and acute exacerbation.

(1) bronchodilators (anticholinergic agents, beta-agonists, and theophylline),

(2) inhaled or parenteral corticosteroids,

(3) mucolytic agents.

(4) pulmonary rehabilitation.

Chapter 7 Respiratory Failure

1. Definition: Respiratory failure results from inadequate gas exchange by the respiratory system, meaning that the arterial oxygen, carbon dioxide or both cannot be kept at normal levels.

2. Classification of respiratory failure.

(1) Type I.

(2) Type II.

3. Mechanisms of respiratory failure.

(1) Low ambient oxygen (e. g. at high altitude).

(2) Ventilation-perfusion mismatch.

(3) Alveolar hypoventilation.

(4) Diffusion problem.

(5) Shunt.

(6) increased airways resistance.

(7) Reduced breathing effort.

(8) A decrease in the area of the lung available for gas exchange.

(9) Neuromuscular problems.

(10) Deformed.

4. Treatment.

(1) Oxygen.

(2) Endotracheal intubation.

(3) mechanical ventilation.

Part Three Circulation Systemic Disease

OBJECTIVES

This course includes cardiomyopathy, hypertension, coronary artery disease, myocarditis, heart failure, arrhythmia, pericardial disease, endocarditis, valvular heart disease. Through the study, the students should:

1. Master the diagnosis and medicine therapy of hypertension; diagnosis, therapeutic principle and complication of angina pectoris and myocardial infarction; diagnosis and medicine therapy of heart failure; electrocardiogram character and therapeutic principle of arrhythmic emergency.

2. Understand the manifestation of cardiomyopathy, pericardial disease, valvular heart disease, some arrhythmia, and some progresses in coronary artery disease, arrhythmia therapy, for example interventional therapy.

COURSE CONTENTS

Chapter 1 Heart Failure

1. Chronic heart failure.

(1) Etiology: myocardial lesion systolic dysfunction, diastolic dysfunction, pressure overload, filling constriction.

(2) Provocation: infection, overwork, emotional excitation, severe arrhythmia, anemia, pregnancy, and parturition, abnormal metabolism, and concomitant disease, iatrogenic factor.

(3) Pathophysiology: mechanism, neuroendocrine, remodeling.

(4) Clinic manifestation:

1) Left heart failure: ischemic systemic circulation, congestive pulmonic circulation.

Symptom: dyspnea, cough, hemoptysis, unable to lie down. nocturnal paroxysmal dyspnea.

Signs: tachycardia, S3, moist rales changing with body position.

NYHA heart failure classification.

2) Right heart failure: congestive systemic circulation.

Symptom: digestive symptom, nausea, vomiting, edema, oliguria.

Signs: S3, dilation of jugular veins liver enlargement, hepatojugular reflux sign, edema, thoracic or abdominal effusion.

3) Whole heart failure: left and right heart failure.

(5) Examination:

1) Chest X-ray.

2) UCG.

3) Intravenous pressure.

4) Nuclide imagine.

(6) Diagnosis.

(7) Differential diagnosis:

1) Left heart failure: differentiate with respiratory diseases, bronchial asthma, pulmonary embolism, pericardial tamponade.

2) Right heart failure: constrictive pericarditis, chronic pericardial tamponade, cirrhosis.

(8) Prevention and treatment.

1) Treat protopathy.

2) Rest.

3) Restrict sodium intake and fluid intake.

4) Medicine: diuretics, ACEI/ARB, β-receptor blocker, digitalis, others vasodilators.

5) Other treatment: CRT, artificial heart, surgery, heart transplantation.

2. Acute left heart failure.

(1) Etiology: acute myocardial infarction, hypertension emergency, acute myocarditis, severe arrhythmia.

(2) Pathophysiology: left ventricular output decreases, LVEDP increases, pulmonary capillary wedge pressure increases.

(3) Clinic manifestation: abrupt dyspnea, orthopnea, sweat, anxious, cough, pink frothy sputum, high/low BP, tachycardia, gallop, pulmonary rales.

(4) Examination: chest X-ray, blood gas analysis, hemodynamic monitor.

(5) Diagnosis and differential diagnosis: bronchial asthma, pulmonary embolism.

(6) Therapy.

1) Treat protopathy.

2) Oxygen.

3) Sitting position.

4) Medicine: ACEI, diuretic, morphine, nitrate, other vasodilator, aminophylline, digitalis, other cardiotonic.

5) Left ventricular assistant devices.

Chapter 2 Common Arrhythmia

1. Definition, etiology, mechanism, diagnosis, clinic manifestation, principle of treatment of common and malignant arrhythmia.

2. The use of defibrillator, the indication of pacemaker.

3. The common arrhythmia:

(1) Sinus arrhythmia: sinus tachycardia, sinus bradycardia, sick sinus syndrome, sinus arrhythmia.

(2) Atrial arrhythmia: atrial tachycardia, atrial fibrillation, atrial flutter.

(3) PSVT.

(4) Ventricular arrhythmia: premature ventricular contraction, ventricular tachycardia, ventricular fibrillation.

(5) Atrioventricular block.

(6) Bundle branch block.

4. Therapy:

(1) The principle of tachycardia and bradycardia arrhythmia.

(2) The common antiarrhythmia drugs.

(3) Nonmedical therapy: electrical defibrillator, RFCA, pacemaker, surgery, ICD.

Chapter 3 Essential Hypertension

1. Definition.

2. Epidemiology.

3. Differential diagnosis: hypercortisolism, pheochromocytoma, aldosteronism, glomerular nephritis, coarctation of aorta, renal artery stenosis.

4. Classification:

(1) pressure classification.

(2) risk grade.

Risk factor: cigarette, hyperlipemia, diabetes mellitus, age, gender, family history.

5. Target organ demage.

(1) cardiovascular system.

(2) cerebral vessels.

(3) kidney.

(4) eyes.

6. Therapy.

(1) Target blood pressure.

(2) Nonmedical treatment: relax, avoiding excessive stress, sodium restriction, physical training, weight reduction, quit smoking.

(3) Antihypertensive medicines:

1) diuretics: thiazides, loop diuretics, potassium sparing agents.

2) β-receptor blocker.

3) calcium channel block.

4) ACEI.

5) ARB.

6) α-receptor blocker.

7) others: methyldopa, clonidine, reserpine.

(4) treatment of hypertensive emergency.

Chapter 4 Atherosclerosis And Coronary Artery Disease

1. Pathogenic factor: atherosclerosis, coronary spasm, abnormal coronary origin, embolism.

2. Risk factor: hypertension, hyperlipemia, diabetes mellitus, cigarette, age, gender, family history.

3. Classification: angina pectoris, myocardial infarction, latent coronary artery disease, heart failure, sudden death, arrhythmia.

4. Acute coronary syndrome: STEACS, NSTEACS.

5. Angina pectoris:

(1) Mechanism.

(2) Clinic manifestation.

(3) Classification: stable and unstable angina pectoris (initial onset angina pectoris, accelerated angina pectoris, angina decubitus, Prinzmetal's variant angina pectoris, postinfarction angina pectoris).

(4) Examination: ECG, cardiac enzyme, CAG, nuclide imagine, UCG, exercise test.

(5) Diagnosis.

(6) Therapy: general therapy, medicine, PCI, CABG.

6. Acute myocardial infarction.

(1) Manifestation.

(2) Examination: ECG, cardiac enzyme, CAG.

(3) Diagnosis and differential diagnosis: pulmonary embolism, aortic dissection, cardiomyopathy, etc.

(4) Complication: cardiac rupture, arrhythmia, heart failure, sudden death, chest pain.

(5) Therapy: thrombolysis, medicine (nitrate, heparin, ACEI, β blocker, antiplatelet drugs, statin), PCI, CABG; the methods of revascularization, indication and contraindication.

(6) Treatment of complication.

7. Therapeutic principle by the classification of ACS.

Chapter 5 Valvular Heart Diseases

1. The epidemiology of valvular heart disease.

2. Common valvular heart disease.

(1) Mitral stenosis:

1) Etiology: rheumatic heart disease, congenital, retrogression mitral calcification.

2) Hemodynamic change: mitral stenosis, pressure in left atrium increases, pulmonic hypertension, pneumonedema, high afterload of right ventricular, hypertrophy in right ventricular, right heart failure, low left ventricular preload, peripheral ischemia.

3) Symptoms: pulmonic congestion (cough, sputum, frothy pink sputum, dyspnea, paroxysmal nocturnal dyspnea), systemic congestion (abdominal distention, stomachache, nausea, vomiting, edema), peripheral ischemia (fatigue, weakness).

4) Signs: mitral faces, thrill, enhanced S1, enhanced P2, P2 splitting, rambling murmur.

5) Assistant examination: X-ray, ECG, UCG, interventional exam.

6) Diagnosis and differential diagnosis.

(2) Mitral regurgitation:

1) Etiology: rheumatic, mitral prolapse, retrogression, connective tissue disease, infective endocardium, valve perforation, papillary muscle dysfunction/interruption, left ventricular enlargement.

2) Hemodynamic change: mitral regurgitation, left ventricular volume overload, high pressure in left atrium, high pressure in pulmonic vein/capillary vessel, left ventricular enlargement.

3) Symptoms: palpitation, fatigue, breathlessness, dyspnea.

4) Signs: ventricular enlargement, lessened S1, S3, apical systolic blowing murmur.

5) Assistant examination: X-ray, ECG, UCG, interventional exam.

(3) Aortic stenosis.

1) Etiology: rheumatic, aortic valve calcification, congenital deformity.

2) hemodynamic change: high left ventricular afterload, left ventricular hypertrophy, low compliance, left ventricular output decreases, left heart failure.

3) Symptom: secondary ischemia in heart, cerebrum, kidney, peripheral organ; left heart failure.

4) Signs: aortic valve area systolic thrill, lessened S2, S4, aortic ejection murmur, decreased pulse pressure.

5) Assistant examination: X-ray, ECG, UCG.

(4) Aortic regurgitation:

1) Etiology: rheumatic, congenital deformity, aortic distension, infective

endocarditis, aortic valve perforation, aortic dissection, aneurysm of aortic sinus.

2) Hemodynamic change: aortic regurgitation, volume overload in left ventricle, left ventricular hypertrophy, low compliance, left heart failure, ischemia in coronary artery.

3) Symptom: chest pain, dizziness, palpitation, left heart failure.

4) Signs: left ventricle enlargement, Coeur en sabot, lessened S2, blowing murmur in Erb's point, Austin Flint murmur, increased pulse pressure, peripheral vascular signs.

5) Assistant examination: X-ray, ECG, UCG.

3. Main complication:

(1) Congestive heart failure.

(2) Infective endocarditis.

(3) Arrhythmia.

(4) Embolism.

4. Therapy.

(1) Medical.

(2) Surgery.

5. Multivalvular heart disease.

Chapter 6 Pericardial Disease

1. Etiology: bacterial infection, fungal infection, viral infection, parasite infection, noninfective, rheumatic, uremia, neoplastic, autoimmune disorders, trauma and chemic causes, idiopathic.

2. Acute pericarditis: manifestation, chest pain, pericardial friction rubs and sound, ECG.

3. Pericardial effusion: chest pain, cough, nausea; cardiac dullness border enlarge, cardiac impulse decrease and cardiac sound lessens, Kussmaul sign, dilation of liver, ascites, edema.

4. Pericardial tamponade:

(1) Etiology: acute pericarditis, acute myocardial infarction, ventricular wall rupture, trauma, rupture of aortic sinus aneurysm, aortic dissection.

(2) Manifestation: chest pain, low blood pressure, shock, tachycardia, dyspnea, cough, nausea.

(3) Therapy: pericardiocentesis, management of protopathy.

5. Constrictive pericarditis:

(1) Etiology.

(2) Manifestation: dyspnea, cough, anorexy, fatigue, pericardial knock, dilation of jugular veins, Kussmaul sign, paradoxical pulse, dilation and tenderness of liver.

(3) Diagnosis and differential diagnosis: portal cirrhosis, cardiac cirrhosis, right heart failure constrictive cardiomyopathy.

Chapter 7 Infective Endocarditis

1. Definition and classification.

2. Etiology, pathogen, and pathophysiology: common bacteria, structure features of

vegetations, embolism and abscess caused by falling off of the vegetations.

3. Manifestation: infective symptom, new cardiac murmur, embolism, Osler node, petechia.

4. Laboratory examination: hemoculture, UCG, blood and urine routine.

5. Diagnosis and differential diagnosis.

6. Treatment: choice of antibiotics and surgical operation indication.

Chapter 8 Cardiomyopathy and Myocarditis

1. Definition and clinical classification of idiopathic cardiomyopathy.

2. Dilated cardiomyopathy.

(1) Etiology: viral myocarditis.

(2) Pathology: cardiac enlargement mainly, and with significant myocardial hypertrophy and fibrosis.

(3) Manifestation: symptoms and signs of left and/or right heart failure, S3/S4, arrhythmias.

(4) Assistant examination: X-ray, ECG, UCG, nuclide imagine, myocardial biopsy.

(5) Diagnosis and differential diagnosis: secondary cardiomyopathy (ischemic cardiomyopathy, alcoholic cardiomyopathy).

(6) Therapy: medicine (for heart failure, arrhythmia, embolism), surgery.

3. Hypertrophic cardiomyopathy.

(1) Etiology.

(2) Pathology: asymmetric hypertrophy of ventricular septum, hypertrophy and disorganized arrangement of cardiac muscle.

(3) Classification: obstructive and nonobstructive.

(4) Clinical manifestation: palpitation, chest pain, dyspnea, syncope or sudden death, systolic ejection murmur which increases or decreases according to impact factors.

(5) Laboratory examination: ECG, UCG.

(6) Diagnosis and differential diagnosis: hypertension and coronary artery disease.

(7) Therapy: medicine (for heart failure, arrhythmia, embolism), surgery, pacemaker, chemical ablation.

4. Myocarditis.

(1) Etiology and classification.

(2) Pathology.

(3) Clinical manifestation.

(4) Laboratory examination: cardiac enzyme, UCG, ECG, biopsy, serum viral antibody.

(5) Complication and prognosis: heart failure, arrhythmia, remodeling.

(6) Diagnosis.

(7) Treatment: rest and nutrition, treat heart failure and arrhythmia.

Chapter 9 Common Congenital Heart Disease

The classification, manifestation, and therapeutic principle of congenital heart disease.

Part Four Gastroenterology

OBJECTIVE

The main characteristic of the gastrointestinal tract is to form the ability of binding the medical theory with the Practice and compound comprehension of the students. The course content includes the etiology, pathogenesis, diagnostic, therapy, prognosis and the novel development of the common disease and the frequent disease of the gastrointestinal tract. Such as peptic ulcer, inflammatory bowel disease, irritable bowel syndrome, cirrhosis, liver cancer and hepatic encephalopathy, etc.

COURSE CONTENTS

Chapter 1 Introduction

1. The physiology and pathophysiology of gastroenterology.
2. The etiology and pathology of gastroenterology diseases.
3. The diagnostics and differential diagnostics of gastroenterology diseases.
4. The prevention and cure principle of gastroenterology diseases.

Chapter 2 Gastritis

1. Acute gastritis.

(1) Introduction.

The most common type is acute simple gastritis, which is often companied with acute gastroenteritis or general infection.

(2) Etiological factors and mechanisms.

Chemical and physical factors, microbial infection, or bacterial toxin. The pathologic change of gastric mucosa is mainly hyperemia, edema, exudation, mild erosion spot hemorrhage, leucocyte infiltrating in the mucosa.

(3) Clinical symptoms.

General symptoms and ones in the digestive tract. Enteritis can be seen when the causes are bacteria infection or their toxin. The course is self-limited and can disappear in days.

(4) Diagnosis.

The course, the symptoms and the signs.

(5) Differentiation.

Acute erosive gastritis, early stage of some acute abdomen.

(6) Therapy.

Eliminate the predisposing factors, rest; fasting, transfusion and remission of symptoms sometimes are necessary. Antibiotics are not in the list of general treatment except the infections of Salmonella, helicobacter pylori and halophil are confirmed.

2. Chronic Gastritis.

(1) Introduction.

Definition, incidence rate and type.

(2) Etiological factors and mechanisms.

Possible factors: The continue from acute gastritis; Duodenogastric reflux; Immune factors; Infective factors (such as *H. pylori*).

(3) Pathology.

The features of chronic erosive inflammation and chronic atrophic gastritis.

(4) Clinical symptoms.

Many cases have no typical symptoms or signs, and part of the patients no symptoms. Corpus gastritis has different manifestation and pathophysiological processes from antrum gastritis, the latter are more often than the former.

(5) Lab findings.

1) Analysis of gastric juice: pentagastrin stimulating test.

2) Serum assay: Gastrin in chronic atrophic corpus gastritis is often increased moderately, while gastric acid, pepsinogen, and intrinsic factor excretion decreased. Serum PCA often positive (>75%); In contrast, gastrin in antrum gastritis is decreased.

3) Digestive tract X-ray findings of Barium: That of antrum gastritis may be similar with gastric cancer.

4) Endoscope and biopsy.

(6) Diagnosis.

Mainly depending on endoscope and biopsy, while the course, symptoms and X-ray findings no specificity.

(7) Prevention and treatment.

1) Eliminate the etiological factors.

2) Drugs.

3) Operation.

Chapter 3 Peptic Ulcer

1. Introduction.

Definition, incidence of disease and epidemiology.

2. Etiological factor and episodic mechanism.

Show that the etiological factor and episodic mechanism are unknown clearly. The basic episodic mechanism is that the imbalance between defensive factor and invasive factor of gastric mucous membrane and duodenal mucous membrane was destroyed, and it caused lesion of membrane mucous.

(1) The increasing of invasive factor.

1) *Helicobacter pylori* infection.

2) NSAIDs.

3) Digestive action of gastric acid-pepsin;

4) Stress of emotion;

5) Gastrin and stagnation at gastric antrum;

6) Diet out of control and imbalance;

7) Side effect of drugs.

(2) The decreasing of mucosal defense factors.

1) Destruction of mucus-mucosa barrier;

2) Mucosal hematological circle and renew of epithelial cells;

3) Absence of prostaglandin;

4) Influence of gastric and duodenal inflammation;

5) Harmful effects of smoking.

(3) Other factors.

1) Hereditary predisposition: heredity, blood group.

2) Other diseases.

3. Pathology.

Common locus; quantity and size; pathological anatomy and development of ulcer.

4. Clinical situation.

Focal point.

Clinical behavior, chronic process, periodic episode, regularity of symptom.

(1) Symptom.

1) Ache: locus, kind, law, influence factor;

2) Other gastrointestinal symptom and general physical symptom.

(2) Physical sign.

No clearly sign in remission period or without complication.

Special types: Postbulbar ulcer, Pyloric ulcer.

5. Complications.

Massive hemorrhage, Penetration, Pyloric obstruction, canceration, mainly massive hemorrhage.

6. Lab exam.

(1) Serum gastrin: It is not made as general exam unless gastrinoma is doubted.

(2) Analysis of gastric juice: pentagastrin stimulating tset.

(3) Stool OB.

7. Diagnosis.

Importance of history, and meaning of relative exam.

(1) X-ray exam of Barium meal.

(2) Gastroscope and biopsy of mucosa.

8. Differential diagnosis.

(1) Functional dyspepsia.

(2) Chronic gastritis and duodenal bulb inflammation.

(3) Gastrinoma.

(4) Carcinomatous ulcer.

(5) Ancylostomiasis.

(6) Gastric mucosal prolapse syndrome.

9. Treatment.

Objective and principles.

(1) General treatment: treatment in mental, life, diet, custom, and so on, especially stop smoking and drinking.

(2) Drug.

1) Drugs reducing lesion factors: Antacid, Anticholinergic, H_2-receptor antagonist, PGE2 synthetic agents, PPI.

2) Drugs enhancing defense factors: sucralfate, tripotassium di-citrato-bismuthate, carbenoxolone.

3) Antibiotic treatment.

4) Course and relapse: general course is 4-8 weeks.

(3) Operation.

Chapter4 Functional Gastrointestinal Disease

1. Introduction.

Definition, classification and epidemiology.

2. Etiology and Mechanism.

The exact cause of FGD is unknown.

3. Clinical features.

(1) FD: Upper abdomen pain, distention, belch, nausea and vomiting.

(2) IBS: Diarrhea-type, Constipation-type, Combine-type.

4. Diagnosis procedure and ROME-III/IV.

5. Treatment principle.

synthetic therapy, individuation.

Chapter 5 Intestinal Tuberculosis and Tuberculous Peritonitis

1. Intestinal tuberculosis.

(1) Etiology and Mechanism.

1) The disease may develop secondary to a primary focus elsewhere in the body.

2) Site of involvement.

(2) Pathology.

1) Ulcerative form.

2) hypertrophic form.

A low population density of bacilli with decreased virulence is associated with hypertrophic lesions, whereas a large number of bacilli with enhanced virulence or lacks of attenuation are associated with the formation of ulcers.

(3) Clinical features.

Focus on the ulcerative form.

1) Fever, weight loss, weakness.

2) Diarrhea, constipation.

3) Abdominal pain, abdominal mass.

(4) Complications.

Tuberculous Peritonitis, obstruction, hemorrhage, perforation.

(5) Assistant Examination.

1) Blood, stool routine test. Tuberculous skin testing: PPD.

2) Roentgenographic contrast studies of the intestinal tract.

3) Colonoscopy.

(6) Diagnosis and Differential diagnosis.

1) Diagnosis: age, clinical features, extraintestinal tuberculosis.

2) Differential diagnosis: Crohn's disease, carcinoma, lymphoma, amoebiasis.

(7) Treatment.

1) General treatment.

2) Antituberculous therapy.

3) Operation.

2. Tuberculous peritonitis.

(1) Etiology and Mechanism.

1) Secondary to a primary focus elsewhere in the body.

2 Possible routes of infection.

(2) Pathology.

1) Exudative form.

2) Conglutinant form.

3) Caseous form.

(3) Clinical features.

1) Fever, weight loss, weakness, malnutrition.

2) Obstruction, perforation, fistula, abscess.

(4) Assistant Examination.

1) Blood, stool routine test. Tuberculous skin testing: PPD.

2) Ascites test.

3) X-ray.

4) Celioscopy.

(5) Diagnosis and Differential diagnosis.

1) Diagnosis: age, clinical features, extraintestinal tuberculosis, diagnostic treatment.

2) Differential diagnosis: mass, fever, ascites, abdominal pain.

(6) Treatment.

1) General treatment.

2) Antituberculous therapy.

3) Adrenocorticoids.

4) Operation.

Chapter 6 Cirrhosis of Liver

1. Introduction.

Definition, classification and epidemiology.

2. Etiology and Mechanism.

General cause: viral hepatitis, schistosomiasis, nutritional imbalance, alcohol intoxication, drug intoxication, infection or inflammation in intestines, cholestasis, genetic disease, cryptogenic diseases, ect. The chronic hepatitis is the most common cause in China.

3. Pathology.

Degeneration and necrosis of hepatocytes, eneration nodes and hyperplasia of fibrous tissue cause pseudomicrodochium, followed by hepatic circulation obstruction and then hypertention of porter vein.

4. Clinical features.

Focus on the decompensation stagpalm.

(1) Hemorrhage, endocrine disorder spider angioma, liver-palm), jaundice.

(2) Splenomegaly, ascites.

5. Complications.

(1) Upper digestive tract hemorrhage.

(2) Hepatic Encepholopathy.

(3) Infection.

(4) Primary Carcinoma of Liver.

(5) Hepatic-renal syndrom.

6. Assistant Examination.

(1) Blood routine test.

(2) Liver functional test.

(3) Other serologic test.

(4) Endoscope and ultrasonic examination.

(5) X-ray hepatoangiography.

(6) Liver biopsy.

(7) CT, MRI and DSA.

7. Diagnosis.

Diagnosis is difficult in compensation period, and mainly depends on the causes, the history, liver function, hypertention of portal vein, exams, esophagus X-ray findings of barium meal and BUS, sometimes hepatic penetration and biopsy, laparoscope is necessary.

8. Differential diagnosis.

(1) Hepatomegaly: chronic hepatitis, hepatocarcinoma.

(2) Ascites: tuberculous peritonitis (exudation type), Carcinomatous exudation, constrictive pericarditis, massive ovarian cyst;

(3) Upper digestive tract hemorrhage: peptic ulcer.

(4) Hepatic coma: hypoglycemic coma, uremia, and other toxic coma etc.

(5) Different types of Cirrhosis of Liver. primary biliary cirrhosis.

9. Treatment.

(1) General treatment: rest, proper labour, diet and drugs; traditional medicine; vitamin; agents protecting liver; transfusion albumin and plasma sometimes necessary. Appropriate use of steroid hormone.

(2) Ascites treatment: general treatment, traditional medicine, diuretic, ascites

concentrate and transfusion, abdominal paracentesis.

(3) Treatment of complications.

(4) Operation.

Chapter 7 Hepatic Encepholopathy

1. Introduction.

Hepatic Encepholopathy (HE) is a severe complication of acute and chronic liver diseases for reasons that toxic product of intestinal tract entering systemic circulation which causes great metabolic disorders. Its major manifestation is dysfunction of central nervous system, which leading to mental and nervous symptom and coma.

2. Etiology and Pathogenesis.

(1) Etiology.

(2) Common inducement.

(3) Pathogenesis.

Introduce the origin of ammonia and pseudo-neurotransmitters and the effect on CNS.

3. Pathology.

Explain briefly the changes of brain tissue under microscopy. v

4. Clinical Features.

Explain clearly that the course of HE can be divided into four phases according with consciousness, flapping tremor and electroencephologram (EEG).

Assistant Examination: the importance of blood ammonia, EEG, electrolyte and liver function.

5. Diagnosis and Differential Diagnosis.

(1) Basis of diagnosis.

1) Acute and chronic severe liver diseases and extensive portal-systemic circulation.

2) Insanity, stupor and coma.

3) Flapping tremor.

4) Changes of EEG.

(2) Necessary examinations must be taken on patients with liver diseases who have mental symptom in order to rule out HE.

(3) Differentiate other kinds of coma such as infection of CNS, stroke, uremia, diabetic coma, hypoglycemia, hypnotic poisoning and brain-spinal tumor, etc.

6. Treatment.

(1) Get rid of the causes.

(2) Eliminate production and absorbance of toxicant in intestinal tract.

1) Forbid protein-taking and to take in glucose to supply energy.

2) Antibiotics.

3) Intestinal lavage and catharsis, suds can't be used for lavage.

4) Lactobacillus acidophilus.

5) Lactulose.

(3) Remove the toxicant.

1) Drug of low ammonia have a good effect on coma patients because of portal-systemic shunting or ammonia drug taking.

2) L-dopa It ever considered that great doses L-dopa could replenish normal neurotransmitters. But late research shows that L-dopa has no effect on HE.

3) Show new treatmental explorations, such as active carbon hemoperfusion, artificial liver, liver transplanation.

(4) Correct hydro-electrolytes and acid-base disorder especially hypokalemia.

(5) Others: Good nursing and symptomatic treatment are very important.

7. Prevention.

(1) Treat the primary liver diseases.

(2) Avoid the causes of HE.

(3) Find out the early stage of HE and treat it in time.

Chapter 8 Primary Carcinoma of Liver

1. Introduction.

(1) Definition of primary carcinoma of liver.

(2) Epidemiology of primary carcinoma of liver.

2. Etiology and Pathogenesis.

No definite pathogeny, perhaps relate to hepatic virus, Aflatoxin B1 and the other chemical carcinogenic substances.

3. Pathology.

(1) Gross form type.

(2) Cell form type.

(3) Matastasis.

4. Clinical Features.

(1) Major clinical features, the progressive hepatomegaly, pain in liver area, jaundice, etc.

(2) Signs of matastasis.

5. Complication.

Hepatic encephalopathy, upper gastrointestinal hemorrhage, rupture of carcerous nodules and secondary infection.

6. Assistant Examination.

(1) α-Fetal Protein Test: positive rate, importance of AFP dynamic exam in general investigation and clinical diagnosis.

(2) Other serologic test.

(3) Radionuclide study.

(4) Ultrasound examination.

(5) X-ray hepatoangiography.

(6) Liver biopsy.

(7) CT, MRI and DSA.

7. Diagnosis.

According to clinical features and assistant examination, we must pay great attention to early diagnosis and general investigation of liver carcinoma.

8. Differential diagnosis.

Differentiate among liver abcess and liver cirrosis, etc cautiously, and to eclucide the main points.

9. Treatment.

(1) Surgery.

(2) The others: microwave, laser.

(3) Interventional therapy.

Chapter 9 Ulcerative Colitis

1. Introduction.

2. Etiological factors and mechanisms.

(1) Autoimmunal reaction.

(2) Allergic reaction.

(3) Heredity.

(4) Infection.

(5) Nerve and mental factors.

3. Pathology.

(1) Lesion site.

(2) The course of initiation and development.

(3) Toxic megacolon.

4. Clinical symtoms.

(1) Intestinal symptoms: diarrhea; abdominal pain; Signs of abdomen.

(2) General symptoms: fever; thinness; anemia.

(3) Symptoms out of intestine: eyes; arthron; jaundice.

(4) Types: mild type; heavy type; fulminant type.

(5) Complication: Toxic megacolon; colorectal carcinomatous change; colorectal massive hemorrhage; acute penetration and obstruction.

5. Lab findings.

(1) Routine and culture of blood and stool.

(2) Erythrocyte sedimentation; serum total protein and Electrolyte.

(3) Colonoscope.

(4) X-ray findings of Barium clusis.

6. Diagnosis and differentiation diagnosis.

(1) Diagnosis.

(2) Differentiation diagnosis: Chronic bacillary dysentery; amebic dysentery; Crohn's disease; colonic cancer; radiation colitis; intestinal tuberculosis; hemic distomiasis; Ischemic colitis; IBS.

7. Treatment.

(1) General treament.

(2) Medicine: SASP; adrenal glucocorticoid,; other immunosuppressive agent.

(3) Surgery.

Chapter 10 Crohn'S Disease

1. Etiological factors and mechanisms.

(1) Infection.

(2) Immunal reaction.

(3) Heredity.

2. Pathology.

(1) Lesion site.

(2) The course of initiation and development.

3. Clinical symptoms.

(1) Intestinal symptoms: diarrhea; abdominal pain; fistula cannulas; signs of abdomen.

(2) Lesion around rectum and anus.

(3) General symptoms.

(4) Symptoms out of intestine: eyes; arthron; sclerosing cholangitis; sclerosing cholangitis; splenomegalia.

4. Complication.

Intestinal obstruction; abdominal abscess; malabsorption syndrome; occational acute penetration or massive hemorrhage.

5. Lab findings.

(1) Routine and culture of blood and stool; erythrocyte sedimentation; serum total protein Electrolyte and Lysozyme.

(2) Intestinal X-ray findings of Barium.

(3) Colonoscope.

6. Diagnosis and differentiation.

(1) Diagnosis: Standard of WHO.

(2) Differentiation: Intestinal tuberculosis; Ulcerative colitis; Acute appendicitis; Acute hemorrhagic cholecystitis; Cecal cancer; Hemic distomiasis; Chronic bacillary dysentery; Amebic dysentery and other infective Enteritis.

7. Treatment.

(1) General treatment.

(2) SASP.

(3) Adrenal glucocorticoid.

(3) Immunosuppressive agent: Azathioprine.

(4) Operation.

Part Five Nephrology

OBJECTIVES

Nephrology is part of internal medicine and clinical basic course. Because of the close correlation between the nephrology and other internal medicine, the students should not only grasp the basic theory prior to learn the general etiology and pathogenesis about urologic system, but also know the presentation, the laboratory findings, diagnosis and differentiation and treatment in order to be intern. The course

mainly consists of:

1. General Introduction.
2. Glomerular Disease.
(1) Primary Glomerular Disease.
1) Nephritic Syndrome.
2) Chronic Glomerular Disease.
3) IgA Nephropathy.
(2) Secondary Glomerular Disease.
3. Urinary Tract Infection.
4. Acute Renal Failure.
5. Chronic Renal Failure.

COURSE CONTENTS

Chapter 1 General Introduction

1. The main construction and function of kidney.
(1) Anatomy.
(2) Subtle structure of the kidney.
(3) Physical functions of the kidney.
(4) Special structure and endocrine function of the kidney.
2. Common clinical manifestations of urinary diseases.
(1) Edema.
(2) Hypertension.
(3) pain of renal region.
(4) abnormal urination.
3. Diagnosis of urinary system diseases.
(1) Requests of diagnosis: etiology, position, pathology, and function.
(2) Methods: including special examinations, image examination and kidney biopsy.
4. Principle of prevention and treatment.
(1) general treatment.
(2) medicine therapy.
(3) kidney replacement therapy.

Chapter 2 Primary Glomerular Disease

1. Nephrotic syndrome.
(1) Definition.
(2) Etiology and pathogenesis.
(3) Pathology:
1) the common pathologic types.

2) emphasis is the minimal change nephropathy.

(4) Clinical manifestations.

1) Heavy proteinuria.

2) Hypoalbuminemia.

3) high edema.

4) hyperlipidemia.

5) complications (infection, thrombosis, acute renal failure etc).

(5) Diagnosis and Differentiation.

1) Primary nephrotoc syndrome.

2) Secondary nephrotoc syndrome: systemic Lupus Erythematosus.

3) Diabetic Nephropathy.

4) Hepatitis B virus associated Nephritis.

5) Anaphylactoid Purpura.

6) Multiple myeloma, and amyloidosis.

(6) Treatment.

1) General treatment.

2) traditional Chinese herbal medicines.

3) Treatment of complications.

4) How to use the drugs (corticosteroid and cytotoxic drug).

(7) Prognosis Prognosis.

*Expansion: Emphasize the reasonable drug selection according to the pathologic types and evidence based medicine, introduce the new immune suppressive drugs, for example: Mycophenolate Mofetil, FK506.

2. Glomerulonephritis.

(1) Etiology and pathogenesis.

1) The immune reaction of the body to disease and the immune reaction in disease.

2) Non-immune and non-inflammation lesion, local factors reaction of kidney.

(2) The definition, classification, the pathological manifestations, diagnosis and treatment principle of the rapidly progressive glomerulonephritis.

(3) Pathological and clinical manifestation, diagnosis, differentiation and treatment principle of IgA Nephropathy.

(4) Definition, clinical manifestation, diagnosis, differentiation and treatment principle of the latent and the chronic glomerulonephritis.

(5) Prognosis and prevention of glomerulonephritis.

1) The prognosis is changeable.

2) The importance of the prevention of the etiology and inducement.

Chaper 3 Secondary Glomerular Disease

1. The common cause of disease of the secondary glomerular disease.

2. Pathogenesis, pathologic manifestations, clinical manifestations stages, diagnosis and differentiation, treatment principle of the diabetic nephropathy.

3. Clinical manifestation, pathologic traits and classifications, diagnosis standard and treatment principle of the lupus nephritis.

Chapter 4 Infection Of Urinary Tract

1. Definition.

Identify the direct infection of the bacteria, the definition of the upper and lower urinary tract infections.

2. Etiology and Pathogenesis.

Causative bacterium, infection approach, sensitive factors.

3. Pathology: Purulent inflammation.

4. Clinical Manifestation.

Different manifestations with different infective position and duration.

(1) Acute pyelonephritis: Systemic symptoms, symptoms of urinary system and urine changes.

(2) Chronic pyelonephritis: Disease form, clinical classification, the traits and reasons of the relapse and reinfection.

5. Complications.

6. Laboratory examinations.

Urinary routine, urinary bacterial examination, urinary cellular counts, renal function, intravenous pyelography, et al.

7. Diagnosis and Differentiation.

(1) The diagnosis evidence of acute pyelonephritis, the differentiation of other feverish diseases and acute gastrointestinal infection.

(2) The diagnosis evidence of chronic pyelonephritis, the differentiation of the renal tuberculosis, lower urinary tract infection and chronic glomerularnephritis.

8. Treatment.

Antibacterial treatment in acute period is most important, emphasize thorough treatment. Improvement of the general state is also important except antibacterial treatment in chronic period.

(1) Acute pyelonephritis: General treatment, the therapeutic ways of anti-bacteria medicine and the applied principles, the review after stopping drugs.

(2) Chronic pyenonephritis: General treatment, the significant meaning of the remove of the relative factors of the infection, the principle of the antibacterial selection, methods, dosage, duration, prevention of the reinfection, principle of the traditional Chinese medicine treatment.

9. Prognosis and prevention.

Good prognosis with thorough treatment in acute period, the measurement to remove the inducement and prevent acute or chronic infection and its importance.

Chapter 5 Acute Renal Failure

1. General.

The definition of the acute renal failure and the importance in clinic.

2. Etiology and Classification.

Briefly introduce the common etiology and classification of acute renal failure; identify the definition and pathogenesis of acute tubular necrosis (renal intoxication and

hypoxia).

3. Pathology.

Briefly introduce the pathologic manifestation of acute tubular necrosis.

4. Pathogenesis.

Emphasize the pathogenesis of acute tubular necrosis—vessel relaxation and contraction obstacle, glomerular filtration rate decrease, tubular fluid reflux and tubular block, etc.

5. Manifestation.

The beginning and duration of ATN, the trait of the oliguria and polyuria, complications (emphasis is Hyperkalemia) and chemical test.

6. Diagnosis and Differentiation:

(1) Diagnosis basis of acute renal failure and acute tubular necrosis.

(2) Steps and methods of differentiation oliguria (differentiation of acute renal failure).

(3) Differentiation of acute and chronic renal failure.

7. Prevention: Emphasize the prevention principle; rectify reversible factors, treatment of fluid and electrolyte disorders and acid-base disorders (emphasis is Hyperkalemia), dietary treatment and controlling infection. Know the sign of emergent dialysis and various new technology of replacement therapy.

Chapter 6 Chronic Renal Failure

1. Definition of chronic renal failure, common etiology and incidence.

2. Pathogenesis:

(1) "survival nephron" theory.

(2) the "trade-off hypothesis" theory.

(3) the "high pressure, high perfusion, high filtration" theory.

3. Clinical manifestation.

(1) The symptoms and endocrine and metabolic disorders by different systems.

(2) The progress of the renal failure.

*Expansion: K-DOQI new stage.

4. Diagnosis and Differentiation.

(1) The diagnostic basis of uremia, identification of common etiology and inducement.

(2) Differentiation with the acute renal failure.

5. Treatment.

(1) Principle and method of dietary therapy (hypo-protein diet).

(2) Treat the primary diseases and rectify the induced factors.

(3) Expectant treatment. Particularly control the blood pressure, rectify anemia, rectify the fluid and electrolyte disorders and the acid-base disorders, and emphasize the importance of the renal function protection.

(4) Blood purification: Hemodialysis, peritoneal dialysis and renal transplantation.

Part Six Hematology

OBJECTIVE

Hematology is an important part of internal medicine. At the end of the course the student should be familiar with the genesis and development of blood cells and be able to master the presentation of the laboratory findings, diagnosis, differentiation and treatment about common hematological diseases and know the latest developments and trends of hematology.

COURSE CONTENTS

Chapter 1 General Introduction

1. General Aspects.

(1) Genesis, differentiation, maturation and release of blood cell and hematopoietic system.

(2) The clinical classifications of hematological diseases, including the white blood cell diseases, the red blood cell diseases, hemorrhagic diseases and so on.

2. The diagnostic method of hematological diseases:

(1) History.

(2) Physical Examination.

(3) The laboratory findings.

3. Therapeutic principle of hematological diseases.

(1) Anemia:

(2) Leukemia and Lymphoma:

(3) Hemorrhagic diseases.

Chapter 2 Anemia: general Aspects

1. General Aspects: normal value and definition.

2. Classification: microcytic, normocytic and macrocytic anemia.

3. Clinical features.

4. Diagnosis.

(1) Diagnostic procedure.

(2) Diagnostic method.

1) History.

2) Physical Examination.
3) Blood Examination.
4) Bone marrow Examination.
5) Special test.
6) Other test.
5. Therapeutic principles.
(1) Etiological treatment.
(2) Symptomatic treatment.

Chapter 3 Iron Deficiency Anemia (IDA)

1. General Aspects: definition of IDA and morphological character of RBC.
2. Ferric metabolisms: briefly introduce the dissemination, absorption, utility, storage and excretion of iron.
3. Etiology and pathogenesis: malabsorption, iron loss, increase of demand.
4. Clinical features: the special change of esophagus, nail and tongue.
5. The laboratory findings: SF, TIBC, IS, ferroprotein and bone marrow iron stain (golden criteria for the diagnosis of IDA).
6. Diagnosis and differential diagnosis.
7. Treatments: oral and intravenous iron. The change regulation of hemoglobin and reticular cell after iron supplement.
8. Precaution.
9. Prognosis: depends on the protopathy.

Chapter 4 Megaloblastic Anemia

SELF-STUDY
1. The definition of Megaloblastic Anemia.
2. Etiology and pathogenesis.
3. Clinical features, diagnosis and treatment.

Chapter 5 Aplastic Anemia

1. General Aspects: definition and character of Aplastic Anemia.
2. Etiology: primary and secondary.
3. Pathogenesis: worm, seed and soil theories.
4. Pathology: pathological change of spleen and bone marrow.
5. Clinical Features: clinical character; difference between acute AA and chronic AA.
6. Laboratory finding.
7. Diagnosis and differential diagnosis.
8. Therapeutic principle:
Supportive therapy: blood transfusion, anti-infection.
Immunosuppressive and consecutive therapy: ATG, ALG, CSA.
Hematopoiesis stimulating therapy: androgen, G-CSF, GM-CSF, EPO and TPO.
9. Precaution.
10. Prognosis.

Chapter 6 Hemolytic Anemia

1. General Aspects: definition.
2. Classification.
3. Pathogenesis.
4. Clinical Features: clinical character; difference between acute type and chronic type.
5. Laboratory finding: the change of reticular cells, bilirubin, urine and bone marrow.
6. Diagnosis.
7. Differential diagnosis.
8. Treatment.
9. Classification, Clinical Features, Laboratory findings, Diagnosis and Treatment of auto-immunic hemolytic anemia.

Chapter 7 Leukopenia, Neutropenia and Agranulocytosis

Self-study Contents

1. General Aspects: definition.
2. Etiology and pathogenesis.
3. Clinical features.
4. Laboratory findings.
5. Diagnosis and Differential diagnosis.
6. Treatment.
7. Precaution.

Chapter 8 Myelodysplastic Syndromes (MDS)

1. General Aspects: definition.
2. Etiology and Pathogenesis.
3. Clinical Features: clinical character.
4. Laboratory finding.
5. Diagnosis and Differential diagnosis.
6. Treatment.
7. FAB and WHO's Classification.

Chapter 9 Leukemia

1. Introduction.
(1) Definition.
(2) Classification.
(3) Epidemiology: incidence and common subtypes.
(4) Etiology and Pathogenesis.
2. Acute Leukemia.
(1) Classification: FAB classification, MIC type.
(2) Clinical Features: infection, hemorrhage, anemia and organ infiltration.
(3) Laboratory findings: blast cell.
(4) Diagnosis: bone marrow aspiration and biopsy.
(5) Differential diagnosis: secondary leukocytosis.

(6) Treatment: chemotherapy regimens of AML and ALL, bone marrow transplantation, supportive therapy, intrathecal injection.

(7) Prognosis.

3. Chronic Myelogenous Leukemia.

(1) Clinical Features: splenomegaly.

(2) Laboratory findings: the differential count of white blood cell in peripheral blood and bone marrow smear.

(3) Diagnosis: NAP, Ph chromosome and bcr/abl fusion gene.

(4) Differential diagnosis.

(5) Course Stage: chronic phase, accelerating phase and blast phase.

(6) Treatment: tyrosine kinase inhibiter (imatinib).

4. Chronic Lymphocytic Leukemia.

(1) Clinlcal Features: no symptom in early stage. Hemolysis sometimes.

(2) Laboratory findings: the absolute count and percentage of lymphocytes, mostly B. Cell type, $CD23^{+}$

(3) Diagnosis.

(4) Treatment: according to Rai staging system, for stage 0 and I, no treatment.

(5) Course and Prognosis: most patients die of infection.

Chapter 10 Lymphoma

1. General Aspects: definition and epidemiology.

2. Etiology and Pathogenesis: virus infection, immunity deficiency.

3. Pathology and Classification: HL and NHL, Ann-Arbor staging system.

4. Clinical Features: clinical character.

5. Laboratory finding.

6. Diagnosis and Differential diagnosis: lymphoid tissue biopsy is still the golden criteria for the diagnosis of lymphoma.

7. Treatment: chemotherapy regimens (CHOP), stem cell transplantation.

8. Prognosis: highly heterogeneous, international prognostic index (IPI).

Chapter 11 Plasma Cell Dyscrasia

1. General Aspects: definition and epidemiology.

2. Etiology and Pathogenesis.

3. Clinical Features: CRAB (calciumemia, renal failure, anemia and bone diseases).

4. Laboratory finding: monoclonal protein, β2-MG, free light chain and albumin. X-ray of bone: osteolysis and bone fracture.

5. Diagnosis and Differential diagnosis: plasma cell percentage in bone marrow.

6. Treatment: chemotherapy regimens and bone marrow transplantation.

7. Prognosis.

Chapter 12 Myeloproliferative Disease

Self-study

1. Classification.

2. Clinical features and Complication.

3. Laboratory findings.
4. Diagnoses and Treatment.
5. Precaution.

Chapter 13 Hemorrhagic Disease

1. General Aspects: definition, hemorrhagic character and classification of hemorrhagic disease.
2. Normal hemostasis and clotting mechanism.
3. Diagnosis.
(1) History.
(2) Physical Examination.
(3) Laboratory findings.
4. Therapeutic principle.

Chapter 14 Idiopathic Thrombocytopenic Purpura (ITP)

1. General Aspects: definition and normal platelet count.
2. Etiology and Pathogenesis.
3. Clinical Features: clinical character.
4. Laboratory finding.
5. Diagnosis and Differential diagnosis.
6. Treatments: glucocorticoid, splenectomy, plasma exchange and high-dose immunoglobulin. For refractory ITP: CTX, VCR or CD20 monoclonal antibody.

Chapter 15 Hematopoietic Stem Cell Transplantation

SELF-STUDY
1. Definition, classification and indication of Hematopoietic Stem Cell Transplantation.
2. Zygosity and selection donor.
3. Objective and program of preconditioning of Hematopoietic Stem Cell Transplantation.
4. Complication and Treatment of Hematopoietic Stem Cell Transplantation.

Part Seven Endocrinology

OBJECTIVE

Endocrinology is an important system of Internal Medicine. The aims of Endocrinology are to learn the principles and methods for the diagnosis and management, such as hyperthyroidism, hypothyroidism, diabetes mellitus, primary chronic hypercortisonism and hypocortisonism. There are 16 teaching hours. Teaching methods include lecture and clerkship. There are 12 lecture hours. In lecture hours

students learn diagnosis and management of common endocrinology diseases such as hyperthyroidism, hypothyroidism, diabetes mellitus, primary chronic hypercortisonism and hypocortisonism. There are 4 clerkship hours. In clerkship hours students learn the following clinical skills, include taking the history of endocrinology, physical examination and writing the history. Students also learn to management the following endocrinology diseases, such as hyperthyroidism, hypothyroidism, diabetes mellitus, primary chronic hypercortisonism and hypocortisonism.

COURSE CONTENTS

Chapter 1 General Introduction

1. Explaining the concept of Physical Diagnosis and its clinical significance.

2. Explaining the contents of Physical Diagnosis and its clinical types, Emphasize the combination of theory and practice.

3. Presenting the purpose and requirements of Physical Diagnosis; The purpose and requirements including: Mastering the mechanisms or pathogenesis of common symptoms and signs; Inquiring about the patient's history, doing a complete physical examination and writing medical record.

4. Introducing the protocol of making diagnosis.

5. Introducing the history of Diagnosis and novel progress.

Chapter 2 Thyroid Disease

1. Hyperthyroidism.

(1) Definition and clinical characters, classification by etiology, emphasize thyroid hyperthyroidism, etiology and pathogenesis of Graves disease, introduce the nearly viewpoints of how does the autoimmune affect the hyperthyroidism.

(2) Pathology: briefly introduce the changes of pathology.

(3) Manifestation: connect with the physiological action of thyroxine, elucidate the effect of high thyroxine to the hypothalamus-pituitary-target gland and other systems. Emphasize the hyperthyroidism syndrome and the characters of examination to the goiter of Graves'disease.

(4) Specific clinical manifestation: emphasize the hyperthyroid heart disease, hyperthyroidism crisis, apathetic hyperthyroidism, T_3 hyperthyroidism, hyperthyroidism in gestation, myxedema of pretibia and Graves'ophthalmopathy with norm thyroid function.

(5) Lab exam: thyroid I^{131} uptake, serum FT_3, FT_4 (or TT_3, TT_4) and TSH, T_3

ECT, ultrasonography and FNA.

(6) Diagnosis and differential diagnosis: emphasize the value of illness history and signs. The diagnosis of atypical and specific type must depend on the lab examination. Differentiate with simple goiter, neurosis, heart disease, pulmonary tuberculosis and

carcinoma.

(7) Therapy: commonly treatment, rest, nutrition, drugs, include pharmacological action, indication, dosage and duration, side effect, the problem of stop drugs and recrudescence. Briefly introduce the indication and point's attention of radiology and operation and the treatment to the hyperthyroidism crisis.

2. Hypothyroidism.

(1) Summarize the definition and clinical character, classification by etiology.

(2) Pathology: briefly introduce the pathological changes of thyroid.

(3) Manifestation: clinical character of hypothyroidism of adult type and cretinism.

(4) Lab exam: serum FT_3, FT_4 (or TT_3, TT_4) TSH, TRH stimulation test.

(5) Diagnosis and differential diagnosis: manifestation, lab exam and location. Differentiate with pituitary tumour, nephropathy syndrome and coronary heart disease. Diagnosis of Low T3 syndrome.

(6) Treatment: common treatment, replacement therapy and treatment of coma of myxedema.

Chapter 3 Diabetes Mellitus

1. Summarize: briefly introduce the basic definition. DM is a group clinical syndrome, but nota simple disease. Emphasize how to differentiate the type 1 DM with type 2 DM.

2. Etiology and pathogenesis: is still unknown. Gene and environment maybe the main factors lead to DM. Introduce the theory of insulin resistance.

3. Pathological physiology: the turbulence of glucose and the progression of hypoinsulinemia.

4. Manifestation: emphasize metabolism syndrome, the specific clinical characters of type 1 and 2 DM, chronic complications include heart-blood vessel, kidney, eye and nervous system.

5. Lab exam: briefly introduce the clinical signification of glucose in urine, blood glucose andOGTT. The value of OGTT to classification of DM. Introduce the signification of HbA1c.

6. Diagnosis and differential diagnosis: diagnosis depends on family history, present history, manifestation and lab exam. Differentiate with secondary DM and renal glucosuria.

7. Treatment.

(1) General treatment: Patients learn the basic information of DM and self-management.

(2) Oral hypoglycemic agents and insulin: elucidate the pharmacological action, indication, dosage, means, drug-resistance and side effect of sulfonylurea and biguanide.

8. Diabetes ketoacidosis.

(1) Predisposing factors, pathological and physiological characters, introduce the turbulence of glucose. Emphasize the pathological physiology of the turbulence of water, salt and electrolyte.

(2) Introduce the manifestation. Emphasize the differentiation with hyperosmotic

coma, hypoglycemic coma and diabetic ketoacidosis.

(3) Principle of using insulin, the means to correct the turbulence of water-electrolyte and acid-base balance.

Chapter 4 Hypercortisonism

1. Master the etiolology and pathogenesis of hypercortisonism, understand the difference of ACTH-dependent and ACTH-independent hypercortisonism.

2. Master the manifestation and the major lab examination of hypercortisonism.

3. Understand the principles of the treatment for different hypercortisonism.

Chapter 5 Primary Chronic Hypocortisonism

1. Understand the histology and physiology of adrenal gland, the function of cortisol and the regulation of pituitary-adrenal axis.

2. Be familiar with the etiology of hypocortisonism, which include primary and secondary hypocortisonism.

3. Master the clinical characters of hypocortisonism and major laboratory examination.

4. Be familiar with the principle of the treatment.

Part Eight Rheumatology

OBJECTIVES

1. The conception of the modern conception and the classification of the rheumatic disease.

2. The clinical manifestation and the principle of diagnosis of the common rheumatic disease.

3. The relationship of auto-antibodies to rheumatic diseases.

4. The principle of the management of the common rheumatic disease. The common medicines in treating the rheumatic disease.

COURSE CONTENTS

Chapter 1 Rheumatoid Arthritis

1. The conception of RA; the epidemiologic feature; the public health problem or social-economic burden produced by rheumatoid arthritis (RA).

2. The pathologic changes basically is synovitis.

3. The potential etiology of RA the pathologic change is unknown, but environmental, smoking and viral infection may play role in RA.

4. The clinical manifestation of RA include:

(1) Systemic symptoms: hypodynamia, low-grade fever, anorexia, weight-loss.

(2) Joint Involvement; dysfunction; deformities.

(3) Extra-articular complications of RA: rheumatoid nodule, vasculitis, and multi-organ involvement.

5. Lab test of RA include: blood cell count, ESR, CRP, RF, anti-CCP, ANA, CIC and synovial fluid examination; X-ray teat of joints; Biopsy of rheumatoid nodule; thoratic CT scan.

6. Classification criteria of RA: 1987 revised ACR Criteria for classification of RA and 2012 ACR/EULAR classification criteria for RA.

7. Differential diagnosis with Ankylosing Spondylitis; Psoriatic Arthritis, SLE, *et al.*

8. Treatment for all patients should be based on a disease activity target—either remission or low disease activity.

9. Drug therapy include NSAIDs, glucocorticoids, and DMARDs. MTX is the cornerstone of RA treatment.

10. Bio-DMARDs and other target therapy.

11. Joint replacement; synovectomy in late stage of RA.

Chapter 2 Systemic Lupus Erythematosus (SLE)

1. SLE is an auto-immune disease with multiple organ involvement, and varies auto-antibodies patterns in the course of the disease.

2. Etiology and pathogenesis: the etiology of SLE is unknown, maybe associated to genetic factors, environmental factors, and gonadal hormone, *et al.* The SLE among the population, the age and gender features.

3. Pathogenesis of SLE: SLE associated to multiple factors, including hereditary, environmental; abnormal immune responses, including T cells and B cells, immune tolerance, and inadequate clearing of immune compleses.

4. Pathology: the pathologic classification for LN by WHO.

5. Clinical manifestations: SLE is a disease with a complex set of abnormalities and follows a relapsing and remitting course. The common symptom includes fever, skin rash, musculoskeletal manifestation, hydrymenitis, nephropathy, *et al.*

6. Lab test: blood cell count, urine screen, and auto-antibodies. Including the immunoglobulin, CIC, complements, ANA (anti-dsDNA, anti-ENAs, including Sm, SSA, SSB, ulRNP, rRNP, Jo-l, Scl-70).

7. Kidney biopsy in SLE.

8. Diagnosis and differential diagnosis: the criteria by ARA in 1982. How to define the disease activity. The differential diagnosis includes MCTD, chronic nephritis.

9. Management of SLE: the principles, and the strategies of drug therapy.

10. Prognosis: factors involve in estimating the prognosis.

Chapter 3 Sjögren Syndrome (SS)

1. The etiology, pathogenesis and pathologic feature of SS.

2. Clinical manifestation of SS: dry eye, dry mouth, and systemic manifestation.

3. Lab test: hypergammaglobulinemia, auto-antibodies, Rose Bengalscore, biopsy of minor salivary gland.

4. Diagnosis (including the new classification criteria in 2012) and differential diagnosis.

5. Treatment and prognosis: treatment of xerosis. Secretory stimulation. Treatment of systemic disease.

Chapter 4 Spondyloarthropathies (SPAS) and Ankylosing Spondylitis (AS)

1. The conception of spondyloarthropathies, is a group of HLA-B27-associatied chronic inflammatory disease of unknown etiology. The affected joint includes the sacroiliac joints at early stages and axial skeleton at later stages of the disease. This disease includes ankylosing spondylitis, Reiter's syndrome, reactive arthritis, psoriatic arthritis, arthritis with inflammatory bowel disease, undifferentiated spondyloarthropathy.

2. Clinical manifestation: RF negative, with or without sacroiliitis, peripheral arthritis, et al. The SpAs are linked by HLA-B27, and ankylosing spondylitis was the first disease to be linked with an HLA gene. The manifestation frequently overlapped with each other among SpAs.

3. Ankylosing spondylitis is the model of this group of disorder.

4. Chronic low back pain more than 3 months, morning stiffness more than 30 minutes. The symptom tenderness of the sacroiliac joints (elicited by either direct pressure or indirect compression) or a limited range of spine motion may present. At the advanced stage, the spine may result in a stooped posture. The extra-articular symptom includes uveitis, conjunctivitis, and pulmonary interstitial fibrosis.

5. Imaging studies find sacroiiiitis are most helpful in establishing a diagnosis; in advanced stages "bamboo spine" may be found.

6. The criteria by ARA (1984) are the most widely used criteria by rheumatologists.

7. The Classification criteria for ASAS mid-axis SpA is helpful for the diagnosis of early ankylosing spondylitis. This criteria emphasize the significance of B27 and sacroiliac MRI.

8. The evaluation methodology of ankylosing spondylitis including BASFI and BASDAI.

9. Treatment of AS: The first line therapy are NSAIDs for axial arthritis. DMARDs may helpful for peripheral arthritis. and bio-DMARDs should be used among those has hip joint involvement or irireitis. Glucocorticoid should be avoid in order to relieve pain. The patients should be encouraged to do some exercises.

OPERATIVE SURGERY

外科手术学

Chief Editors（主编）

Gao Zhigang（高志刚） Tianjin Medical University（天津医科大学）
Ling Guanglie（凌光烈） China Medical University（中国医科大学）
Ni Hong（倪虹） Nankai University（南开大学）

Deputy Chief Editors（副主编）

Ma Yuemei（马跃美） Tianjin Medical University（天津医科大学）
Xing Chengzhong（邢承忠） China Medical University（中国医科大学）
Shi Nianke（史念珂） Tianjin Medical University（天津医科大学）
Liu Shaokui（刘少逵） Tianjin University of Traditional Chinese Medicine（天津中医药大学）

Editors（编者）（按姓氏拼音排序）

Chen Aixia（陈爱霞） Tianjin Medical University（天津医科大学）
Gao Zhigang（高志刚） Tianjin Medical University（天津医科大学）
Ling Guanglie（凌光烈） China Medical University（中国医科大学）
Liu Shaokui（刘少逵） Tianjin University of Traditional Chinese Medicine（天津中医药大学）
Ma Xiacjuan（马晓娟） Tianjin Medical University（天津医科大学）
Ma Yuemei（马跃美） Tianjin Medical University（天津医科大学）
Ni Hong（倪虹） Nankai University（南开大学）
Shi Nianke（史念珂） Tianjin Medical University（天津医科大学）
Xing Chengzhong（邢承忠） China Medical University（中国医科大学）
Xing Jinglong（邢敬龙） Tianjin Medical University（天津医科大学）

Course Description

This is the syllabus for Operative Surgery. Operative Surgery is a basic course of Surgery; its objective is setting up a bridge between basic medicine and clinical medicine. Through which the students should establish correct aseptic concept and master aseptic technique, train their elementary clinical abilities and master basic operative techniques, grasp the basic steps of common surgical operations, and review the knowledge of anatomy mentioned in common operations.

There are 36 class hours altogether, including 11 class hours for theory course, 25 for experimental course.

Objectives

KNOWLEDGE

At the end of the course the students will be able to:

1. Be acquainted with the classifications of surgical operations and incisions, and with the statistics of wound healing.

2. Master the main meaning of aseptic technique, know well the source of contamination and the method to deal with, describe the common methods for operative necessities.

3. Master the basic operative technique.

4. Comprehend the main procedure and attentions of several operations: tracheotomy, debridement, appendectomy and so on.

SKILLS

At the end of the course the students will be able to:

1. Know about the shapes and names of basic operative instruments; know about the types of correct Knots. Be skillful in the holding method of common instruments and be skilled in the method of one hand tie and instrument tie.

2. Master the basic operative technique: incision, suture, dissection, hemostasis, cut and remove sutures.

3. Train the aseptic technique and operative technique in several operations: tracheotomy, debridement, appendectomy and so on.

Teaching and Learning Methods

THEORY

Lectures and powerpoint are commonly used during all teaching courses. At the beginning or the end of every class, we will watch a segment form of teaching videos, including the main content of the class in order to enhance the comprehension of the

students. If it is an operation, it will show the process for both animals and human beings.

PRACTICAL

Practical training is to make the students master the basic methods and techniques, and exercise through animal operations and skill experiments. During the class, not only will the teacher impart, but also encourage the students to ask questions and share relevant experience for the benefits of the class.

Recommended Textbooks

Charles Rob, Rodney Smith. 1998. Atlas of General Surgery [M]. 2nd ed. New York: Hodder Arnold.

Courtney M Townsend, Tr M D. 2016. Sabiston Textbook of Surgery [M]. 20th ed. Philadelphia: Elsevier.

Huang Zhiqiang (黄志强). 1996. Textbook of Operative Surgery [M]. Beijing: People's Medical Publishing House.

Ma Yuemei (马跃美). 2011. The Basic of Operative Surgery [M]. 2nd ed. Beijing: People's Medical Publishing House.

Wu Zaide (吴在德). 2008. Textbook of Surgery [M]. 7th ed. Beijing: People's Medical Publishing House.

Schedule Table

Chapter	Contents	Hours
1	General introduction of Operative Surgery	2
P1	Classification of Surgical operation, incision and healing	2
P2	Common operative instruments	2
2	Technique of asepsis	2
3	Preparation of operation	1
P3	Scrubbing, disinfection and drapping	3
4	Basic technique of surgery	1
P4	Tying knots	3
5	Incision and suture	1
P5	Exercise of operative techinque	3
6	Anterior abdominal wall and abdominal incision	1
P6	Laparotomy	3
7	Wound healing and treatment of open Trauma	1

Continued

Chapter	Content	Hours
P7	Debridement	3
8	Tracheotomy and femoral triangle	1
P8	Tracheotomy and exposure of femoral artery	3
9	Knowledge of Appendix and appendectomy	1
P9	Appendectomy	3
	Total	36

Course Contents

THEORY

Chapter 1 General Introduction of Operative Surgery

1. The concepts of Operative Surgery, the developments of Surgery and the relationship between Operative Surgery and Surgery.

2. The method to learn operative surgery.

Chapter 2 Technique of Asepsis

1. The importance of the techniques of asepsis.

2. The concepts of the aseptic opinion and technique of asepsis.

3. The concepts of antisepsis and asepsis.

4. The source of bacteria in the operative fields and the method of prevention.

5. The methods and attention points of sterilization and antisepsis for operative necessities.

Chapter 3 Preparation of operation

1. The general preparation for the operative staff.

2. The general preparation for the patient.

3. The aseptic principle during operation.

Chapter 4 Basic Technique of Surgery

1. The main content of the basic operative technique: incision, dissection, hemostasis, tying knots, suture, drainage, cutting and removing sutures.

2. The importance and effectors of the exposure of the operative site.

3. The method of hemostasis by electric coagulation, packing, pressure, tourniquet, local medicine and so on.

4. The method of cutting suture and removing suture.

5. The classification of knot.

6. The classification and application of drainage.

Chapter 5 Incision and suture

1. The principle of incision.
2. How to locate the suitable position of incision.
3. The methods and steps of different incisions.
4. The principle and requirement of suture.
5. The methods of different sutures: simple closure, inverting suture and everting suture.

Chapter 6 Anterior abdominal wall and abdominal incision

1. The anatomy of anterior abdominal wall.
2. The blood supply, nerve control, and lymphocinesia of the anterior abdominal wall.
3. The common typical incision: vertical incision, oblique incision, and transverse incision.
4. The common atypical incision.

Chapter 7 Wound healing and treatment of open Trauma

1. The wound healing and its affect factor.
2. The classification of wound and the principle of treatment according to different wound.
3. The general measures of trauma.
4. The concepts of debridement.
5. The concepts of primary suture, delayed suture, and secondary suture.

Chapter 8 Tracheotomy and femoral triangle

1. The structure of the anterior cervix and trachea.
2. The classification and attention points of tracheotomy.
3. The structure of femoral triangle and the relationship of the femoral artery, femoral vein and femoral nerves.

Chapter 9 Knowledge of Appendix and Appedectomy

1. The anatomic structure and position of appendix.
2. McBurney's incision.
3. The classification of appendectomy.

PRACTICAL

Chapter 1 Classification of Surgical Operations, Incision and Healing

1. The classification of surgical operations:

(1) According to the degree of the emergency of the operations: first-aid operation, emergency operation, limited time operation and elective operation;

(2) According to the remote results and character of the operations: palliative operation and radical operation;

(3) According to the stages of the operations: one-stage operation, two-stage operation and multi-stage operation;

(4) According to the degree of contamination of operative fields: aseptic operation, contaminative operation and infective operation.

2. The classification of operative incisions: type Ⅰ incision, type Ⅱ incision, and type Ⅲ incision.

3. The degree of wound healing: A grade, B grade and C grade.

4. The record of healing of the operative incision.

5. The format of the operative record.

Chapter 2 Common Operative Instruments

1. To recognize common operative instruments, such as scalpel, scissors, thumb forceps, hemostatic forceps, Allis forceps, towel clip, sponge-holding forceps, needle holder, retractors, needle and suture materials.

2. To practice to use above instruments.

Chapter 3 Scrubbing, disinfection and draping

1. To learn the steps and attention points of scrubbing with iodophor and exercise.

2. To exercise gowning and gloving.

3. To exercise disinfection of the local skin, draping the patient by four aseptic towels and a full sheet.

4. The position exchanging for operative staffs during the operation.

Chapter 4 Tying knots

1. To understand square knots, triple knots, surgical knots and slipper knots, etc.

2. To learn and exercise the methods of ligation: One hand tie, two hand tie and instrument tie.

Chapter 5 Exercise of operative technique

1. To exercise incision on model.

2. To exercise different suture methods such as simple closure, inverting suture and everting suture on model.

Chapter 6 Laparotomy

1. The technique of incision according of the different layers of abdominal wall.

2. The technique of suture according to different tissues.

3. To exercise operative technique such as incision, suture, hemostasis by ligation, cutting and removing sutures.

Chapter 7 Debridement

1. The manipulation of debridement.

2. The combination of basic techniques, aseptic technique during debridement. Using of suture technique according to different tissues.

Chapter 8 Tracheotomy and Exposure of the Femoral Artery

1. The procedure of tracheotomy.

2. The exposure of the femoral artery.

3. The combination of basic techniques during operation, especially for the technique of dissection.

Chapter 9 Appendectomy

1. The manipulation of appendectomy.

2. The combination of basic operative techniques, especially for the techniques of purse-sting suture.

3. Aseptic technique during appendectomy.

SURGERY
外 科 学

Chief Editors（主编）
Liu Yi（刘弋） Anhui Medical University（安徽医科大学）
Qi Feng（戚峰） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）
Xu Yunqiang（徐云强） Tianjin Medical University（天津医科大学）
Zhao Hongchuan（赵红川） Anhui Medical University（安徽医科大学）

Editors（编者）（按姓氏拼音排序）
Chen Xulin（陈旭林） Anhui Medical University（安徽医科大学）
Fan Song（樊松） Anhui Medical University（安徽医科大学）
Liu Yi（刘弋） Anhui Medical University（安徽医科大学）
Liu Yimei（刘毅梅） Tianjin Medical University（天津医科大学）
Qi Feng（戚峰） Tianjin Medical University（天津医科大学）
Wang Dong（王东） Tianjin Medical University（天津医科大学）
Xu Yunqiang（徐云强） Tianjin Medical University（天津医科大学）
Zhang Zhigong（张志功） Anhui Medical University（安徽医科大学）
Zhao Hongchuan（赵红川） Anhui Medical University（安徽医科大学）

Course Description

Surgery is a clinical course with strong practicability, which includes different sections: basic surgery and various special surgeries, such as general surgery, neurosurgery, cardiothoracic surgery, urinary surgery, and orthopedics. Surgery also refers to a number of diseases, such as trauma, infection, neoplasm, malformation, and some disorders on obstruction, stricture or dilatation of organs, dysfunction of viscera, abnormal blood supply and lithiasis. Based on basic medical theory and knowledge, the purpose of this course focuses on diagnosis, differential diagnosis and treatment of diseases, especially the indications and contra-indications for surgical treatment and the management of postoperative complications. It requires students to grasp significant amount of knowledge of related subjects, to be familiar with the concept of asepsis and basic surgical skills, and to build good medical ethics.

Basic Surgery

OBJECTIVE

Knowledge

Basic surgery is a key course for medical students. The aims of this course are to teach students the basic concepts of asepsis and the principles of aseptic techniques, the basic theories of surgical infections, trauma, neoplasm, balance of fluid, electrolytes and acid-base, surgical nutrition, shock and multiple organ dysfunction, as well as their clinical applications. It also introduces student to the practice of surgical intensive care, organ transplantation, and laparoscopy, as well as building the basis for autonomic learning of surgery.

TEACHING AND LEARNING METHODS

Lecture, autonomic learning, clinical practical.

RECOMMENDED REFERENCE BOOKS

Burke KM, P Lemone, E Mohen-Brown. 2014. Understanding Medical Surgical Nursing [M]. 6th ed. Upper Saddle River, NJ: Prentice Hall.

Courtney M Townsend, R Daniel Beauchamp, B Mark Evers. 2016. Textbook of Surgery: The Biological Basis of Modern Surgical Practice [M]. 20th ed. Philadephia: Elsevier Medicine.

Courtney M Townsend, R Daniel Beauchamp, B Mark Evers. 2012. Sabiston Textbook of Surgery [M].19th ed. Philadephia: WB Saunders Company.

F Charles Brunicardi. 2010. Schwartz's Principles of Surgery [M]. 10th ed. New York: The McGraw-Hill Companies, Inc.

Ian B Matin. 2014. Current Diagnosis and Treatment [M]. New York: McGraw-Hill/ Appleton & Lange.

John L Rombeau, Rolando H Rolandelli. 2000. Clinical Nutrition: Parenteral Nutrition [M] . 3rd ed. Philadelphia: WB Saunders Company.

Norman Williams, P Ronan O'Connell. 2013. Bailey & Love's Short Practice of Surgery [M]. 27th ed. New York: CRC Press of Taylor & Francis Group.

Xuehong Wan (万学红). 2017. Clinical Diagnostics [M]. Bei Jing: People's Health Press.

SCHEDULE TABLE

NO.	Course Contents	Hours of Lecture	Hours of Self-study	Hours of Clinical Practical
1	Introduction to Surgery	2		
2	Asepsis		2	3
3	Fluid Electrolyte and Acid-base Disorders	4		1
5	Surgical Shock	2		1
7	Surgical Intensive Care Unit		2	
8	Multi-Organ Dysfunction Syndrome	2		1
9	Perioperative management		2	3
10	Surgical Nutrition	2		
11	Surgical Infections	2		
12	Trauma	2		
13	Burns, Frostbite and Insect Bites	3		3
14	Neoplasms	2		
15	Organ Transplantation	2		
16	Minimally Invasive Surgery	2		
	Total	25	6	12

COURSE CONTENTS

Theory

Chapter 1 Introduction to Surgery

Aims and Requirements

1. Understand developing history, category of surgery, and relationship with other subjects.

2. Establish correct outlook for the study of surgery, develop clinical thinking and study methods.

Teaching hours

Lecture: 1 class hour.

Course contents

Definition and brief developing history of surgery; Category of surgery and relationship with other subjects; How to study surgery and pay attention to the questions; Introduction to new achievements and prospects for surgery.

Practical

No.

Chapter 2 Asepsis

Aims and Requirements

1. Understand the principles of asepsis, and definite the concept and contents of asepsis.

2. Grasp common methods of asepsis and antibiosis.

3. Be familiar with the characteristics of common aseptic drugs and disinfectants.

4. Be familiar with basic concepts and employment of aseptic agents.

Teaching hours

Self-study: 2 class hours.

Course contents

Contents and definition of asepsis and antibiosis; common methods of asepsis and character of aseptic drugs; common methods of disinfection and various characters of disinfectants; concept and operating principles of asepsis.

Practical

Preparation before operation: including scrub, wear gloves and gown, skin disinfection, sterile drape of the operative site; Asepsis in theater.

Time required: 3 class hours.

Chapter 3 Fluid Electrolyte and Acid-base Disorders

Aims and Requirements

1. Grasp principles of maintaining normal water and electrolyte metabolism and acid-base balance, and their clinical application.

2. Be familiar with the pathophysiology, clinical character and diagnosis of different fluid electrolyte imbalances and acid-base imbalance in surgical patients.

3. Grasp principles of treatment and methods of correction for fluid electrolyte imbalance and acid-base imbalance in surgical patients.

Teaching hours

Lecture: 4 class hours.

Course contents

1. Normal requirement and maintenance of fluid electrolyte metabolism and acid-base balance.

2. Pathophysiology, clinical presentation, diagnosis and prevention of hypertonic, hypotonic and isotonic conditions. Etiolgy, pathophysiology, clinical presentation, diagnosis and treatment of hypokalemia and hyperkalemia.

3. Pathophysiology, clinical presentation, diagnosis and treatment of metabolic acidosis and metabolic alkalosis.

4. Principles and procedures of preventing the disorders of fluid electrolyte metabolism and acid-base balance, problems that might arise during treatment.

Practical

Making medical order of intravenous liquid transfusion for fasting patient.

Time required: 1 class hour.

Self-study: clinical presentation, diagnosis and treatment of magnesium and calcium abnormalities, the application of blood gas analysis.

Chapter 5 Surgical Shock

Aims and Requirements

1. Be familiar with the etiology and pathophysiology of surgical shock, especially the hypovolemic and infectious shock.

2. Be familiar with the clinical manifestations, diagnostic point, general treatment principles of shock.

3. Know about the differential diagnosis and clinical manifestations of all kinds of shock.

4. Grasp assessment and main points for treating of hypovolemic and infectious shock.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Definition and modern concept of shock.

2. Etiology, classification, basic pathophysiological changes, clinical manifestations and general treatment principles for surgical shock. Explain the clinical manifestations and early diagnosis of shock in every stage according to the evolvement course of shock.

3. Pathophysiological changes, clinical manifestations and general treatment principles for hypovolemic and infectious shock.

4. Monitoring method and its clinical significance for shock patients.

Practical

Clinical features, diagnostic approaches and therapeutic modalities.

Time required: 1 class hour.

Chapter 7 Surgical Intensive Care Unit

Aims and Requirements

Know about the characteristics of the ICU ward, the evaluation of critical patients in the ICU, the monitor and treatment of respiratory function and hemodynamics.

Teaching hours

Self-study: 2 class hours.

Course contents

1. Evaluation of critical patient in the ICU.

2. Monitor and treatment of respiratory function.

3. Monitor and treatment of hemodynamics.

Practical

No.

Chapter 8 Multi-Organ Dysfunction Syndrome

Aims and Requirements

1. Grasp the concept, etiology and main prevention and cure principles.

2. Be familiar with the etiology, pathophysiology, clinical manifestations, diagnosis and treatment principles for acute renal failure.

3. Be familiar with the etiology, pathophysiology, clinical manifestations, diagnosis

and treatment principles of acute respiratory distress syndrome.

4. Know etiology, pathophysiology, clinical manifestations, diagnosis and treatment principles of acute hepatic failure and stress ulcer.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Concepts, predisposing factors, preventing measures and treatment principles of MODS.

2. Etiology, pathophysiology, clinical manifestations, diagnosis and treatment principles of acute renal failure, acute respiratory distress syndrome, acute hepatic failure and stress ulcer post trauma, surgical infection and operation.

Practical

Basic accessment and approach of life sign monitor, and utility of ventilator and dialyzer.

Time required: 1 class hour.

Chapter 9 Perioperative management

Aims and Requirements

1. Understand classification of operation.
2. Understand the patient's psychosocial reactions to operation.
3. The basic method of patient interview/preoperational assessment.
4. Preparation before operation.
5. Management of the postoperative patient.
6. Complications after operation.

Teaching hours

Self-study: 2 class hours.

Course contents

1. The classification of operation according to different methods.

2. The patient's psychosocial reactions to operation and how to control them.

3. Preparation before operation: including physical preparation (orders carried out, diet, skin preparation, bowel preparation, medications, antibiotics).

4. The postoperative patient: transfer to recovery room or ICU, immediate postoperative complications "ABC", assessments, temperature/infection, fluid intake/output, safety, drains.

6. Complications related to operation: pulmonary problems, cardiovascular problems, neurologic problems, hypothermia, pain, nausea and vomiting, fluid and electrolyte problems, incision problems, and so on.

Practical

Training surgical basic skills: cutting, suture, knotting.

Time required: 3 class hour.

Chapter 10 Surgical Nutrition

Aims and Requirements

1. Know the metabolic changes in surgical patients and be familiar with the

operation influence on metabolism.

2. Be familiar with nutritional demands in surgical patients and the method of nutrient supplements.

3. Grasp the indications for parenternal and enteral nutritional supplement, their principles of application and complications.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Metabolic changes in the human body during the surgery such as trauma, fast, infection.

2. Index to estimate malnutrition and evaluation of the nutritional condition.

3. Indication and contra-indication for enteral and parenteral nutrition application.

Practical

No.

Self-study: the demands of energy and nutrients in the human body, the approach and method of nutrient supplements and the sort, compounding of nutrients, the characteristic of each nutrient and its advantage, disadvantage in usage, the criteria for nutrients configuration.

Chapter 11 Surgical Infections

Aims and Requirements

1. Grasp occurrence, development and treatment principles of surgical infection.

2. Know common pathogenic bacteria (staphylococcus, streptococcus and so on) and development of infection.

3. Be familiar with the etiologic clinical manifestations, diagnosis and treatment principles for SIRS、bacteraemia、toxaemia and sepsis.

4. Grasp the clinical manifestations、prevention and treatment of tetanus.

5. Know the application of antibacterial drugs or surgical infectious.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Occurrence and development of surgical infections and treatment principles.

2. Conception, classification, etiology and treatment principles of common surgical infections, including etiology and clinical manifestations of acute suppurate infection of the skin and soft tissue: furuncle, carbuncle, cellulites, erysipelas, acute lymphadenitis, incision and drainage of abscess.

3. Etiology, pathology, clinical manifestations, diagnosis and treatment principles to SIRS, bacteraemia, toxaemia and sepsis.

4. Clinical manifestations, diagnosis and treatment principles for tetanus.

5. Choice and applying principles of antibacterial drugs.

Practical

No.

Chapter 12 Trauma

Aims and Requirements

1. Be familiar with the etiology, classification and pathophysiology of trauma.

2. Be familiar with clinical presentations, physical examination and diagnostic methods, and principles of treatment.

3. Grasp the principles of debridement of an open wound.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Mechanisms of different traumatic factors and the classification of trauma.

2. Local response of the human body to injury, metabolic and neuroendocrine responses and changes in the vital organs after trauma.

3. Classification of the process of tissue repairs and wound healing, and methods of management of different wounds.

4. Physical examination and diagnostic methods of trauma, and principles of emergency treatment.

5. Principles of treatment of open wounds and procedures of debridement.

Practical

No.

Chapter 13 Burns, Frostbite and Insect Bites

Aims and Requirements

1. To master the methods to calculate burn size and to evaluate burn depth.
2. To master the clinical features and management of inhalation injury.
3. To master the fluid resuscitation formula of major burns.
4. To understand burn severity classification and first aid of minor burns.
5. Have a general concept about burn wound care.
6. To understand the types of burn wound operation.
7. To master the clinical features and management of electrical injury.
8. To know character of chemical burn and emergency treatment.
9. To know clinical presentation, diagnosis and emergency management of frostbite.

Teaching hours

Lecture: 3 class hours.

Course contents

1. Etiology and pathophysiology of burns.
2. Assessment of burn depth and burn size calculation.
3. Burn severity classification.
4. First aid of minor burns.
5. Pathophysiology, clinical assessment, and treatment of inhalation injury.
6. Acute burn resuscitation: Parkland formula and fluid choice.
7. Care of the burn wound: open method, closed method, and topical antibacterial agents.
8. Burn wound operation: escharotomy, excision and graft.
9. Pathophysiology, clinical assessment, and treatment of electrical injury.

10. Characters of burns with strong acid, strong alkali and phosphorus, and methods of related emergency care.

Practical

To study the burn depth assessment and burn size calculation.

To observe the burn wound dressing changes.

To observe the excision of burn wound and skin graft.

Time required: 3 class hour.

Self-study: Etiology, pathology and essential of prevention and treatment of frostbite;

Clinical presentation, treatment and emergency management of insect bites.

Chapter 14 Neoplasms

Aims and Requirements

1. Know the etiology, classification and tumor nomenclature.

2. Be familiar with the biologic characteristics, prevention-cure principles and progress in diagnosis and treatment of tumors.

3. Know the etiology and classification of tumor markers in common tumor.

Teaching hours

Lecture: 2 class hours.

Course contents

1. The etiology, classification of tumor.

2. The biologic characteristics, classification, etiological factors of tumor formation.

3. The local manifestations and general symptoms of tumor.

4. The concept of tumor staging and progress in diagnosis and treatment.

5. The etiology, characters for diagnosis and treatment of common superficial tumors.

Practical

No.

Chapter 15 Organ Transplantation

Aims and Requirements

1. Know the general situations for transplantation surgery.

2. Know the indications for transplantation, selection of donors and recipients.

3. Know basic methods of allograft transplantation.

Teaching hours

Lecture: 2 class hours.

Course contents

1. The concept, classification, phylogeny and progress of organ transplantation.

2. The indication for transplantation, selection of donors and recipients, the organ harvest and preservation, classification, identification, treatment and prevention of immune rejection.

3. The basic methods and procedure of allograft transplantation.

Practical

No.

Chapter 16 Minimal Invasive Surgery

Aims and Requirements

1. Know the concept of minimal invasive surgery.
2. Know the principles of laparoscopic surgery.
3. The indications and contra-indications for laparoscopic surgery in surgical treatment.
4. Basic concept of intervene technique.

Teaching hours

Lecture: 2 class hours.

Course contents

1. The concept of minimally invasive surgery, common applications in clinical.
2. The principles of laparoscopic surgery, instruments and basic technology of laparoscopic surgery.
3. The indications and contra-indications for laparoscopic surgery in surgical treatment.
4. Intervene technique in surgery.

Practical

No.

Neurosurgery

OBJECTIVES

Knowledge

1. To master the method for collecting medical history of patients in neurosurgery;
2. To master the basic methods of examination of the nerve system;
3. To master the clinical manifestations, diagnosis, differential diagnosis and treatment of common diseases in neurosurgery;
4. To understand the commonly used methods and results of auxiliary examination in neurosurgery;
5. To understand the diagnostic methods and procedures of all kinds of common diseases in neurosurgery;
6. To understand the location and image features of intracranial and spinal space occupying lesions.

TEACHING AND LEARNING METHODS

Lecture, autonomic learning, clinical practical.

RECOMMENDED REFERENCE BOOKS

Mark S. Greenberg. 2010. Handbook of Neurosurgery [M]. 7th ed. New York: Thieme Medical Publishers.

SCHEDULE TABLE

NO.	Course Contents	Hours of Lecture	Hours of Self-study	Hours of Clinical Practice
17	Increased Intracranial Pressure and Brain Herniation	4		1
18	Brain Trauma	4		2
19	Intracranial and Intraspinal Tumor	4		1
20	Intracranial and Intraspinal Vascular Diseases	3		1
21	Craniocerebral and Spinal Congenital Malformation	3		1
	Total	18		6

COURSE CONTENTS

Theory

Chapter 17 Increased Intracranial Pressure and Brain Herniation

Aims and Requirements

1. Master the definition of increased intracranial pressure, the measurement of intracranial pressure and the normal value, the physiological regulation of intracranial pressure and the typical clinical manifestations.

2. Master the three types of common hernia (transtentorial herniation, subfalcine herniation and foramen magnum hernia), early symptoms and typical performance, the difference and relation, early discovery and treatment principles.

3. General grasp of the occurrence mechanism of optic nerve papillary edema, skin layer state and the characteristics of the brain state.

4. General grasp of the mechanism and common causes of increased intracranial pressure.

5. To understand the classification of brain edema, classification of hydrocephalus.

Teaching hours

Lecture: 4 class hours.

Course contents

1. The correct method of measuring intracranial pressure and the normal value of intracranial pressure and intracranial pressure.

2. Review the production and circulation of cerebrospinal fluid, review the regulation of cerebral blood flow, clarify the relationship between Kellie Monroe principle and pressure volume, the physiological role and mechanism of intracranial volume on intracranial pressure.

3. Mechanisms and common causes of increased intracranial pressure.

4. The clinical manifestation, diagnosis and treatment of intracranial hypertension.

5. Tentorium cerebelli, falx cerebri and foramen magnum anatomical structure, expound the transtentorial herniation, subfalcine herniation and foramen magnum hernia early manifestations, typical manifestation, prognosis, the difference and relation, early discovery and treatment principle.

6. Introduce the damage location and characteristics of the peeled layer state and decerebrate state.

Practical

Clinical practice in Department of Neurosurgery Intensive Care Unit;

To observe the high intracranial pressure in patients with cerebral hemorrhage and TBI;

To observe and evaluate the clinical manifestations of the patients with cerebral hernia.

Time required: 1 class hours.

Chapter 18 Brain Trauma

Aims and Requirements

1. To master the clinical manifestations, diagnostic criteria, first aid and treatment principles of all kinds of brain injury. Including scalp injury, skull fracture, brain concussion, brain contusion, brain stem injury, all kinds of intracranial hematoma and compound injury.

2. To master the mechanism of brain injury and the effect of different mechanisms. The injury mechanism and the site of injury, such as focal point injury or hedge injury.

3. Master the injury classification and Glasgow Coma Score.

4. To master the classification and standard of brain injury, such as closed or open injury, primary or secondary injury.

5. To grasp the common complications of brain injury and its diagnostic criteria.

6. To master the principle of operation and non-operation treatment of severe brain injury.

Teaching hours

Lecture: 4 class hours.

Course contents

1. To introduce the classification and standard of brain injury. To explain the clinical manifestations, diagnostic criteria and treatment principles of various types of brain injury.

2. To briefly review the anatomical characteristics of the skull base, explain the clinical manifestations of the skull base fracture, and clarify the points of diagnosis and treatment principles.

3. According to the typical pattern of injury, the mechanism of brain injury and the effect of injury were expounded.

4. To explain the diagnosis, operation and non-operative treatment of cerebral contusion and various types of intracranial hematoma combined with the existing or previous cases.

5. The complications and treatment principles of common brain injury were introduced.

6. Illustrate the severity of brain injury and Glasgow Coma Score.

Practical

Clinical practice in department of neurosurgery (brain trauma ward);

Read the head CT of brain trauma patients, correctly identify the type of trauma, and complete the relevant patient's physical examination;

Observe and evaluate the condition of patients with trauma, GCS score, and put forward the basic treatment strategy.

Time required: 2 class hours.

Chapter 19 Intracranial and Intraspinal Tumor

Aims and Requirements

1. To master the common types of intracranial tumors, histological origin, location and pathological characteristics.

2. To master the typical clinical manifestations, common tumors and differential diagnosis of tumors in the saddle area and the cerebellopontine angle area.

3. Diagnosis and treatment of brain tumor.

4. To know the main sources of brain metastases and the common ways of metastasis.

5. To master the clinical features and differential diagnosis of spinal cord, subdural and spinal epidural tumors.

6. To master the imaging features of spinal cord, subdural and spinal epidural tumors.

7. Master Brown-séquard syndrome, spinal shock, segmental distribution of dissociated sensory disturbance, Horner syndrome explanation and significance.

Teaching hours

Lecture: 4 class hours.

Course contents

1. Common types of intracranial tumors, according to the occurrence rate of high and low ranking. To clarify the origin, pathologic characteristics, prognosis, diagnosis and treatment of their own.

2. Explain the epidemiological characteristics of common intracranial tumors in different age, sex, and different parts.

3. Classification of tumors of the central nervous system of WHO.

4. A brief introduction to the pathological classification of gliomas and meningiomas.

5. Specific clinical syndromes of tumors in different locations.

6. The typical clinical features, common tumor and its main characteristics of the tumors in the saddle area and the cerebellopontine angle area.

7. According to the anatomical and physiological characteristics of the spinal cord, the clinical manifestations and diagnostic features of spinal cord compression and intramedullary compression.

8. Types of spinal tumors in different parts of the spinal.

9. According to the anatomical and physiological characteristics of the spinal cord, to explain Brown-séquard syndrome, spinal shock, segmental distribution of dissociated sensory disturbance, Horner syndrome etc.

Practical

Clinical practice in department of neurosurgery (intracranial and intraspinal tumor ward);

Correctly read the imaging features of MR scan and enhancement MR in patients;

According to the teaching content, correctly identify the characteristics of different types of tumors, clear the clinical manifestations of different parts of the tumor, and complete the relevant patient's physical examination;

According to the postoperative pathology, put forward the basic treatment strategy.

Time required: 1 class hour.

Chapter 20 Intracranial and Intraspinal Vascular Diseases

Aims and Requirements

1. Master the common location of hypertensive cerebral hemorrhage and surgical indication. Master the surgical treatment of ischemic cerebrovascular disease.

2. Master the main clinical manifestations of the classification aneurysm and rupture of intracranial aneurysms.

3. The clinical classification of subarachnoid hemorrhage and the primary treatment of intracranial aneurysms.

4. To master the classification, clinical manifestation, diagnosis and treatment of intracranial and intraspinal vascular malformation.

5. To understand the clinical manifestations and treatment principles of basilar artery disease and carotid cavernous fistula.

Teaching hours

Lecture: 3 class hours.

Course contents

1. The epidemiological characteristics of hypertensive cerebral hemorrhage and ischemic stroke.

2. The main bleeding site, clinical manifestation and surgical treatment of hypertensive cerebral hemorrhage were introduced in combination with clinical cases or previous data.

3. Principles of surgical treatment for ischemic stroke.

4. The epidemiological characteristics, classification and classification, main clinical manifestations, diagnostic methods and treatment of intracranial aneurysms are introduced.

5. Hunt-Hess evaluation method of subarachnoid hemorrhage.

6. Classification of vascular malformations, the main clinical manifestations and treatment methods.

7. Clinical manifestations and treatment principles of abnormal vascular network of skull base and carotid cavernous fistula.

Practical

Clinical practice in department of neurosurgery (Cerebral vascular disease ward);

To read the head CT of hypertensive cerebral hemorrhage patients, correctly identify the bleeding site, and to complete the relevant patient's physical examination;

To observe and evaluate the patient's condition, and put forward to the basic treatment strategy;

Correctly identify the imaging features of SAH, and to point out the possible location of aneurysm;

To observe the DSA angiography and interventional embolization.

Time required: 1 class hour.

Chapter 21 Craniocerebral and Spinal Congenital Malformation

Aims and Requirements

1. To understand the etiology and classification of congenital hydrocephalus.

2. To know the clinical manifestations and diagnosis of congenital hydrocephalus.

3. To understand the treatment of congenital hydrocephalus.

4. Understanding the etiology, classification, clinical manifestations, diagnosis and treatment of cranial and spinal.

5. Self-taught of skull base anatomy and skull base malformation diseases.

Teaching hours

Lecture: 3 class hours.

Course contents

1. The epidemiological characteristics of congenital hydrocephalus.

2. The etiology and classification of congenital hydrocephalus.

3. To discuss the clinical manifestations, diagnosis and treatment of congenital hydrocephalus.

4. The etiology, classification, clinical manifestations, diagnosis and treatment of intracranial and spinal fracture are briefly introduced.

Practical

To carry out clinical practice in pediatric department of Neurosurgery Ward (retrospective analysis and explanation of typical cases);

Through the case of probation, discussion of hydrocephalus and spina bifida, hard meningocele, congenital disease etiology, clinical manifestations and treatment principles, and advances some new treatment.

Time required: 1 class hour.

Cardiothoracic Surgery

OBJECTIVE

Knowledge

Cardiothoracic surgery is an important part of surgery and includes diseases of the heart, lung and esophagus. It's related to the basic functions of the human body, such as respiration and circulation. This subject introduces etiology, pathology, pathophysiology, clinical presentation, diagnosis and differentiation, management principles, surgical treatment and prognosis of cardiothoracic diseases. One part of this subject, general thoracic surgery, includes thoracic trauma, disease of the chest wall and pleura, mediastinal disease, esophageal disease, lung tumor and benign pulmonary disease, etc; the other part, cardiac surgery, includes general consideration, cardiopulmonary bypass, congenital heart disease, rheumatic heart disease, coronary heart disease, aortic dissection and pericarditis, etc. Teaching time includes lectures and clinical practice. Students should master diagnosis and management principles of some common cardiothoracic diseases and have the clinical skills to take the history of disease and do physical examinations of the chest so as to give diagnosis and treatments.

TEACHING AND LEARNING METHODS

Lecture, autonomic learning, clinical practical.

RECOMMENDED REFERENCE BOOKS

Frank W Sellke, Pedro J del Nido, Scott J Swanson. 2009. Sabiston and Spencer's Surgery of the Chest [M]. 8th ed. Amsterdam: Saunders, Elsevier Medicine.

Hendrik C Dienemann, Hans Hoffmann, Frank C Detterbeck. 2015. Chest Surgery, Springer Surgery Atlas Series [M]. Berlin: Springer.

Larry Kaiser, Irving L Kron, Thomas L Spray. 2014. Mastery of Cardiothoracic Surgery [M]. 3 rd Ed. Philadephia: Lippincott Williams & Wilkins.

Thomas W Shields, Joseph LoCicero Carolyn E. Reed et al. 2009. General Thoracic Surgery [M]. 7th ed. Philadephia: Lippincott Williams & Wilkins.

SCHEDULE TABLE

NO.	Course Contents	Hours of Lecture	Hours of Self-study	Hours of Clinical Practical
22	Thoracic trauma	2		2
23	Diseases of the chest wall and pleura	1		
24	Pulmonary disease	3		2
25	Esophageal disease	2		
26	Primary Mediastinal Tumors	1		
27	Heart Disease	5.5		2
28	Aortic Disease	0.5		
	Total	15		6

COURSE CONTENTS

Theory

Chapter 22 Thoracic Trauma

Aims and Requirements

1. To master classification, main pathophysiological changes and emergency treatment principles of thoracic trauma.

2. To master indications of thoracic exploration in traumatic patients and diagnostic criteria of progressing hemothorax.

3. To be familiar with pathogenesis, pathophysiological changes, clinical presentations, diagnosis and treatment of rib fracture, pneumothorax, hemothorax, pulmonary contusion and hemopericardium.

4. Have a general concept about pathophysiological change, diagnosis and treatment of the damage from bronchus, lung parenchyma, esophagus, diaphragm, heart and great vessels.

Teaching hours

Lecture: 2 class hours.

Course contents

1. General consideration, pathophysiological changes, clinical presentations, diagnosis and treatment for each type below.

2. Rib fractures.

3. Pneumothorax, including simple, open and tension.

4. Hemothorax.
5. Traumatic asphyxia.
6. Lung injuries.
7. Cardiac injuries, including blunt and penetrating.
8. Diaphragmatic injuries, including penetrating and blunt.

Practical

Provide primary care for life-threatening thoracic trauma.
Procedures and indications of thoracostomy.
Model: Patient model for thoracostomy.
Time required: 2 class hours.

Chapter 23 Diseases of the Chest Wall and Pleura

Aims and Requirements

1. To master classification, stage progress and pathology of empyema.

2. To be familiar with etiology, pathology, diagnosis, treatment principles, and surgical approaches and indications of empyema.

3. Have a general concept about chest wall deformity, Tietze disease, chest wall tuberculosis, and tumors of chest wall and pleura.

Teaching hours

Lecture: 1 class hour.

Course contents

1. Chest wall deformity and Tietze disease.
2. Empyema, including acute and chronic types.
3. Chest wall tuberculosis.
4. Tumors of chest wall and pleura.

Practical

No.

Chapter 24 Pulmonary Disease

Aims and Requirements

1. To master classification, pathology, metastatic routes, staging, clinical presentations, diagnostic methods, surgical treatment principles of lung cancer.

2. To be familiar with etiology, significance and methods of early diagnosis, prevention and treatment principles, also operative indications of lung cancer.

3. Have a general concept about chemotherapy and radiotherapy of lung cancer, benign and metastatic lung tumors.

4. Have a general concept about pulmonary bulla, surgical treatment of pulmonary infectious disease.

5. Have a general concept about thoracoscopy techniques.

Teaching hours

Lecture: 3 class hours.

Course contents

1. Etiology, pathology, clinical presentations and surgical treatment of pulmonary

bulla. Application of thoracoscopy techniques.

2. Surgical treatment for pulmonary infectious disease, including bronchioectasis, lung tuberculosis, lung echinococcosis and invasive pulmonary fungal infection.

3. Epidemiology, etiology, classification, pathology, metastatic routes, staging, clinical presentations, diagnostic methods, differentiation, treatment principles of lung cancer, operative indications for lung cancer, surgical treatment and multimodality treatment of lung cancer.

4. Bronchial adenoma, benign and metastatic lung tumors.

Practical

Procedures of thoracoscopy.

Model: Patient model for thoracoscopy.

Time required: 2 hours.

Chapter 25 Esophageal Disease

Aims and Requirements

1. To master clinical presentations, clinicopathological types, staging, and corresponding treatment principles of esophageal carcinoma.

2. To be familiar with etiology, epidemiology, diagnosis and differentiation, treatment principles of esophageal carcinoma.

3. Have a general concept about benign esophageal tumors, caustic esophagitis, cardia achalasia and esophageal verticulum.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Etiology, epidemiology, pathology, anatomy, clinicopathological types, staging, clinical presentations, diagnosis and differentiation, treatment principles, common surgical approaches and complications, significance of early diagnosis and treatment of esophageal carcinoma.

2. Benign esophageal tumors, caustic esophagitis, cardia achalasia and esophageal verticulum.

Practical

No.

Chapter 26 Primary Mediastinal Tumors

Aims and Requirements

1. To be familiar with the relationship between the anatomy and pathological types of tumors in the mediastinum.

2. Have a general concept about classification, clinical presentations, diagnosis and treatment principles of mediastinal tumors.

3. Have a general concept about pathology, classification, staging, clinical presentations, diagnosis and treatment principles and prognosis of thymoma.

Teaching hours

Lecture: 1 class hour.

Course contents

1. Mediastinal tumors: classification, pathology, clinical presentations, imaging features diagnosis and differentiation and treatment principles.

2. Thymoma: pathology, classification, staging, clinical presentations, diagnosis and treatment principles and prognosis.

Practical

No.

Chapter 27 Heart Disease

Aims and Requirements

1. To be familiar with extracorporeal circulation and myocardial protection.

2. To master basic classification, clinical presentations, hemodynamic and pathophysiological changes of common congenital heart disease (ASD, VSD, PDA, PS, Fallot teratology). To be familiar with diagnostic methods, operative indications and surgical treatment principles of these congenital heart disease. Have a general concept about aortic stenosis and valsalva sinus rupture.

3. To master clinical presentations, hemodynamic and pathophysiological changes of common valve heart disease (mitral stenosis), to be familiar with diagnostic methods, operative indications and surgical treatment principles, and selection of different operation approaches. Have a general concept about categories, features, selection principles of artificial valve, instructions after valve replacement. Have a general concept about clinical presentations, diagnostic methods and treatment principles of other valve heart diseases (mitral regurgitation, aortic stenosis, aortic regurgitation).

4. To master anatomy of the coronary artery, etiology, pathophysiology, diagnosis, treatment principles and operative indications of coronary heart diseases. Have a general concept about progression of coronary artery surgery.

5. Have a general concept about etiology, pathophysiological changes, clinical presentations, diagnostic methods and treatment principles of chronic strictive pericarditis.

6. Have a general concept about pathophysiological changes, clinical presentations, diagnosis and treatment principles of heart myxeoma.

7. Have a general concept about great vessels surgery, etiology, pathology, diagnosis and treatment principles of aortic aneurysm.

Teaching hours

Lecture: 5.5 class hours.

Course contents

1. Anatomy basis of the heart.

2. The history of cardiac surgery, low-temperature anesthesia and extracorporeal circulation techniques, the term, basic composition and function, the role and progression of extracorporeal circulation.

3. Surgical treatment of congenital heart disease, including patent ductus arteriosus, pulmonary stenosis, atrial septal defect, ventricular septal defect, coarctation of aorta,

rupture of aortic sinus aneurysm and tetralogy of Fallot.

4. Surgical treatment of acquired heart disease, including chronic strictive pericarditis, mitral stenosis, mitral regurgitation, aortic stenosis, aortic regurgitation, coronary atherosclerotic heart disease and cardiac myxoma.

5. Advances in cardiac surgery: circulation assist (IABP, ECMO, heart-assisting device), heart transplantation, minimal invasive surgery (telescopic and robotic cardiac surgery).

Practical

Basic composition and application of extracorporeal circulation.

Model: Patient model for extracorporeal circulation.

Time required: 2 class hours.

Chapter 28 Aortic Disease

Aims and Requirements

1. Have a general concept about general consideration of great vessels surgery.

2. Have a general concept about etiology, pathology, pathophysiology, clinical presentations, diagnosis and surgical treatment principles of aortic dissection and aneurysm.

Teaching hours

Lecture: 0.5 class hour.

Course contents

1. Thoracic aortic aneurysm.

2. Aortic dissection.

Practical

No.

General Surgery

OBJECTIVE

Knowledge

The subject of general surgery refers a broad area of surgery and includes many disorders located in the neck, breast, abdominal wall, abdomen, and peripheral blood vessels. The etiology, pathology and pathophysiology, clinical manifestations, diagnosis and differential diagnosis, management related to each disease will be presented in lectures. Undergraduates should become familiar with the principles of diagnose and how to manage common and frequent general surgical conditions, know about the common procedures of general surgery, define the indications and contraindications of surgical treatment, describe perioperative administration, and develop the skills for

surgical manipulation.

TEACHING AND LEARNING METHODS

Multimedia lectures; analysis and discussion of typical case in class; visit in-patients and wards; demonstration of typical cases and videos; self-study.

RECOMMENDED REFERENCE BOOKS

Courtney M Townsend, R Daniel Beauchamp, B Mark Evers. 2012. Sabiston Textbook of Surgery [M]. 19 th ed. Philadephia: WB Saunders Company.

Daniele Marchioni, Livio Presutti. 2014. Endoscopic Ear Surgery: Principles, Indications, and Techniques [M]. Berlin: Thieme Publishing Group.

F Charles Brunicardi. 2010. Schwartz's Principles of Surgery [M]. 10th ed. New York: McGraw-Hill Companies, Inc.

Kevin B Frey, Tracey Ross, Jeffrey Lee Bidwell. 2009. Surgical Technology for the Surgical Technologist [M]. 3 th ed. New York: Cengage Learning.

Michael J Zinner. 2012. Maingot's Abdominal Operation [M]. 12 th ed. New York: McGraw-Hill Companies, Inc.

Peter F Lawrence. 2012. Essentials of General Surgery [M]. Philadephia: Lippincott Williams & Wilkins.

Xuehong Wan (万学红). 2017. Clinical Diagnostics [M]. Bei Jing: People's Health Press.

SCHEDULE TABLE

No.	Course Contents	Hours of Lecture	Hours of Self-study	Hours of Clinical Practical
29	Neck diseases	4		1
30	Breast diseases	4		1
31	Abdominal external hernias	4		1
32	Abdominal injury	2		1
33	Acute suppurative peritonitis	2		1
34	Stomatch and duodenum Diseases	6		1
35	Intestinal diseases	3		1
36	Appendicitis	2		1
37	Colorectal and anal diseases	6		1
38	Liver diseases	3		1

Continued

No.	Course Contents	Hours of Lecture	Hours of Self-study	Hours of Clinical Practical
39	Portal hypertension	2		1
40	Biliary tract diseases	6		1
41	The acute abdomen	3		1
42	Pancreas diseases	2		1
43	Spleen diseases	2		0
44	Vascular diseases	6		1
	Total	57		15

COURSE CONTENTS

Theory

Chapter 29 Neck Disease

Aims and Requirements

1. Understand characteristics of neck mass, master correct examination of a neck mass.
2. Master diagnosis and treatment principles of nodular of a thyroid.
3. Master surgical treatment principles of hyperthyroidism and treatment for the perioperation period for hyperthyroidism.
4. Master the diagnostic and treatment principles for thyroid carcinoma.
5. Understand the diagnostic and treatment principles for thyroiditis.
6. Understand pathology, clinical manifestations and treatment principles for hyperparathyroidism.

Teaching hours

Lecture: 4 class hours.

Course contents

1. Local anatomy and physiology of the thyroid.
2. Surgical indications of various thyroid diseases.
3. Etiology, clinical manifestations and treatment of simple goiter.
4. Differential diagnosis and treatment principles for a nodular thyroid.
5. Clinical manifestations and special examination for hyperthyroidism, preparation of pre-operation, complication of operation.
6. Pathologic classification, diagnosis and treatment principles for thyroid carcinoma.
7. Etiology, clinical manifestations and treatment principles for thyroiditis.
8. Clinical manifestations and treatment principles for primary hyperparathyroidism.

Practical

Examination of thyroid nodules and preoperative lab and radiographic study.

Time required: 1 class hour.

Chapter 30 Breast Diseases

Aims and Requirements

1. Understand local anatomy and physiology of the breast.
2. Master correct examination of the breast.
3. Be familiar with differential diagnosis of a breast mass.
4. Be familiar with the diagnosis, prevention and treatment of acute mastitis.
5. Master diagnosis and treatment principles for breast carcinoma.

Teaching hours

Lecture: 4 class hour.

Course contents

1. Physical examination of the breast.
2. Etiology, clinical manifestations, diagnosis, treatment and prevention of acute mastitis.
3. Etiology, diagnosis and treatment of hyperplasia of the breast.
4. Clinical manifestations, diagnosis and differential diagnosis of a benign tumor and malignant tumor of the breast.
5. Etiology, pathologic classification, metastases route, surgical treatment principles and progress of treatment of breast carcinoma.

Practical

Physical examination of breast and axilla, and clinical manifestation of breast cancer, demonstration of typical cases.

Time required: 1 class hour.

Self-study: Local anatomy and physiology of the breast.

Chapter 31 Abdominal External Hernia

Aims and Requirements

1. Master the concept, etiology, pathology and clinical classification and treatment of abdominal external hernias.
2. Master the anatomy of the inguinal region, including the inguinal canal, Hesselbach's triangle and femoral canal.
3. Master the essential of diagnosis and differential diagnosis of indirect and direct inguinal hernias.
4. Be familiar with the definitions, pathological characters, clinical presentations and principles of treatment of incarcerated and strangulated hernia.
5. Be familiar with the principles of operative treatment of an inguinal hernia and types of operations for inguinal hernia.
6. Understand the clinical presentations and principles of treatment of femoral, umbilical and incisional hernias.

Teaching hours

Lecture: 4 class hour.

Course contents

1. Concept, etiology, pathology and clinical classifications of external hernia.
2. Anatomy of the inguinal region.

3. Clinical presentations, diagnosis and differential diagnosis for indirect and direct inguinal hernias.

4. Principles of operative treatment of an inguinal hernia, indications of different types of operations for an inguinal hernia and advancement of surgical management.

5. Pathological anatomy, clinical presentation and treatment of femoral hernia.

6. Definitions, pathological characters, clinical presentations and principles of treatment of incarcerated and strangulated hernia.

Practical

Clinical manifestations and characters of various inguinal hernia.

Time required: 1 class hour.

Self-study: Pathological anatomy, clinical presentation and treatment of umbilical and incisional hernias.

Chapter 32 Abdominal Injury

Aims and Requirements

1. Be familiar with sorting, etiology, clinical manifestations, diagnostic procedures and treatments of abdominal injury.

2. Master emergency treatment and principles of management of abdominal injury.

3. Be familiar with diagnosis and principles of management of traumatic liver, spleen and bowel rapture.

4. Understand the application of damage control surgery.

Teaching hours

Lecture: 2 class hour.

Course contents

1. Causes, clinical presentations and diagnostic procedures for blunt abdominal injury.

2. Clinical applications and significance of early diagnostic methods, such as X-ray, ultrasonography, and CT scanning.

3. Emergency treatment and principles of management of abdominal injury.

4. Presentations of injury of solid organs, such as liver, spleen and injury of hollow organs and methods of management, indications for exploration and time of exploration.

Practical

Assistant examinations of abdominal injury and differential diagnosis between solid organs rupture and hollow organs rupture.

Time required: 1 class hour.

Self-study

Diagnosis and treatment of injuries of the pancreas, duodenum and rectum.

Chapter 33 Acute Suppurative Peritonitis

Aims and Requirements

1. Be familiar with etiology, pathophysiology, clinical presentation of acute suppurative peritonitis and differential diagnosis between secondary and primary peritonitis.

2. Master correct physical examination techniques, diagnostic methods and principles of management of peritonitis.

3. Understand the clinical presentation and principles of diagnosis and treatment of an abdominal abscess.

Teaching hours

Lecture: 2 class hour.

Course contents

1. Etiology, pathophysiology, clinical presentation, diagnosis, differential diagnosis, principles of management and methods of treatment of acute suppurative peritonitis.

2. Differential diagnosis between secondary and primary peritonitis.

3. Diagnosis and treatment of abdominal abscess.

Practical

Abdominal examination and assistant examinations of secondary peritonitis.

Time required: 1 class hour.

Self-study

1. Anatomy and physiological character of the peritoneal cavity.

2. Abdominal compartment syndrome.

Chapter 34 Stomatch and Duodenum Diseases

Aims and Requirements

1. Be familiar with anatomy and physiology of stomach and duodenum.

2. Be familiar with pathogenic mechanics and clinical manifestation of peptic ulcer.

3. Be familiar with clinical manifestations of acute perforation, acute massive hemorrhage and pyloric obstruction induced by peptic ulcer, principles of diagnosis and treatment of these complications of peptic ulcer.

4. Master indications of surgery for peptic ulcer, operative procedures, selection of a variety of procedures and postoperative complications following gastric surgery.

5. Be familiar with histopathological classification, clinical manifestation, diagnostic methods and management principles of gastric carcinoma.

6. Understand metastatic characters and surgical principles of gastric carcinoma.

7. Understand pathology, clinical manifestation, diagnostic methods and management principles of gastric lymphoma, GIST, GIMT, congenital hypertrophic pyloric stenosis, duodenal diverticulum, superior mesenteric artery syndrome.

Teaching hours

Lecture: 6 class hour.

Course contents

1. Anatomy and physiology of stomach and duodenum.

2. Surgical principles and operative procedures for peptic ulcer; Prevention and treatment of postoperative complications of gastric surgery.

3. Clinical manifestations, diagnosis and differential diagnosis and treatment of major complications of peptic ulcer such as acute perforation, acute massive hemorrhage and pyloric stenosis.

4. Pathologic patterns, metastatic features, lymphatic node grouping and international pTNM staging of gastric carcinoma.

5. Clinical presentation, diagnostic methods and surgical principles of gastric

carcinoma; definition of radical resection; prognosis of gastric carcinoma.

6. Clinical presentation, diagnostic methods and treatments of GIST and superior mesenteric artery syndrome.

Practical

Clinical presentation, diagnosis and differential diagnosis of common complications of gastroduodenal ulcer. Assistant examinations of gastric cancer and analysis of pathological report.

Time required: 1 class hour.

Self-study: pathogenetic mechanism of peptic ulcer and the theoretical foundation for surgery on peptic ulcer; diagnosis and treatment of gastric lymphoma, GIMT, congenital hypertrophic pyloric stenosis, duodenal diverticulum.

Chapter 35 Intestinal diseases

Aims and Requirements

1. Be familiar with the anatomy and physiology of small intestine.

2. Be familiar with the definition, clinical features and surgical indications of inflammatory bowel diseases.

3. Master comprehensive knowledge of pathogenesis, classification and pathophysiologic course of intestinal obstruction; acquaintance with clinical presentation, diagnosis and treatment of intestinal obstruction; differential diagnosis and management principles of simple intestinal obstruction and strangulated intestinal obstruction.

4. Understand the general knowledge of clinical features and surgical treatment for common infective intestinal disease.

5. Understand the definition of short gut syndrome and principles for treatment.

6. Understand the diagnosis and treatment of small intestinal tumors.

Teaching hours

Lecture: 3 class hour.

Course contents

1. Intestinal obstruction: pathogenesis, classification, pathophysiology, clinical presentation, principles of diagnosis and treatment.

2. Simple or/and strangulated intestinal obstruction: clinical presentation, differential diagnosis and principles of treatment.

3. Inflammatory bowel diseases: clinical presentation, diagnosis and principles of surgical treatment.

4. Small intestinal tumors: clinical presentation, diagnosis and treatment.

Practical

Typical cases demonstrate clinical presentations, assistant examinations and medical treatment of various intestinal obstructions. Differential diagnosis of simple and strangulated intestinal obstruction.

Time required: 1 class hour.

Self-study: Summary of the anatomy and physiology of the small bowel; pathogenetic mechanism and pathology of IBD; diagnosis and treatment of atresia and malrotation of

the intestine; definition and principles of diagnosis and treatment of the short gut syndrome.

Chapter 36 Appendix Diseases

Aims and Requirements

1. Be familiar with the anatomy and physiology of appendix.

2. Master pathological typing, clinical manifestations, diagnosis and differential diagnosis and treatment of acute appendicitis.

3. Understand clinical features and treatment principles of some special types of acute appendicitis.

4. Be familiar with diagnosis and management of chronic appendicitis.

5. Understand the common type and treatment principles of appendiceal tumor.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Anatomy and physiology knowledge of the appendix and pathogenesis of appendicitis.

2. Etiology, pathological typing, clinical manifestations, diagnosis and differential diagnosis and treatment principles of acute appendicitis.

3. Clinical features and managing principles of acute appendicitis in infants and children, in the elderly and during pregnancy.

4. Clinical manifestations, diagnosis and treatment of chronic appendicitis.

5. Appendectomy and postoperative complications.

Practical

Clinical manifestation and differential diagnosis of acute appendicitis.

Time required: 1 class hour.

Self-study: Common type and treatment principles of appendiceal tumor.

Chapter 37 Colorectal and anal Diseases

Aims and Requirements

1. Be familiar with anatomy, physiology and special examination methods of the colon, rectum and anus.

2. Be familiar with the etiology, clinical features, diagnosis and treatment of fissure-in-ano, anorectal abscesses, fistula-in-ano, hemorrhoids, colorectal polyps, and rectal prolapse.

3. Master the clinical features, diagnosis, treatment and operative principles for colorectal carcinoma.

4. Understand the sorting of congenital ano-rectal malformation, and the manifestation, diagnosis, treatment principle of congenital megacolon.

Teaching hours

Lecture: 6 class hours.

Course contents

1. Anatomic and physiologic summary of the colon, rectum and anus. The positions

suited for examination in the anorectum and the basic approaches.

2. Definition of fissure-in-ano and its diagnosis and treatment.

3. Definition of internal, external and mixed hemorrhoids, and their etiology, clinical features, diagnosis and treatment.

4. Classification of anorectal abscesses and their clinical features, diagnosis and treatment.

5. Incidence and classification of fistula-in-ano, and their treatment.

6. Clinical features, diagnosis and treatment of colorectal polyps and polyposis.

7. Epidemiology of colorectal cancer, and its pathologic types and stages, clinical features, diagnostic approach, differential diagnosis, treatment strategy and prognosis.

Practical

Examination of perianal disorders. Abdominal examination, digital examination and assistant examinations of colorectal cancer and analysis of pathological report.

Time required: 1 class hour.

Self-study: Clinical features, diagnosis and treatment of congenital disorders in the anorectum.

Chapter 38 Liver Diseases

Aims and Requirements

1. Be familiar with the anatomic and physiologic summary of the liver;

2. Be familiar with the cause and typing of liver abscess, differential diagnosis for liver abscess, and treatment for liver abscess.

3. Understand differential diagnosis and therapeutic principle for benign tumors and cysts of the liver.

4. Master the etiology, diagnostic approach, differential diagnosis, treatment strategy and prognosis of primary hepatic carcinoma. To be aware of the concept of minimal hepatic carcinoma.

5. Understand the diagnosis and management of secondary hepatic cancer.

6. Be familiar with the etiology, clinical features, diagnosis, differential diagnosis and treatment of hepatic abscess.

7. Understand the etiology, pathology, clinical features, diagnosis and treatment of hydatidosis of liver.

Teaching hours

Lecture: 3 class hours.

Course contents

1. Causes and typing of liver abscess.

2. Etiology, pathology, clinical features, diagnosis and treatment of bacterial liver abscess. Clinical characters, operative indications and surgical procedures of amebic liver abscess.

3. Epidemiology of hepatic cancer, and its etiology, pathology, clinical features, diagnostic approach and differential diagnosis, as well as the indications for surgical treatment and advanced multidisciplinary therapy. The concept of minimal hepatic cancer and its clinical meaning.

4. Diagnosis and treatment of secondary hepatic cancer.

Practical

Clinical manifestation, lab study and radiograph of hepatic cancer.

Time required: 1 class hour.

Self-study: Differential diagnosis and therapeutic principle for benign tumors and cysts of the liver.

Chapter 39 Portal Hypertension

Aims and Requirements

1. Be familiar with the anatomy of the portal vein.

2. Be familiar with etiology, pathophysiology and clinical manifestations of portal hypertension.

3. Master diagnosis, indications and goals of surgical treatment and operation types of portal hypertension.

4. Be familiar with acute management of bleeding esophageal varices.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Etiology, pathology, clinical manifestations, diagnosis and treatment of portal hypertension.

2. Treatment, operative indications and therapeutic options of acute bleeding of esophageal varices and brief introduction to its managing progress.

Practical

Typical case demonstrate clinical manifestation and differential diagnosis of portal hypertension.

Time required: 1 class hour.

Self-study: Anatomy of the portal vein.

Chapter 40 Biliary Tract Diseases

Aims and Requirements

1. Be familiar with anatomy and physiology of biliary system.

2. Be familiar with special exam methods for biliary tract.

3. Master the etilology, pathophysiology, clinical manifestations, diagnosis and differential diagnosis and treatment principles for acute cholecystitis, cholelithiasis and acute suppurative cholangitis.

4. Understand indications and complications of therapeutic laparoscopy for biliary disorders.

5. Understand clinical features and treatment principles for gallbladder tumors and the cholangiocarcinoma.

Teaching hours

Lecture: 6 class hours.

Course contents

1. Anatomy and pathophysiology of biliary tract.

2. Special exam methods for biliary tract disease.

3. Stones and infective disease of biliary tract.

4. Pathogenesis of gallstones: Chronic (Acute) cholecystitis, acute acalculous cholecystitis, cholangitis, hepatolithiasis.

5. Complications of biliary tract diseases.

6. Pathology, clinical manifestations, diagnostic methods and treatment principles for gallbladder carcinoma and cholangiocarcinoma.

Practical

Clinical manifestation and cholelithiasis in gallbladder and biliary duct, training for ultrasonograph, CT/MR/MRCP films reading of biliary tract diseases, observing the procedure of ERCP/PTCD.

Time required: 1 class hour.

Self-study: Anatomy and physiology knowledge of the bile duct; Etiology, clinical manifestations and surgical treatment of biliary atresia and choledochocyst.

Chapter 41 The Acute Abdomen

Aims and Requirements

1. Be familiar with pathogenesis and classification of an acute abdomen.

2. Master diagnostic emphasis and management principles of an acute abdomen.

Teaching hours

Lecture: 3 class hours.

Course contents

1. Definition and etiology of acute abdomen, and the approach to management of acute abdomen.

2. History, physical examination, investigative studies for the acute abdomen.

3. Differential diagnosis for acute abdomen.

4. Indications for surgical exploration, and pre-operation management.

Practical

Observation in emergence room.

Time required: 1 class hour.

Self-study: Definition and clinical sense of parietal pain and visceral pain, shifting pain and radiating pain; pathogenesis, classification, diagnostic emphasis and management principles for acute abdomen.

Chapter 42 Pancreas Diseases

Aims and Requirements

1. Master the etiology, pathology, clinical manifestations, diagnosis and treatment principles for acute pancreatitis.

2. Be familiar with the pathology, clinical manifestations, diagnosis and treatment of chronic pancreatitis.

3. Master the pathology, clinical manifestations, diagnosis and treatment of a pancreatic cyst.

4. Master clinical manifestations, diagnosis and treatment principles of pancreatic

malignant tumors and duodenal ampulla tumors.

5. Understand clinical manifestations and diagnosis of pancreatic endocrine tumors.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Etiology, pathophysiology and process of acute pancreatitis.

2. Typing, clinical manifestations, diagnosis and differential diagnosis and treatment progress of acute pancreatitis.

3. Pathology, clinical manifestations, diagnosis and differential diagnosis and treatment principles of malignant tumors of the pancreas and duodenal ampulla.

4. Examination methods and principles of diagnosis and treatment for jaundice.

Practical

Typical case demonstrate clinical manifestation, assistant examinations and primary treatment of acute pancreatitis. Assistant examinations and differential diagnosis of obstructive jaundice.

Time required: 1 class hour.

Self-study: Anatomy and physiology knowledge of the pancreas; Etiology, pathology, clinical manifestations, and management principles of chronic pancreatitis; Pathology, clinical manifestations, diagnosis and treatment principles for pancreatic cysts; clinical manifestations, diagnosis and treatment of pancreatic endocrine tumors.

Chapter 43 Spleen Diseases

Aims and Requirements

1. Master operation indication for splenectomy.

2. Be familiar with effect about different kinds of splenectomy.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Anatomy and pathophysiology of spleen.

2. Spleen diseases related to surgery.

3. Main complications after splenectomy.

Practical

No.

Chapter 44 Vascular Diseases

Aims and Requirements

1. Understand ischemic and/or venous insufficiency diseases of the lower extremities: pathogenesis, diagnosis and differential diagnosis.

2. Master a simple understanding of varicose veins of the lower extremities: clinical presentation, testing method, diagnosis and treatment.

3. Be familiar with atherosclerosis obstructive lesions of arteries: clinical presentation, investigation studies and management principles.

4. Be familiar with thromboangiitis obliterans: clinical presentation, investigation

studies and management principles.

5. Be familiar with diagnosis and treatment of deep venous thrombosis.

6. Understand principles of diagnosis and treatment of acute arterial occlusion.

7. Understand clinical presentation and management principles of thoracoabdominal aneurysm, aortic dissection and traumatic arteriovenous fistulas.

8. Understand diagnostic emphasis and management principles of lymphedema of the lower extremities.

9. Understand diagnosis, prevention and treatment of Raynaud's syndrome.

Teaching hours

Lecture: 6 class hours.

Course contents

1. Anatomy of the venous system of the lower extremities; simple varicose veins of the lower extremities: causation, clinical presentation, testing method, investigation studies and indications of surgery.

2. Atherosclerosis obstructive disease: pathogenesis, pathology, clinical presentation, investigation approaches and management principles. Differential diagnosis between ASO and TAO.

3. Acute deep venous thrombosis: clinical findings, principles of diagnosis and treatment.

Practical

Clinical presentations of simple varicose veins and acute deep venous thrombosis of lower extremities. Clinical presentations and assistant examinations of acute arterial embolism.

Time required: 1 class hour.

Self-study: Thromboangiitis obliterans: causation, pathology, pathogenesis, clinical features, diagnostic methods and treatment; clinical presentation and principles of diagnosis and treatment of thoracoabdominal aneurysm, aortic dissection and traumatic arteriovenous fistulas; causation, diagnosis and treatment of lymphedema of the lower extremities; diagnosis, prevention and treatment of Raynaud's syndrome.

Urinary Surgery

OBJECTIVE

Knowledge

Urinary surgery, also known as genitourinary surgery or urology, is the branch of medicine that focuses on surgical and medical diseases of the male and female urinary tract system and the male reproductive organs. The organs under the domain of urology include the kidneys, adrenal glands, ureters, urinary bladder, urethra, and the male reproductive organs (testes, epididymis, vas deferens, seminal vesicles, prostate, and penis).

Teaching and Learning Methods.
Lecture, autonomic learning, clinical practical.

RECOMMENDED REFERENCE BOOKS

Alan J Wein, Louis R Kavoussi, Andrew C Novick, et al. 2011. Campbell-Walsh Urology [M]. 10th Ed. Philadelphia: Elsevier, Saunders.
Chen Xiaoping (陈孝平), Wang Jianping (汪建平). 2013. Surgery [M]. 8th Ed. Beijing: People's Medical Publishing House.
Xuehong Wan (万学红). 2017. Clinical Diagnostics [M]. Beijing: People's Medical Publishing House.

SCHEDULE TABLE

NO.	Course Contents	Hours of Lecture	Hours of Self-study	Hours of Clinical Practical
45	Surgical Examination and Diagnosis of Urinary and Male Reproductive System	1		0.5
46	Congenital deformity of Urinary and Male Reproductive System	1		0.5
47	Injury of Urinary System	2		0.5
48	Urinary and Male Reproductive System Infection	3		0.5
49	Genitourinary Tuberculosis	1		0.5
50	Obstruction of Urinary tract	2		0.5
51	Urinary Stone Diease	2		1
52	Tumor of Urinary and Male Reproductive System	3		1
53	Varicocele and Hydrocele	1		0.5
54	Disease of adrenal gland	1		0.5
55	Male sexual dysfunction	1		0
	Total	18		6

COURSE CONTENTS

Theory

Chapter 45 Surgical Examination and Diagnosis of Urinary and Male Reproductive System

Aims and Requirements

1. To master the reasons of frequent micturition and hematuresis, to positioning of

hematuresis, and to master the category of uroclepsia.

2. To master the relationship of various symptoms with diseases about urinary and male reproductive system.

3. To understand indications and notifications for instrumental examination and contrast examination of urinary surgery.

4. To understand cardinal symptom and feature of diseases about urinary and male reproductive system.

Teaching hours

Lecture: 1 class hours.

Course contents

1. Cardinal symptoms of diseases about urinary and male reproductive system: frequent micturition, urgent urination, dysuria, uroschesis, hematuresis, enuresis, chyluria, crystalluria, and sexual dysfunction, etc.

2. Examination of diseases about urinary and male reproductive system: physical examination, laboratory examination, instrumental examination, imageology examination.

Practical

1. Case demonstration: Access the disease history and make examination of urinary and male reproductive system.

2. Introduce commonly used equipment and film reading method of urinary surgery.

Time required: 0.5 class hours.

Chapter 46 Congenital deformity of Urinary and Male Reproductive System

Aims and Requirements

1. To master etiology, diagnosis and treatment of cryptorchid.

2. To master dorsal prepucotomy and manual reduction maneuver of paraphimosis.

3. To understand etiology and pathology, classification, diagnosis and treatment principle of hypospadias.

4. To understand causes for various congenital deformity of urinary surgery.

5. To understand symptom, diagnosis and treatment principle of polycystic kidney, ectopic kidney and ectopic urethral orifice, etc.

Teaching hours

Lecture: 1 class hours.

Course contents

1. Etiology and pathology, parting, diagnosis and treatment principle for hypospadias.

2. Etiology, diagnosis and treatment for cryptorchid.

3. Diagnosis and treatment for phimosis.

Practical

Case demonstration: take disease history and make examination of hypospadias.

Time required: 0.5 class hours.

Chapter 47 Injury of Urinary System

Aims and Requirements

1. To master etiology, pathology, clinical manifestation, diagnosis, differential

diagnosis and treatment principle for renal injury.

2. To master etiology, pathology, clinical manifestation, diagnosis, differential diagnosis and treatment principle for bladder injury.

3. To understand etiology, pathology, clinical manifestation, diagnosis, and emergency treatment principle for urethral injury.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Introduction and type of urinary system trauma.

2. Etiology, pathology, clinical manifestation, diagnosis, non-operative treatment and operative indication.

3. Illustrate the relationship between urethral injury and urinary extravasation based on the local anatomy.

4. Diagnosis and treatment principle for urethral injury.

5. Prevention for urethrostenosis.

Practical

Case demonstration: illustrate disease history, physical sign, x-ray examination, and discuss treatment process.

Time required: 0.5 class hours.

Chapter 48 Urinary and Male Reproductive System Infection

Aims and Requirements

1. To master common pathogenic bacterium and pathogenesis for urinary system infection.

2. To master etiology, clinical manifestation, diagnosis and treatment for prostatitis.

3. To master etiology, clinical manifestation, diagnosis, differential diagnosis and treatment for epididymitis.

4. To understand etiology, clinical manifestation, diagnosis, differential diagnosis and treatment for acute pyelonephritis.

5. To understand etiology, clinical manifestation, diagnosis, differential diagnosis and treatment for acute cystitis.

6. To understand oncome situation and treatment principle of urinary and male reproductive system infection.

Teaching hours

Lecture: 3 class hours.

Course contents

1. Etiology, approach, symptom and diagnosis for kidney infection.

2. Symptom, diagnosis and comprehensive treatment for prostatitis.

3. Diagnosis and treatment for acute and chronic epididymitis.

Practical

Case demonstration: classifications, symptoms, diagnosis, treatment principle for kidney, prostate and epididymis infection.

Time required: 0.5 class hours.

Chapter 49 Genitourinary Tuberculosis

Aims and Requirements

1. To master the essentials of diagnosis for genitourinary tuberculosis.
2. To understand the etiology, pathology of genitourinary tuberculosis.
3. To understand the indications for surgery for genitourinary tuberculosis.

Teaching hours

Lecture: 1 class hours.

Course contents

1. The essentials of diagnosis of genitourinary tuberculosis.
2. The etiology, pathology of genitourinary tuberculosis.
3. The indication for surgery for genitourinary tuberculosis.

Practical

Case demonstration: Diagnosis and principles of treatment for renal tuberculosis.

Time required: 0.5 class hours.

Chapter 50 Obstruction of Urinary tract

Aims and Requirements

1. To master etiology, pathology, clinical manifestation, diagnosis, differential diagnosis and treatment principle for hyperplasia of prostate.
2. To master mutual relationship of inflection, calculus with obstruction.
3. To master etiology, diagnosis and treatment principle for hydronephrosis.
4. To master etiology and treatment principle for acute urinary retention.
5. To understand pathophysiological changes of urinary system caused by obstruction.
6. To understand common obstruction reason and treatment principle.
7. To understand etiology and treatment principle for chronic urine retention.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Etiology, pathology, clinical manifestation, diagnosis and treatment principle for kidney, ureter, bladder obstruction.
2. Etiology and treatment for acute urinary retention.
3. Etiology, pathology, clinical manifestation, differential diagnosis and operative indications for hyperplasia of prostate.

Practical

Case demonstration: hyperplasia of prostate, discuss its clinical indications and treatment principles.

Time required: 0.5 class hours.

Chapter 51 Urinary Stone Disease

Aims and Requirements

1. To master clinical manifestation, diagnosis, differential diagnosis, treatment principle and prevention of Urinary Stone Disease.

2. To understand formation mechanism of urinary calculus and common urinary components and features.

3. To understand pathological change caused by urolithiasis.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Etiology of Urolithiasis (features of adult and children calculus), component and feature of urolithiasis, pathological change caused by urolithiasis, prevention of urolithiasis.

2. Clinical manifestation, diagnosis, differential diagnosis, treatment, operative indication, operative method and extracorporeal shock wave lithotripsy of kidney and ureteral calculus.

3. Clinical manifestation, diagnosis and operative method of bladder and urethral calculus.

Practical

Case demonstration: read X-ray examination of all parts of urinary tract.

Time required: 1 class hour.

Chapter 52 Tumor of Urinary and Male Reproductive System

Aims and Requirements

1. To master pathology, clinical manifestation, diagnosis and treatment principle of bladder tumor.

2. To master pathology, clinical manifestation, diagnosis and treatment principle of prostate cancer.

3. To master pathology, clinical manifestation, diagnosis, differential diagnosis and treatment principle of renal carcinoma, nephroblastoma, carcinoma of renal pelvis.

4. To understand pathology, clinical manifestation, diagnosis, and treatment principle of testiculoma.

5. To understand pathology, clinical manifestation, diagnosis, and treatment of carcinoma of penis.

Teaching hours

Lecture: 3 class hours.

Course contents

1. Introduction of urogenital system tumors. Pathological character, route of metastasis, clinical manifestation, imaging tests, differential diagnosis, operative treatment principle and radiation and chemotherapy evaluation of renal carcinoma, nephroblastoma, carcinoma of renal pelvis.

2. Pathology of bladder tumor. Diagnosis of bladder tumor: exfoliative urine cytology, cystoscopy, biopsy, bladder receives diagnosis, urography. Treatment principle of bladder tumor at various stages.

3. Pathology, clinical manifestation, diagnosis, and treatment of testiculoma, carcinoma of penis and prostatic cancer.

Practical

Case demonstration: bladder tumor.

Time required: 1 class hour.

Chapter 53 Varicocele and Hydrocele

Aims and Requirements

1. To master clinical manifestation, diagnosis of varicocele and hydrocele.
2. To master clinical treatment principle of varicocele and hydrocele.

Teaching hours

Lecture: 1 class hours.

Course contents

1. Introduce the anatomical structure of spermatic vein, and analysis of the causes of varicocele. To explain the clinical manifestations of varicocele, diagnostic criteria, varicocele drug treatment and surgical treatment.

2. According to the location of the sheath-shaped, Hydrocele can be divided into five types. Introduce the pathogenesis and clinical manifestations of hydrocele, introduce other diseases with the differential diagnosis and treatment of hydrocele.

Practical

Case demonstration: varicocele and hydrocele.

Time required: 0.5 class hours.

Chapter 54 Disease of adrenal gland

Aims and Requirements

1. To master clinical manifestation, diagnosis of adrenal gland disease.
2. To master clinical treatment principle of adrenal gland disease.

Teaching hours

Lecture: 1 class hours.

Course contents

1. Introduce the anatomical structure of adrenal gland, explain the physiological function of the adrenal gland, secretion of hormones and the functions of related hormones.

2. Introduce the different types of adrenal gland disease, cirrhosis, primary hyperaldosteronism, pheochromocytoma, etc., to explain the clinical manifestations complications and treatment of adrenal disease.

Practical

Case demonstration: cirrhosis, primary hyperaldosteronism, pheochromocytoma.

Time required: 0.5 class hours.

Chapter 55 Male sexual dysfunction

Aims and Requirements

1. To master clinical manifestation, diagnosis of male sexual dysfunction.
2. To master clinical treatment principle of male sexual dysfunction.

Teaching hours

Lecture: 1 class hours.

Course contents

1. Introduce the anatomical structure of male genitalia, explain the process of male sexual impulses.

2. Introduce the type of male sexual dysfunction, erectile dysfunction, premature ejaculation, etc., to explain clinical diagnosis standards and treatment of erectile dysfunction, premature ejaculation.

Practical

none.

Orthopaedics

OBJECTIVE

Knowledge

At the end of the teaching course, the medical students should know about the commonly encountered conditions in orthopaedics pertaining to their diagnostic features, basic patholophysiological aspect and the general and basic management strategies. It is expected that the students would learn basic skills such as application of splints, skin and skeletal traction, as well as plaster slab and casts. The medical students should know the maneuvers for reduction of common fractures and dislocations such as Colles'fracture, supracondylar fracture of the humerus, dislocation of the shoulder, elbow and hip etc. Routine procedures for the management of common traumatic diseases should be mastered by the students.

Teaching and Learning Methods.

Lectures, Clinical practical.

RECOMMENDED REFERENCE BOOKS

Bruce D Browner, Jesse B Jupiter, Alan M Levine, et al. 2003. Skeletal Trauma [M]. 3rd ed. Philadelphia: WB Saunders.

David L Hamblen, Hamish Simpson. 2010. Adams's Outline of Orthopaedics [M]. 14th ed. New York: Churchill Livingstone, Elsevier Inc.

Frederick M Azar, James H Beaty, S Terry Canale. 2017. Campbell's Operative Orthopedics [M]. 13th ed. Philadelphia: Elsevier Inc.

Robert H Fitzgerald, Jr. Herbert Kaufer, Arthur L Malkani. 2002. Orthopaedics [M]. Beijing: People's Health Press.

SCHEDULE TABLE

NO.	Course Contents	Hours of Lecture	Hours of Self-study	Hours of Clinical Practical
56	Physical examination of the musculoskeletal system	1		1
57	Deformities of the musculoskeletal system	2		0.5
58	General consideration of fractures	2		1
59	Fracture and dislocation of the upper extremities	2		0.5
60	Hand injury	2		0.5
61	Fracture and articular injury lower extremities	2		0.5
62	Fractures in the spine (along with spinal cord injury)	1.5		1
63	Fractures in pelvis	0.5		
64	Peripheral nerve injury	1		0.5
65	Chronic injury of the musculoskeletal system	1		0.5
67	Degenerative diseases of the cervical and lumbar spine	3		1
68	Septic infection of bones and joints	2		0.5
69	Tuberculosis of bones and joints	2		0.5
70	Nonsuppurative arthritis	2		0.5
71	Bone tumors	3		0.5
	Total	27		9

COURSE CONTENTS

Theory

Chapter 56 Physical examination of the musculoskeletal system

Aims and Requirements

1. To master the general methods and clinical significance of physical examination of the musculoskeletal system.

2. To master some special examination skills for the musculoskeletal system.

3. Learn basic skills for the physical examination of the musculoskeletal system.

Teaching hours

Lecture: 1 class hour.

Course contents

1. Principles of physical examination for the musculoskeletal system.

2. Basic methods for PE: inspection, palpation, movement and measurement.

3. The clinical significance of the PE for major joints of the extremities and the spine.

4. The neurological examination of the musculoskeletal system, including skin sensation, muscle strength, reflex and pathological sign.

Practical

Practical basic methods for PE: inspection, palpation, movement and measurement.

Practical the PE for major joints of the extremities and the spine.

Practical the neurological examination of the musculoskeletal system.

Time required: 1 hour.

Chapter 57 Deformities of the musculoskeletal system

Aims and Requirements

1. Know the clinical features and diagnosis of congenital dislocation of the hip and idiopathic scoliosis.

2. Know the clinical features and diagnosis of adolescent idiopathic scoliosis.

Teaching hours

Lecture: 2 class hours.

Course contents

1. The clinical features and diagnosis of congenital dislocation of the hip and idiopathic scoliosis.

2. The clinical features and diagnosis of adolescent idiopathic scoliosis.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Time required: 0.5 hour.

Chapter 58 General consideration of fractures

Aims and Requirements

1. To master the knowledge of definition, etiology, classification, clinical features, healing process, common complication, and principles of treatment, of fractures.

2. Be familiar with the emergency care of a fracture.

3. Know the special treatment for an open fracture. Be familiar with the main etiology and principles of treatment of the nonunion, delayed union and malunion.

4. Be familiar with the main points of traction, splint and plaster fixation.

Teaching hours

Lecture: 2 class hours.

Course contents

1. The definition, etiology, classification and the factors requiring replacement of the fragment of the fracture.

2. The healing process of a fracture, the main factors that influence the healing of a fracture.

3. The emergency care and treatment of a fracture.

4. The principles of treatment for an open fracture.

5. The basic principles of treatment for the fracture, the standards for the reduction, the indications for a closed reduction and ORIF and the standards for the clinical healing of a fracture.

Practical

Introduce the factors requiring replacement of the fragment of the fracture based on typical cases and X-ray films.

Practical the manipulations of traction, splint and plaster fixation.

Time required: 1 hour.

Chapter 59 Fracture and dislocation of the upper extremities

Aims and Requirements

1. To master the characteristic displacement, diagnosis and principle for the treatment of the fractures of the supracondylar humerus and distal radius.

2. To master the complications of supracondylar humerus.

3. Be familiar with characteristic displacement, diagnosis and treatment principles of a clavicle fracture, supracondylar humerus and forearms.

4. To master the classification, clinical manifestation, treatment of joint dislocation, especially for the shoulder joint.

Teaching hours

Lecture: 2 class hours.

Course contents

1. The classification and main points of a closed reduction of the fracture of the clavicle and fixation of an "8" shaped bandage.

2. The classification, characteristic displacement and therapeutic principles of the fracture of the diaphyseal humerus.

3. The classification of the supracondylar fractures of the humerus. The clinical features and principles for treatment of a supracondylar fracture of humerus coupled with the injury of the arteria brachialis.

4. The main point for closed reduction of a fracture of the forearms and fixation with splint.

5. The classification, characteristic displacement, clinical features, main points for closed reduction and fixation with splint of a fracture in distal radius.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Know the method of fixation for fractures and dislocations in the upper extremities.

Practical the manipulation of reduction of Colle's fracture and shoulder dislocation.

Time required: 0.5 hour.

Chapter 60 Hand injury

Aims and Requirements

1. To master the principles of treatment for hand injury.

2. Be familiar with the physical examination and evaluation of hand injury.

Teaching hours

Lecture: 2 class hours.

Course contents

1. The classification of common hand injuries.

2. The basic examination, diagnosis and therapeutic principles for hand injuries.

3. The treatment of the skin cutting injuries.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Practical the examination of injury of nerves and tendons.

Time required: 0.5 hour.

Chapter 61 Fracture and articular injury lower extremities

Aims and Requirements

1. To master the clinical features, therapeutic principle and prevention of the complications from femoral neck fracture and intertrochanteric fracture.

2. Be familiar with the ligamentous and meniscus injury of the knee joint.

3. Be familiar with the characteristic displacement and therapeutic principles of femoral shaft fracture.

4. Be familiar with the therapeutic principles of tibia and fibula fracture.

5. Know the etiology, clinical features and therapeutic principles of the ankle injury.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Characteristic displacement and therapeutic principles of femoral neck fracture, intertrochanteric fracture and fracture of the femoral shaft.

2. The classification and prevention of complication of femoral neck fracture and intertrochanteric fracture.

3. Ligamentous and meniscus injury of the knee joint.

4. Classification, diagnosis, complications and treatment of tibia and fibula fracture.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Practical the physical examination of knee joint.

Time required: 0.5 hour.

Chapter 62 Fractures in the spine (along with spinal cord injury)

Aims and Requirements

1. To master the principles of emergency care for spine fracture.

2. To master the classification, clinical features and therapeutic principles of spine fracture.

3. Be familiar with the pathological changes, classification, diagnosis, complications, and treatment of spinal cord injury.

4. Know the therapeutic principles for cervical spine fracture.

Teaching hours

Lecture: 1.5 class hours.

Course contents

1. The classification, clinical features and therapeutic principles for thoracic and lumbar spine fracture.

2. The diagnosis of spine fracture and dislocation complicated with spinal cord injury. The therapeutic principles for the complication of paralysis.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Practical the emergency transportation of patients with spinal injury.

Practical the neurological examination of patients.

Time required: 1 hour.

Chapter 63 Fractures in pelvis

Aims and Requirements

Be familiar with the classification, clinical manifestations, complications and treatment of pelvic fracture.

Teaching hours

Lecture: 0.5 class hours.

Course contents

The classification, clinical features, complications and therapeutic principles for pelvis fracture.

Practical

No.

Chapter 64 Peripheral nerve injury

Aims and Requirements

Be familiar with the clinical features, diagnosis and therapeutic principles for peripheral nerve injury.

Teaching hours

Lecture: 1 class hours.

Course contents

1. The pathology and classification of peripheral nerve injury.

2. The clinical features, diagnosis and therapeutic principles of medianus, radialis and ulnaris nerve injury during the lecture of fracture of the extremities.

practical

Demonstrate the typical cases with diagnosis and treatment.

Practical the neurological examination of medianus, radialis and ulnaris nerve injury.

Time required: 0.5 hour.

Chapter 65 Chronic injury of the musculoskeletal system

Aims and Requirements

Know the common diagnosis and therapeutic principles for chronic injury of the musculoskeletal system.

Teaching hours

Lecture: 1 class hour.

Course contents

The clinical features and treatment of the lateral epicondylitis, stenosing tenosynovitis, frozen shoulder.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Time required: 0.5 hour.

Chapter 67 Degenerative diseases of the cervical and lumbar spine

Aims and Requirements

1. To master the classification, clinical features, diagnosis, differential diagnosis and therapeutic principles for lumber disc herniation.

2. Be familiar with the etiology, pathology features, diagnosis and therapeutic principles for the cervical spondylosis.

Teaching hours

Lecture: 3 class hours.

Course contents

1. The classification, clinical features, diagnosis, differential diagnosis of lumbar disc herniation.

2. The therapeutic principles for lumber disc herniation.

3. The etiology, pathology features, diagnosis and therapeutic principles of the cervical spondylosis.

Practical

Demonstrate the typical cases with physical examination and images.

Practical the physical examination of lumbar disc herniation.

Practical the physical examination of cervical spondylosis.

Time required: 1 hour.

Chapter 68 Septic infection of bones and joints

Aims and Requirements

1. To master the pathological features, early diagnosis and early treatment of the acute and chronic septic osteomyelitis.

2. Be familiar with the etiology, therapeutic principle and indication of the surgical method for septic arthritis.

Teaching hours

Lecture: 2 class hours.

Course contents

1. The pathological features, early diagnosis and early treatment of acute hematogenic osteomyelitis.

2. The etiology, therapeutic principles and indications of surgical methods for chronic septic myelitis.

3. The etiology, diagnosis, and therapeutic principles for septic arthritis.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Time required: 0.5 hour.

Chapter 69 Tuberculosis of bones and joints

Aims and Requirements

1. To master the pathological process, diagnosis of tuberculosis of bones and joints.

2. To master the clinical manifestation, therapeutic principles, and surgical indications for s tuberculosis of bones and joints.

3. Be familiar with the classification of spine tuberculosis and the features of cold abscess.

4. Know the clinical manifestations and diagnosis of tuberculosis of the hip and knee joint.

Teaching hours

Lecture: 2 class hours.

Course contents

1. The pathological process, diagnosis, therapeutic principles of tuberculosis of bones and joints.

2. The classification of spine tuberculosis and the features of cold abscess.

3. The clinical manifestation, therapeutic principles, and surgical indications for spine tuberculosis.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Time required: 0.5 hour.

Chapter 70 Nonsuppurative arthritis

Aims and Requirements

1. Be familiar with the clinical features, diagnosis, and therapeutic principles of osteoarthritis and rheumatoid arthritis.

2. Know clinical features of ankylosing spondylitis and haemophilia-associated arthritis.

Teaching hours

Lecture: 2 class hours.

Course contents

1. Clinical features, diagnosis, and therapeutic principles of osteoarthritis.

2. Clinical features, diagnosis, and therapeutic principles of rheumatoid arthritis.

3. Clinical features of ankylosing spondylitis.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Know about the surgical procedure of TKA.

Time required: 0.5 hour.

Chapter 71 Bone tumors

Aims and Requirements

1. To master the classification and principles for the surgical stages of musculoskeletal system tumors.

2. Be familiar with the clinical and imageology diagnosis, and the therapeutic principles for osteochondroma, giant cell tumor, and osteosarcoma.

Teaching hours

Lecture: 3 class hours.

Course contents

1. General consideration of bone tumors: classification and principles for the surgical stages of musculoskeletal system tumors.

2. Clinical features, diagnosis, and therapeutic principles of benign bone tumors.
3. Clinical features, diagnosis, and therapeutic principles of giant cell tumors.
4. Clinical features, diagnosis, and therapeutic principles of malignant bone tumors.
5. Clinical features, diagnosis, and therapeutic principles of metastatic tumors.

Practical

Demonstrate the typical cases with diagnosis and treatment.

Practical the readings of X rays for typical cases.

Time required: 0.5 hour.

OBSTETRICS AND GYNECOLOGY

妇产科学

Chief Editors（主编）

Xue Fengxia（薛凤霞） Tianjin Medical University（天津医科大学）
Ma Yuyan（马玉燕） Shandong University（山东大学）
Cao Yunxia（曹云霞） Anhui Medical University（安徽医科大学）

Deputy Chief Editors（副主编）

Cui Manhua（崔满华） Jilin University（吉林大学）
Li Li（李力） Guangxi Medical University（广西医科大学）
Li Xiaotian（李笑天） Fudan University（复旦大学）
Wang Shixuan（王世宣） Huazhong University of Science and Technology（华中科技大学）
Xi Mingrong（郄明蓉） Sichuan University（四川大学）
Zhang Shulan（张淑兰） China Medical University（中国医科大学）

Editors（编者）（按姓氏拼音排序）

Cao Yunxia（曹云霞） Anhui Medical University（安徽医科大学）
Chen Yan（陈燕） North China University of Science and Technology（华北理工大学）
Cheng Xiaodong（程晓东） Zhejiang University（浙江大学）
Cui Manhua（崔满华） Jilin University（吉林大学）
Du Xue（杜雪） Tianjin Medical University（天津医科大学）
Fan Aiping（范爱萍） Tianjin Medical University（天津医科大学）
Li Li（李力） Guangxi Medical University（广西医科大学）
Li Xiaotian（李笑天） Fudan University（复旦大学）
Li Xuelan（李雪兰） Xi'an Jiaotong University（西安交通大学）
Liu Guoyan（刘国艳） Tianjin Medical University（天津医科大学）
Liu Yuzhen（刘玉珍） Weifang Medical University（潍坊医学院）
Lu Qun（鹿群） Peking University（北京大学）
Ma Yuyan（马玉燕） Shandong University（山东大学）
Wang Shixuan（王世宣） Huazhong University of Science and Technology（华中科技大学）
Wang Yingmei（王颖梅） Tianjin Medical University（天津医科大学）
Xi Mingrong（郄明蓉） Sichuan University（四川大学）
Xing Aiyun（邢爱耘） Sichuan University（四川大学）

Xu Qian（徐茜） Tianjin Medical University（天津医科大学）
Xue Fengxia（薛凤霞） Tianjin Medical University（天津医科大学）
Yang Lihua（杨丽华） Kunming Medical University（昆明医科大学）
Yang Zhijun（阳志军） Guangxi Medical University（广西医科大学）
Zhang Chao（张超） Peking University（北京大学）
Zhang Huiying（张慧英） Tianjin Medical University（天津医科大学）
Zhang Shulan（张淑兰） China Medical University（中国医科大学）
Zhang Yuquan（张玉泉） Nantong University（南通大学）
Zhao Dong（赵栋） Tongji University（同济大学）

Course Description

The course introduces basic knowledge sciences of Obstetrics and Gynecology, and various disorders in Obstetrics and Gynecology. The subject of Obstetrics and Gynecology is a medical and surgical speciality dealing with the management of pregnancy and childbirth as well as the health of the female reproductive system. This course will teach the student the basic knowledge and skills required to manage normal and abnormal pregnancy, childbirth as well as to manage common gynecological problems.

The main goal of curriculum is to enable the undergraduate students to acquire the knowledge, skills and attitudes in the discipline of Obstetrics and Gynecology. On completion of the course the students will have the ability to facilitate the understanding of the approach to clinical problem-solving in obstetrical and gynecologic management as well as to master basic obstetrical and gynecological surgery procedures. Furthermore, the course is supposed to encourage the continued development of the medical student's professional attitude and behavior within obstetrics and gynecology settings.

Objectives

KNOWLEDGE

At the end of the course, the students shall be able to:

1. To introduce the anatomy and physiology of female reproductive organs.
2. To state the physiology of pregnancy and describe the process of human labor.
3. To make diagnosis and organize management of antenatal, intranatal and postnatal period of normal and abnormal pregnancy.
4. To provide adequate care and apply methods of management of common gynecological problems and emergencies.
5. To provide counseling and delivery of fertility regulation methods.
6. To acquire knowledge of methods of termination of pregnancy.
7. To Apply knowledge of contraception.

At the end of the course, the students shall be able to practice. Proper history taking and clinical examination, the basic procedures like speculum examination, bimanual examination, Pap Smear, D & C, IUD insertion, external pelvimetry, four maneuvers of Leopold in the simulation hospital, posting in wards, operation theaters, labor room and family planning clinics. To observe normal deliveries, forceps and cesarean section, and watch the process of procedures like ligations, abdominal or laparoscopic hysterectomy, salpingo-oophorectomy.

Teaching and Learning Methods

Theory: Teaching Obstetrics and Gynecology to undergraduate medical student is provided with the help of lectures, self-study, multi-media, human model and clinical practice.

Practicals: Practical training asks for students to perform pelvic exams, assist in deliveries and surgery, perform outpatient procedures, write chart notes, and give patient presentations, as well as participate in all of the teaching conferences of their particular institution.

Recommended Textbooks

F Gary C, Kenneth J, Steven L. 2014. Williams Obstetrics [M]. 24th ed. New York: McGraw Hill Education Medical.

Jonathan S, Berek. 2008. Berek & Novak's Gynecology [M].14th ed. Philadelphia: Lippincott williams and Wilkins.

Xue Fengxia, Ma Yuyan (薛凤霞，马玉燕). 2016. Obstetrics and Gynecology [M]. Beijing: Tsinghua University Press.

Schedule Table

Chapter	Contents	Hours
1	Anatomy	3
2	Reproductive physiology	3
3	Conception, fertilization and implantation, Fetal growth, placenta and umbilical	4
4	Physiological changes in pregnancy and antenatal cares	6
5	Normal labor, Puerperium, Essential of normal newborn assessment and care	5
6	Dystocia and cephalopelvic disproportion	4

Continued

Chapter	Contents	Hours
7	Hypertensive disorders in pregnancy	2
8	Diabetes mellitus and pregnancy	2
9	Hematological Disorders in pregnancy, Thyroid dysfunction with pregnancy	2
10	Cardiac disease in pregnancy, Hepatitis in pregnancy	2
11	Late pregnancy complications	4
12	Third trimester bleeding	2
13	Disproportionate feta growth	2
14	Postpartum hemorrhage, Infection during pregnancy	2
15	Gynecological infection and STD, Pelvic inflammatory disease	2
16	First trimester vaginal bleeding, recurrent pregnancy loss	2
17	Benign disorders of the uterine cervix	2
18	Benign disorders of uterine corpus	2
19	Premalignant and malignant disorders of the uterine corpus	2
20	Premalignant and malignant disorders of the uterine cervix	3
21	Benign adnexal masses	2
22	Premalignant and malignant disorders of ovaries and fallopian tubes	2
23	Gestational trophoblastic diseases	2
24	Endometriosis	2
25	Amenorrhea, Abnormal uterine bleeding, Polycystic ovarian syndrome	4
26	Pelvic organ prolapsed, Urinary incontinence	2
27	Infertility	2
28	Contraception	4
29	Gynecological history and clinical examination	6
30	Operative Obstetrics	6
31	Review	2
	Total	90

Course Contents

THEORY

Chapter 1 Anatomy

1. Introduction to the Anatomy of Female Genital Tract.

(1) Anatomy of external genitalia: vulva.

(2) Anatomy of internal genital organs: vagina; uterus; fallopian tubes and ovaries.

2. Introduction the Related Structure of Female Genital Tract.

(1) Female urological system: ureter; urinary bladder; urethra.

(2) Lower gastrointestinal tract: sigmoid colon; rectum; anal canal.

3. Introduction to the Pelvic Floor Structure and Nerve Supply.

(1) The pelvic floor includes all of the structure closing the pelvic outlet from the skin inferiorly to the peritoneum superiorly.

4. Introduction to the Ligaments of Uterus.

(1) Broad ligaments; round ligament; ligaments from the pelvic fascia (cardinal ligament; pubocervical ligament; uterosacral ligament).

5. Introduction to the Blood Vessels; Lymphatic Drainage and Nerves of Pelvis.

(1) The blood vessels of pelvis: uterine arteries; vaginal arteries; internal pudendal artery; superficial and deep external; pudendal arteries; ovarian artery; pelvic veins.

(2) The lymphatic drainage of pelvis.

(3) The pelvic nerves: somatic and sympathetic nerves.

6. Introduction the Anterior Abdominal Wall.

(1) The tissues of the anterior abdominal wall: skin; superficial fascia; muscle layer; transversalis fascia andperitoneum.

(2) The nerve and vessels of the anterior abdominal wall.

7. Introduction to the Pelvic Skeleton.

(1) General feature of the bony pelvis.

(2) The diameters and obstetrical significance of the brim; the cavity and the outlet of pelvis.

(3) Pelvic shapes.

Chapter 2 Reproductive Physiology

1. Anatomy and histology of the ovary.
2. Growth, development and function of follicle.
3. The human menstrual cycle.
4. Biology of estrogen and progesterone.
5. Fertilization, early embryogenesis, implantation and placentation.
6. Maternal physiology during pregnancy.
7. Parturition.
8. Mammogenesis and lactation.

Chapter 3 Conception, Fertilization and Implantation

1. Oogenesis: the process involved in development of mature ovum is called oogenesis. How the maturation of oocyte take place.

2. Fertilization: where fertilization take place, the process of fertilization.

3. Cleavage of embryo: how the morula and blastocyst formed.

4. Implantations of the blastocyst: when the implantations happen. What are the three stages for implantation, the three layers that trophoblast has differentiation into.

5. Development of villous system: how the primary stem villi, secondary villi,

tertiary villi formed.

6. Fetal and maternal blood circulation in the mature placenta: placental circulation consist of uteroplacental and fetoplacental circulation.

Chapter 4 Fetal Growth, Placenta and Umbilical

1. Introduction to prenatal development of fetus: three periods including ovular period or germinal period, embryonic period and fetal period.

2. Introduction to fetal physiology and organ system: hemotologic system, respiratory system, urinary and digestive system, endocrine system, fetal circulation, fetal nervous system, functions of placenta.

3. Introduction to the development of fetal membrane, amniotic fluid and umbilical cord.

Chapter 5 Embryology

1. General Consideration of Embryology.

(1) Female urinary and genital tract are closely related anatomically as well embryologically, which are derived from primitive mesoderm and endoderm.

(2) Development of female urinary system (kidney, bladder and urethra), genital system (müllerian duct, gonadal differentiation-ovary), genital tract differentiation and the external genitalia development.

(3) Etiology: malformation and maldevelopment of genital tract, urinary tract anomals.

2. Female Genital Tract Anomalies.

(1) Disorders of development of müllerian system: etiology, classification of müllerian and vaginal anomalies, clinical presentation and investigation.

3. Management of Specific Anomalies.

(1) Imperforate hymen.

(2) Vaginal aplasia.

(3) Disorder of uterus.

Chapter 6 Gynecological History and Clinical Examination

1. History taking: the character of gynecological history, how to record the menstrual period.

2. Physical examination: how to do pelvic examination, what is shifting dullness, how to do bimanual examination, the importance of pelvic examination.

Chapter 7 Pediatric and Adolescent Gynecology

1. Common Problems in Pediatric Gynecology.

(1) Diagnosis and management of labial adhesion, vulvovaginitis, genital trauma, ovarian tumors, vaginal bleeding and premature thelarche.

2. Puberty.

(1) Prepubertal period: adrenarche, decreasing repression of the gonadostat and alteration and amplification of GnRH gonadotropins and gonadotropins ovarian steroid interaction.

(2) Puberty period: stages of pubertal development in girls (tanner staging and age limit for pubertal changes).

3. Aberrations of Pubertal Development.

(1) Delayed or interrupted puberty.

(2) Precocious puberty: GnRH-dependent precocious puberty and GnRH independent precocious puberty; workup of patients with precocious puberty.

(3) Growth problem in normal adolescents.

Chapter 8 Gynecological Infection and STD

1. Introduction to Defense Mechanisms of Genital Tract.

(1) Different defense mechanisms according to anatomic structures: vulva, vagina, cervix, uterus.

(2) Variations in the efficiency of defense mechanism: age variation, menstrual cycle, during puerperium.

2. Introduction to Sexually Transmitted Disease (STD).

(1) Definition and routs of transmission: sexual contact, transplacental spread, birth canal, lactation.

(2) Types of common STDs.

3. Vaginitis.

(1) Types of vaginitis: mainly introducing bacterial vaginosis (BV), vulvovaginal candidiasis (VVC) (including recurrent vulvovaginal candidiasis, RVVC), trichomonas vaginitis (TV), inflammatory vaginitis, atrophic vaginitis.

(2) Definition, pathogenesis and risk factors.

(3) Diagnosis: Amsel'sdiagnostic criteria and gram stain for BV; pseudohyphae of candida in preparation with 10% KOH solution and culture positive for VVC; trichomonas vaginalis found on wet saline mount microscopy for TV; symptoms, signs for inflammatory vaginitis and atrophic vaginitis.

(4) Treatment: anti-anaerobic agents for BV; antifungal agents for VVC, specifically different regimen for RVVC, severe VVC, nonalbicans VVC and VVC during pregnancy; metronidazole or tinidazole for TV; supplementary hormonal therapy for inflammatory vaginitis and atrophic vaginitis.

4. Cervicitis.

(1) Diagnosis: either or both signs of characterize cervicitis; microscopy and gram staining; endocervical swab for bacteriological identification.

(2) Treatment: not necessary for an asymptomatic patient with test negative for STD; antibiotics for gonococci or chlamydial infection; surgical procedures.

(3) Pathology, symptoms and differential diagnosis of chronic cervicitis.

(4) Prevention.

5. Introduction to Pelvic Inflammatory Disease (PID).

(1) Definition and pathogenesis.

(2) Risk factors: younger women and teens, in lower socioeconomic status, and having high risk sexual behavior, among IUD users, and in women with a history of prior episode of PID.

(3) Diagnosis:

1) Silent PID: results from multiple or continuous low genital tract infection in

asymptomatic women.

2) PID: minimum criteria; additional criteria; elaborate criteria.

(4) Differential diagnosis.

(5) Treatment: empirical, broad spectrum coverage of likely pathogens to eradicate bacteria, relieve symptoms, and prevent sequelae; surgery.

(6) Potential long-term complications of PID.

6. Genital Tract Tuberculosis.

(1) Pathogen, pathogenesis and mode of spread.

(2) Pathology of pelvic organ.

(3) Diagnosis: symptoms and signs; laboratory findings; X-ray finding; chest X-ray film; hysterosalpingography; laparoscopy.

(4) Differential diagnosis: pyogenic tubo-ovarian mass; pelvic endometriosis; adherent ovarian cyst; chronic ectopic pregnancy; chronic mycotic infection.

(5) Treatment: medical measures; surgical measures.

7. Postoperative Infection.

(1) Surgical site infection (SSI) classification: incisional space (superficial, deep); organ space.

(2) Diagnosis: an oral temperature of $>38°C$ on two or more occasions, four or more hours apart and 24 or more hours following surgery.

(3) Specific postoperative infections: vaginal cuff cellulitis; adnexal infection; ovarian abscess or infected pelvic hematoma; pelvic abscess; abdominal site infection.

(4) Treatment: drainage and local care; wet to dry dressings; mechanical debridement; secondary closure; antibiotic therapy.

(5) Prevention of SSI.

8. Introduction to Some Common STDs.

(1) Pathogens of common STDs: herpes simplex virus (HSV); chancroid; granuloma inguinale (donovanosis); lymphogranuloma venereum (LGV); syphilis; external genital warts; human immunodeficiency virus (HIV) infection.

(2) Symptoms.

(3) Diagnosis: tissue culture, PCR testing, the ELISA or immunofluorescent method, physical examination for HSV; four criteria for chancroid; donovan bodies for granuloma inguinale; chlamydial testing for LGV; antibody testing, serologic non-treponemal test, treponemal specific tests for syphilis; clinical inspection for external genital warts; antibody test and PCR for HIV.

(4) Treatment: local treatment; antibiotic treatment; antiretroviral treatment.

Chapter 9 Amenorrhea

1. Introduction to Amenorrhea.

(1) Definition of amenorrhea.

(2) Basic factors involved in the normal menstruation.

(3) Cause of physiologic amenorrhea.

2. Pathological Amenorrhea.

(1) Classification of pathological amenorrhea: anatomic disorders, endocrine

disorders.

(2) Classification and the etiology of anatomic disorders: inherited anatomic disorders and acquired disorder of the outflow.

(3) Classification of endocrine disorders: hypergonadotropic hypogonadism (premature ovarian failure), hypogonadotropic hypogonadism.

(4) Premature ovarian failure: etiology, clinical presentation and classification.

(5) Classification and the etiology of hypogonadotropic hypogonadism: disorders of the hypothalamus, disorders of anterior pituitary gland.

3. Evaluation: history-taking, physical examination, laboratory testing and investigation of specific disorders.

4. Treatment: surgical correction; estrogen replacement; treatment of polycystic ovaries; patient education.

Chapter 10 Abnormal Uterine Bleeding

1. Abnormal uterine bleeding.

(1) Patterns: menorrhagia, hypomenorrhea, intermenstrual bleeding, polymenorrhea, oligomenorrhea, menometrorrhagia, postmenopausal bleeding.

(2) Incidence: abnormal uterine bleeding affects reproductive aged women and perimenopausal women the most.

(3) Causes.

(4) Methods: history, physical examination, laboratory test, cytologic examination, pelvic ultrasound scan, endometrial biopsy, hysteroscopy and dilatation and curettage.

(5) Management: hormone preparation is the first choice if pathologic cause, cancer and accurate life-threatening hemorrhage can be excluded.

2. Dysfunctional uterine bleeding.

(1) A diagnosis of exclusion; as a result of anovulation or oligoanovulation; occuring most commonly in adolescents and perimenopausal women.

(2) Major causes of anovulation.

(3) The etiology of ovulatory dysfunctional uterine bleeding.

(4) Treatment: Anovulatory bleeding: progestin therapy; women ovulating and/or want to avoid pregnancy: estrogen progestin contraceptive; maintenance therapy; estrogen therapy and risk of thromboembolism; nonspecific treatment for abnormal menstrual bleeding; oral contraceptives; surgical measures in dysfunctional uterine bleeding.

3. Postmenopausal bleeding.

(1) Definition and differential diagnosis.

(2) Incidence.

(3) Approach to diagnosis.

(4) Exogenous hormone replacement therapy.

(5) Management of patients presenting with vaginal atrophy and vaginal and vulvar lesions.

(6) Evaluation and the treatment plan of patients with benign and malignant tumors of the reproductive tract.

4. Complications of menstruation.

(1) Premenstrual syndrome.

(2) Pathogenesis.

(3) Diagnosis.

(4) Treatment: lifestyle modification, pharmacological treatment, surgical treatment and other treatment option.

5. Dysmenorrhea.

(1) Types.

(2) Pathogenesis: ovulatory cycles, increased leukotriene level, vasopressin, atosiban and psychological factors.

(3) Evaluation: symptoms, signs, investigation.

(4) Treatment: medication (indications and usage), surgical treatment.

Chapter 11 Infertility

1. General Consideration.

(1) Definition of infertility and fecundity.

(2) Classification of infertility.

(3) Epidemiology.

2. Evaluation of infertility.

(1) Timing for infertility evaluation.

(2) Guiding principles in the evaluation of infertility.

(3) New patient assessment.

3. Etiology of infertility and the psychological aspects.

4. Evaluation of male factors.

(1) Physiology of spermatogenesis.

(2) Semen Analysis: timing, requirement of the specimen, standard parameters and the meaning of different results.

(3) DNA Assays.

(4) Other tests.

(5) Postcoital test: purpose, indication, standard, value.

(6) Sperm penetration assay; sperm antibodies.

(7) Hormonal evaluation of the male: indications and the meaning of the results.

(8) Genetic testing: incidence, rationale and the implication.

(9) Testicular biopsy.

5. History and physical examination of male partner.

6. Examination of male patient.

7. Evaluation of female factor.

(1) History-taking: gynecological history, medical history, surgical history, medication and social.

(2) Examination of female patient: vital signs, weight and height.

(3) Evaluation for specific causes of infertility: ovulation, tubal and pelvic factor, cervical factor.

(4) The evaluation of ovulation: basal body temperature, pelvic ultrasonography,

ovulation predictive kits, serum progesterone, endometrial biopsy, cervical mucus.

8. Female aging and ovulatory dysfunction.

(1) Ovarian reserve: the advantages, reference value and the meaning of the level of FSH, estradiol and AMH.

(2) Clomipene citrate challenge test (CCCT): indication and the value.

(3) Ultrasound.

(4) Interpretation of test of ovarian reserve.

9. Tubal and pelvic factor evaluation.

(1) Hysterosalpingography (HSG): indication and the complications.

(2) Sonohysterogram.

(3) Laparoscopy with chemopertubation (Gold standard): interpretation, indication, advantages and the limitations.

(4) Hysteroscopy.

10. Cervical factors: cervical mucus: value and the rationale.

11. Treatment plan for infertile couple.

(1) Principles.

(2) Lifestyle therapies: environmental toxins, weight optimization, stress management.

(3) Correction of an identified cause.

(4) Diagnostic guideline in male factor infertility.

(5) Medicine used to correct the female infertility factor; the modality, side effects, indications and the rationale of each medicine.

(6) Treatment used for tubal factors.

(7) Correction of uterine factors.

(8) Treatment of peritoneal disease: endometriosis, adhesion.

(9) Correction of cervical factors.

(10) Unexplained infertility.

12. Assisted reproductive technology.

(1) Types, definition, indications and the complications.

(2) Cause of failure of IVF.

Chapter 12 Polycystic Ovarian Syndrome

1. Diagnosis criteria of polycystic ovarian syndrome.

2. Etiopathophysiology: genetic factor, gonadotropins, insulin resistance, anovulation, androgens.

3. Clinical presentation: an obese, oligomenorrhea or amenorrhea, acne and hirsutism, hyperandrogenism, infertility, pregnancy complications.

4. Diagnostic evaluations: history, physical examination, laboratory investigations, sonography.

5. Treatment: observation, lifestyle modification, combined oral contraceptive, cyclic progestin, insulin sensitizing agents, induction of ovulation, treatment of hirsutism and acne.

6. Prevent long-term risk in PCOS: type 2 diabetes, cardiovascular disease, endometrial hyperplasia and endometrial cancer.

Chapter 13 Hirsutism

1. Physiology of androgen.

(1) The major androgens: testosterone, dihydrotestosterone, androstenedione, dehydroepiandrosterone (DHEA and DHEAS).

(2) Physiological action of each type androgen and the transform of each other.

2. Causes of hirsutism: ovarian non-neoplastic causes, ovarian neoplastic cause, pregnancy related cancer, adrenal causes, iatrogenic cause.

3. Diagnosis and clinical finding: Ferriman and Gallwey scoring system.

4. Laboratory findings: testosterone, DHEAS, 17 αhydroxyprogesterone (17 OHP), TSH, the single dose overnight dexamethasone test, insulin.

5. Treatment: combined oral contraceptive pills, spironolactone, dexamethasone, flutamide, finasteride, vaniqua (eflornithine hydrochloride), GnRH agonist.

Chapter14 Menopause

1. Definition of menopause, perimenopause or menopausal transition, climacteric.

2. Endocrinology and etiopathogenesis of menopause.

3. Physical changes and clinical condition associated with menopause: reproductive tract, urinary tract, menstrual disturbance, central thermoregulation change, osteopenia and osteoporosis, sexual dysfunction, cardiovascular disease, weight gain, skin and hair changes.

4. Management of menopause: prevention, menopause hormone therapy, MHT preparation and use, contraindication to MHT, complications and risk of MHT, alternative medicine for menopause.

Chapter15 Benign Lesions of the Vulva and Vagina

1. Definition of benign lesions of the vulva and vagina.

2. Etiology: hormonal stimulation, estrogen deficiency, pregnancy, accidental or chronic trauma, infection, underlying neoplasm.

3. Diagnosis: baseline history; symptoms and signs: dilated plexus of veins, pain, pruritis, sense of heaviness, blue and asymptomatic papules, tender ulcers, chills, fever, malaise.

4. Treatment: keep the vulvar skin dry and clean, expectant management, antibiotic treatment, surgical excision biopsy, cryotherapy, laser therapy.

Chapter16 Benign Disorders of the Uterine Cervix

1. Definition of benign disorders of the uterine cervix.

2. Etiology: hormonal stimulation, pregnancy, chronic inflammation, local vascular congestion of cervical blood vessels, extensive surgical manipulation of the cervix, estrogen deficiency.

3. Diagnosis: baseline history; symptoms and signs: intermenstrual bleeding, postcoital bleeding, postmenstrual bleeding, a smooth and fingerlike projection from the cervical canal, contact bleeding.

4. Treatment: excision biopsy, medical measures, surgical measures, cautious dilatation of the cervix, culture and sensitivity test, removal of cicatrix by laser

vaporization and loop excision.

Chapter17 Benign Disorders of Uterine Corpus

1. Definition of benign disorders of uterine corpus (fibriods, adenomyosis and endometrial polyp).

2. Etiology: high estrogen, progesterone, chromosomal abnormalities, polypeptide growth factors, downward invagination of the endometrial basalis layer, metaplastic origin.

3. Diagnosis:

(1) Baseline history.

(2) Symptoms and signs: menorrhagia, metrorrhagia, dysmenorrhea, pelvic pain, pressure effect, spontaneous abortion, infertility, anemia, postmenstrual bleeding.

(3) Investigation: ultrasound examination, MRI, hysterosalpingography, hysteroscopy, laparoscopy.

4. Treatment: expectant management, uterine fibroid embolization, medical therapy, surgical measures: myomectomy, lesionectomy, hysteroscopic resection of polyp, hysterectomy.

Chapter18 Benign Adnexal Masses

1. Physiologic enlargement: the pathology, symptoms and treatment of functional cyst, corpus luteum cyst and theca lutein cyst.

2. Endometrioma: also referred to as chocolate cyst.

3. Hyperthecosis: demonstrable only by histologic examination of the excised gonad.

4. Polycystic ovarian syndrome (Stein-Leventhal syndrome).

5. Definition.

6. Pathogenesis.

7. Investigations: ultrasound, low FSH/LH ratio and raised testosterone, laparoscopy.

8. Treatment: weight loss; hirsutism: oral contraceptive pills; infertility: clomiphene, human gonadotropins; metformin and progestational agents.

9. Ovarian neoplasm.

10. Histopathological classification of ovarian tumor: epithelial tumors, sex cord stromal tumor, germ cell tumor and so on.

11. Clinical features of ovarian.

12. Investigation: ultrasound: unilocular or multilocular with a thin wall and thin septa of less than 5 mm in a multilocular cyst; pelvic X-ray abdomen; CT and MRI; tumor markers; laparoscopy; laparotomy and cytology.

13. Differential diagnosis.

14. Complications of ovarian tumor: ovarian torsion, rupture, infection.

15. Management:

(1) Expectant management: sonographic evidence of a thin walled unilocular cyst, cyst diameter less than 5 cm, no cyst enlargement during follow-up, normal serum CA 125 level.

(2) Surgical excision: any patient with an adnexal mass more than 10 cm in size.

Chapter19 Premalignant and Malignant Disorders of the Vulva and Vagina

1. Vulvar Squamous Intraepithelial Lesion (VSIL).

(1) Diagnosis: symptoms and signs, biopsy and pathologic examination.

(2) Pathology: LSIL, HSIL, differentiated-type vulvar intraepithelial lesions.

(3) Risk factors: HPV, smoking, et al.

(4) Natural history: regress or progression to invasive cancer.

(5) Management: observation, excision, ablation treatment, topical treatment.

2. Vulvar Cancer.

(1) Etiopathogenesis and risk factors.

(2) Types of invasive vulvar cancer.

(3) Mode of spread: direct extension, lymphatic metastasis, hematogenous spread.

(4) Staging: FIGO (2009) staging.

(5) Diagnosis: symptoms and signs, biopsy and pathologic examination.

(6) Primary diseases treatment: the principle of treatment is maximum extent to reserve vulvar physiological structure, reduce the pain of patients, reduce complications of treatment, improve the quality of life.

1) Surgery: the first choice to treat vulvar cancer especial early stage diseases.

2) Radiotherapy: predominantly for locally advanced diseases.

3) Chemotherapy: for distant metastasis diseases or neoadjuvant therapy.

(7) Complications of treatment: wound breakdown and infection, ostitis pubis, secondary hemorrhage, thromboembolic disease, chronic leg edema, impaired sexual function.

(8) Prognosis and survival: lymph nodes metastasis is independent prognosis factor.

3. Premalignant and Malignant Disorders of the Vagina.

(1) Risk factor of vaginal SIL: uncertainly, HPV.

(2) Diagnosis: symptoms and signs, biopsy and pathologic examination.

(3) Treatment: observation, excision, ablation.

4. Vaginal Cancer.

(1) Risk factors: uncertainly, bacterial infections, trauma, HPV, synthetic estrogen diethylstilbestrol.

(2) Mode of spread: direct extension, lymphatic metastasis, hematogenous dissemination.

(3) Diagnosis: symptoms and signs, biopsy and pathologic examination.

(4) Staging: FIGO (2012) staging.

(5) Treatment: individualized based on tumor type, stage, location and size.

1) Surgical excision: especially for stage Ⅰ, selectly for persistent or recurrent disease.

2) Radiotherapy: predominantly for locally advanced diseases.

3) Chemotherapy: for distant metastasis diseases or adjuvant therapy.

Chapter20 Premalignant and Malignant Disorders of the Uterine Cervix

1. Premalignant Disorders of the Uterine Cervix.

(1) Grading of premalignant disorders: LSIL, HSIL, AIS, Bethseda system.

(2) Pathogenesis: squamous columnar junction, transformation zone, columnar epithelium, metaplastic epithelium.

(3) Epidemiological risk factors:

1) Early onset of sexual activity, multiple sexual partner, high risk sexual partner, HPV infection, lower genital tract neoplasia, AIDS and others form of immunosuppression, multiparity, long-term contraceptive use.

2) HPV: basic virology, types of HPV, transmission, outcome of HPV infection, risk factor of infection, diagnosis of infection, treatment, prevention, immunology of HPV.

(4) Clinical finding of cervical SIL: screening guildlines, evaluation of cytology results.

(5) Colposcopy: colposcopic grading (punctation, mosaic, atypical vascular pattern), biopsy, cervical cancer screening in resource poor settings.

(6) Management of cervical SIL: treatment plan (cryotherapy, CO_2 laser ablation, loop electrosurgical excision procedure, cold knife conization), see and treat options, hysterectomy, special situation.

2. Cancer of the Cervix.

(1) Etiology and epidemiology: HPV, epidemiological risk factor, autoimmune deficiency.

(2) Pathogenesis and natural history: HPV infection, most women readily clear virus, part women persistent infection, preinvasive dysplastic cervical disease, invasive cancer.

(3) Tumor spread: local tumor extension, lymphatic spread, lymphovascular space involvement, blood borne metastasis.

(4) Pathological type: squamous cell carcinoma, verrucuous carcinoma, adenocarcinoma, mixed cervical carcinoma, neuroendocrine tumor.

(5) Diagnosis: symptoms and signs, biopsy and pathologic examination, radiological examination.

(6) Clinical staging: FIGO (2009) staging.

(7) Treatment: surgical treatment, radiation therapy, adjuvant chemotherapy, palliative care.

(8) Special situation: carcinoma of cervical stump, during pregnancy, incidentally diagnosed after simple hysterectomy.

Chapter21 Premalignant and Malignant Disorders of the Uterine Corpus

1. Endometrial Hyperplasia.

(1) Classification: simple hyperplasia, complex hyperplasia, simple atypical hyperplasia, complex atypical hyperplasia.

(2) Clinical features: postmenopausal bleeding.

(3) Diagnosis: transvaginal sonography of endometrial thickness, endometrial biopsy.

(4) Treatment:

1) Nonatypical endometrial hyperplasia, endometrial intraepithelial neoplasia: nonsurgical therapy, progestin therapy.

2) Atypical endometrial hyperplasia: hysterectomy.

2. Endometrial Cancer.

(1) Clinical features: abnormal uterine bleeding, postmenopausal bleeding, vaginal

discharge.

(2) Diagnosis: dilatation and fractional curettage, endometrial biopsy, estrogen and progesterone receptor arrays.

(3) Pathology: histologic classification, histologic grading.

(4) Mode of spread: direct extension, lymphatic spread, hematogenous dissemination, retrograde transtubal transport.

(5) Staging: clinical staging, FIGO surgical staging.

(6) Treatment: surgery, adjuvant therapy (chemotherapy, radiation), hormonal therapy.

(7) Prognostic indicators: stage, histologic types, age.

3. Uterine Sarcoma.

(1) Categories: leiomyosarcoma, endometrial stromal sarcoma (ESS), malignant mixed mesodermal tumor (MMMT), adenocarcinoma.

(2) Staging: FIGO surgical staging.

(3) Treatment: surgery, adjuvant therapy (chemotherapy, radiation).

(4) Prognosis: stage, histologic types.

Chapter22 Premalignant and Malignant Disorders of Ovaries and Fallopian Tubes

1. Ovarian Cancer.

(1) Histopathology: epithelial, germ cell, sex cord and stromal.

(2) Clinical features: an insidous disease.

(3) Diagnosis:

1) Symptom: an insidous disease with few warning signs or symptoms.

2) Physical examination: pelvic mass.

(4) Investigation: lab evaluation (CA125, HCG), ultrasound, CT/MRI, radiography.

(5) Stage: FIGO surgical staging system.

(6) Treatment: surgical cytoreduction or debulking, second look laparoscopy, chemotherapy, radiotherapy.

(7) Prognostic indicators: stage, histologic types.

2. Malignant Neoplasm of Fallopian Tube.

(1) Clinical features: most frequently in fifth and sixth decade of life.

(2) Symptoms and sign: prominent watery vaginal discharge (hydrops, tubal profluens), pelvic pain, pelvic mass.

(3) Staging: FIGO surgical staging.

(4) Treatment: surgery, adjuvant therapy.

(5) Prognostic indicators: stage.

Chapter23 Gestational Trophoblastic Diseases

1. Risk factors: obstetrical history.

2. Pathology: hydatidiform mole, invasive mole, choriocarcinoma, placental site trophoblastic tumors (PSTTs).

3. Clinical presentations: vaginal bleeding, excessive uterine size, pre-eclampsia, hyperemesis gravidarum, hyperthyroidism, trophoblastic embolization, theca lutein cyst.

4. Investigations: ultrasound, β-HCG estimation.

5. Stage: FIGO anatomic staging of GTN.

6. Scoring system: FIGO/WHO scoring system based on prognostic factors.

7. Treatment: suction curettage, hysterectomy, prophylactic chemotherapy, radiotherapy.

8. Follow-up.

Chapter24 Endometriosis

1. Definition of endometriosis.

2. Pathogenesis: unknown. Theories for histogenesis are as follows: metastatic theory, embryonic cell rest and coelomic metaplasia theory, induction theory, role of immune system, genetic influence and hormonal dependence.

3. Pathology: classical appearance; distribution of lesion; microscopic appearance.

4. Diagnosis:

(1) Clinical presentation: pelvic pain, dyspareunia, menorrhagia and infertility.

(2) Physical findings; investigation: imaging, CT and MRI, serum marker CA-125 and laparoscopy.

5. Differential diagnosis: pelvic inflammatory disease and pelvic tumors.

6. Treatment: expectant management; analgesic anti-inflammatory; hormonal therapy; surgical treatment; assisted reproductive techniques.

Chapter25 Pelvic Organ Prolapsed

1. Introduction to and definition of POP.

2. Classification: anterior vaginal wall defect, apical prolapse, posterior vaginal wall defect.

3. Description and staging of pelvic organ prolapse: baden walker halfway system and pelvic organ prolapse-quantification (POP-Q) system.

4. Etiology: pregnancy, vaginal delivery, menopause, chronic raised intra-abdominal pressure, pelvic floor trauma, genetic factor, hysterectomy, spina bifida.

5. Pathophysiologic changes: pelvic floor, vagina, cervix, urinary system.

6. Diagnosis: symptoms, physical examination, POP-Q examination, laboratory investigations.

7. Treatment: primary treatment with pessary. Surgical measures include sacrospinous ligament fixation, iliococcygeal vaginal suspension, bilateral uterosacral ligament suspension, abdominal sacrocolpopexy, Fothergill's Repair (Manchester Operation), vaginal hysterectomy.

Chapter26 Urinary Incontinence

1. General introduction to urinary incontinence, illustrating it's physiology and epidemiology.

2. Classification and definition: stress urinary incontinence, urge incontinence.

3. Diagnosis: history, quality of life measures, physical examination, tests including voiding diary, urine analysis, post void residual volume, cough stress test, urodynamic study.

4. Treatment:

(1) Conservative treatment including lifestyle changes, physical therapy, behavioral therapy and bladder training, pessary and urethral inserts.

(2) Medical treatment.

(3) Surgical treatment.

Chapter27 Genital Ambiguity and Intersexuality

1. Genital Ambiguity at Birth:

(1) Physical signs.

(2) Diagnosis.

(3) Management.

2. Intersex.

(1) Classification and nomenclature of abnormal sexual differentiation: true hermaphrodite, male pseudohermaphrodite and female pseudohermaphrodite.

(2) Masculinized female: congenital adrenal hyperplasia (adrenogenital syndrome): diagnosis, investigation and treatment.

(3) Masculinization due to elevated androgen in maternal circulation:

1) Androgen insensitivity syndrome: clinical presentation, investigation and management.

2) Incomplete androgen insensitivity: clinical presentation.

3) Reductase deficiency: diagnosis and management.

4) Abnormal androgen synthesis.

(2) True hermaphroditism.

3. Disorders of Gonadal Development.

(1) Bilateral dysgenesis of the testis (Swyer syndrome).

(2) Anorchia.

(3) Gonadal dysgenesis.

1) Turner's syndrome: causes, salient features of turner's syndrome and treatment.

2) Mixed gonadal dysgenesis (mosaicism).

Chapter28 Contraception

1. Contraception.

(1) The methods of contraception:

1) Natural method: coitus interruptus, lactational amenorrhea and fertility awareness (standard days method, periodic or rhythmic abstinence).

2) Barrier method.

Male condom: advantages and disadvantages.

Female condom (vaginal pouch): advantages and disadvantages.

Vaginal diaphragm.

Cervical cap.

3) Spermicidal preparation.

4) Intrauterine device (IUD, IUCDs).

Mechanism of action.

Effectiveness.

Benefits and side effects and risk (infections, cramping and bleeding, menstrual problem, menstrual problem, expulsion, ectopic pregnancy and pregnancy with IUD in situ).

5) Hormonal contraception.

Mechanism of action.

Safety of hormonal contraception.

Beneficial effects: fertility related benefit, menstrual benefits, protection against benign disease, protection against malignancies and other possible health benefits.

Possible adverse effects: lipids and lipoprotein, carbohydrate metabolism, liver disease, neoplasia (endometrial and ovarian cancer, cervical cancer, breast cancer and livertumor), cardiovascular effects (thrombosis and embolism, ischemic heart disease, stroke, hypertension), effect on reproduction, lactation and weight gain.

Contraindications of COC's.

Transdermal hormonal contraception: transvaginal administration and intramuscular administration.

Progesterone contraceptive: advantage and disadvantages.

Injectable progestin contraceptives: advantage, problem, and indications and contraindications.

Progestin implants:

Two preparation: Norplant and Implanon.

Advantage and disadvantages.

6) Emergency contraception.

Yuzpe regimen combination method.

Progestin (Levonorgesterol) only methods.

Copper intrauterine device.

Mifepristone (RU 486).

2. Sterilization.

(1) Female sterilization.

(2) Male sterilization-vasectomy.

Chapter29 Preconceptional Counseling, Physiological Changes in Pregnancy and Antenatal Cares

1. Preconceptional Counseling.

(1) Role of preconceptional counseling, information obtained during preconceptional counseling, primary protection.

2. Physiological Changes During Pregnancy: General Consideration.

(1) Cardiovascular, pulmonary, renal, gastrointestinal, musculoskeletal system and metabolic changes, genital tract changes.

3. Prenatal Care.

(1) Prenatal records, determination of gestational age, historical information, physical examination and laboratory investigation.

4. Diagnosis of Pregnancy.

(1) The clinical symptoms, physical signs and pregnancy test: β-HCG.

5. Prenatal Diagnosis.

Indications, principle of genetic disorders and sex chromosome anomalies, polygenic inheritance, cytogenetics.

6. Chromosomal Abnormalities.

(1) Trisomy: the three most common autosomal trisomies: Trisomies 21 (Down's Syndrome), 13 (Patau's Syndrome) and 18 (Edward's Syndrome); the best known trisomy of sex chromosome: XXY (Klinefelter's Syndrome).

(2) Mechanism: nondysjunction, mosaic, chimera, translocation, diletion, isochroosomes, inversion.

7. Applied Genetics.

Techniques used in prenatal diagnosis: maternal serum screening, ultrasound, chorionic villus sampling, amniocentesis, percutanous umbilical blood sampling.

Chapter30 Normal Labor

1. Definition: fetal presentation; fetal lie; anterior fontanelle (bregma); posterior fontanelle; friedman curve; stages of labor; engagement; latent phase of labor active phase of labor.

2. Etiology: cause of onset of labor; calculation of date of labor; mechanism of labor; cardinal movement of labor.

3. Diagnosis: phases of labor; stages of labor.

4. Treatment: duration of the stages of labor; management of the stages of labor of mother and child.

Chapter31 First Trimester Vaginal Bleeding

1. Introduction.

(1) Background.

(2) Differential diagnosis.

(3) Evaluation.

2. Abortions.

(1) Definition.

(2) Classification: threatened abortion, complete abortion, incomplete abortion, inevitable abortion, missed abortion, septic abortion.

(3) Etiology:

1) Genetic cause: trisomy, polyploidy/aneuploidy, translocation.

(4) Environmentalcause: uterine, cervical, endocrine, immunologic, infections, toxins, trauma.

(5) Pathology.

(6) Clinical findings:

1) Threatened abortion.

2) Inevitable abortion.

3) Incomplete abortion.

4) Complete abortion.

5) Missed abortion.

6) Blighted ovum.

(7) Investigation:

1) Complete blood count.

2) Pregnancy test.

3) Ultrasonography.

(8) Complications: severe or persistent hemorrhage, sepsis, intrauterine synechiae, infertility and infection.

(9) Management:

1) Threatened abortion.

2) Complete abortion.

3) Incomplete abortion.

4) Missed abortion.

3. Septic Abortion.

(1) Causes.

(2) Symptoms and signs.

(3) Investigations.

(4) Treatment.

4. Induced Abortion.

(1) Definition.

(2) Medical termination of pregnancy (MTP): indications of MTP, qualification of MTP provider, place for MTP, consent.

(3) Methods of termination of pregnancies.

1) First trimester MTP.

Medical methods: mifepristone (RU-486) and misoprostol, methotrexate and misoprostol, tamoxifen and misoprostol, misoprostol alone; side effects and complication of medical methods.

Surgical methods: menstrual regulation, manual vacuum aspiration, suction evacuation and/or curettage; complication of surgical methods.

2) Second trimester MTP (13-20 weeks).

MTP between 13-15 weeks of gestation.

Surgical methods: dilatation and evacuation, aspirotomy.

Medical methods-induction of labor: extra-amniotic installation of 0.1% ethacridine lactate, extra-amniotic 20% hypertonic saline administration, prostaglandin.

MTP between 16-20 weeks of gestation.

Intra-amniotic instillation of abortifacient drugs, extra-amniotic administration of ethacridine lactate, prostaglandin, hysterotomy.

Follow-up of patients after induced abortion.

Complications following second trimester MTP.

Immediate: trauma, hemorrhage and shock, thrombosis and embolism, related to method employed, uterine perforation, postabortal hematometra.

Remote: chronic pelvic inflammatory disease, infertility as a consequence of infection, scar endometriosis, uterine synechiae, various grades of asherman's syndrome, placenta previa, ectopic pregnancies.

5. Ectopic Pregnancy.

(1) Definition.

(2) Classification:

1) Tubal (>95%): ampullary (55%), isthmic (25%), fimbrial (17%), interstitial (2%).

2) Other sites (<5%): cervical, ovarian, abdominal, intraligamentous.

3) Heterotopic pregnancy.

4) Bilateral ectopic: very rare.

(3) Etiology: tubal damage including inflammation and infection, contraceptive use, tubal sterilization, tubal surgery, prior abdominal surgery, others.

(4) Pathogenesis of tubal pregnancy: tubal mole, tubal abortion, tubal rupture, abdominal pregnancy, broad ligament pregnancy, ovarian pregnancy, interstitial pregnancy, heterotopic ectopic pregnancy, cesarean scar pregnancy.

(5) Histologic characteristics.

(6) Clinical features.

1) History.

2) Symptoms: pain, amenorrhea and vaginal bleeding.

3) Signs: tenderness, adnexal mass, uterine changes, hemodynamic instability.

4) Laboratory findings: hematocrit, urinary pregnancy test, serumβ-HCG assays.

5) Special examination: ultrasound (abdominal sonography, vaginal sonography, color and pulsed doppler ultrasound), serum progesterone, laparoscopy, D&C, culdocentesis, magnetic resonance imaging.

(7) Management.

1) Medical management: methotrexate.

Criteria for patient selection for medical management:

No intrauterine gestational sac or fluid collection, the HCG level is lesser than 2000 miu/ml, the HCG level is rising and an ectopic pregnancy mass of 4.0 cm or less without cardiac activity or 3.5 cm or less with cardiac acting is visualized;

β-HCG level is persistent after salpingostomy or salpingotomy.

Exclusion criteria for methotrexate therapy: noncompliant patient, women who completed childbearing, peptic ulcer disease, immunodeficiency, pulmonary disease, liver disease, renal disease, blood dyscrasias, hemodynamic instability, free fluid in the cul-de-sac with pelvic pain, sensitivity to methotrexate.

Efficacy of treatment.

Risk of methotrexate treatment: stomatitis, dermatitis, pleuritis and altered liver function.

2) Surgical treatment: salpingostomy, segmental resection with anastomosis, plucking out, salpingectomy.

Chapter32 Recurrent Pregnancy Loss and Bad Obstetrics History

1. Recurrent Pregnancy Loss.

(1) Definition.

(2) Etiology: chromosomalcause, anatomical/uterus, immunologic, thrombophilia, endocrine, infectious, environmental, unexplained.

(3) Diagnosis:

1) Chromosomal cause: karyotype analysis.

2) Anatomical factors: hysterosalpingography, ultrasound, or hysteroscopy.

3) Immunologic factor: lupus anticoagulant and anticardiolipin antibodies.

4) Thrombophilia: selective screening for most common abnormality in women with unexplained RPL.

5) Endocrine factors: examine relevant hormone levels.

6) Infectious cause: routine serologic testing, tissue culture and endometrial biopsy in women with clinical cervicitis, chronic or recurrent bacterial vaginosis or other symptoms of pelvic infection.

7) Environmental factors: history.

(4) Treatment depends on the cause identified:

1) Genetic error: artificial insemination by donor, embryo transfer, prenatal testing, preimplantation diagnosis.

2) Anatomic abnormalities: uterine operation, hysteroscopic resection of septum, myomectomy, cervical circlage operation, reconstruction of cervical issues.

3) Hormonal abnormalities: thyroid replacement, progesterone or clomiphene citrate, diabetic diet and or insulin as indicated.

4) Infection: appropriate antibiotic.

5) Acute immune disease: low dose aspirin and heparin.

6) Exogenous agent: discourage smoking, alcohol and drugs.

7) Immunological factor: treatment is under investigation.

2. Bad Obstetrical History.

(1) History taking: stillbirth, neonatal death, cesarean section.

(2) Evaluation and management options:

1) Previous intrauterine death: screening for PIH and gestational diabetes, close fetal monitoring.

2) Maternal syphilis: VDRL test.

3) TORCH testing.

4) Antiphospholipid syndrome: ACL and LAC.

5) History of fetal abnormality: prepregnancy counseling, history of maternal diabetes, substance abuse, thyroid disorders should be elicited and treated; targeted ultrasonography with fetal echocardiography.

6) Previous history of pre-eclampsia, hypertensive, nephritis: treat appropriately.

7) Details of labor.

8) History of previous injury to bladder, cesarean section is indicated.

Chapter33 Late Pregnancy Complications

1. Preterm Labor.

(1) Definition of preterm labor, low birth weight infant.

(2) Etiology: intrauterine infections, genital and urinary tract infections, incompetent cervix, uterine abnormalities, obstetric complications.

(3) Diagnosis: baseline history; symptoms and signs: gestational week<37 with regular uterine contractions accompanying with a cervix 80% effaced, or a cervix that is 2cm dilated; evaluation and laboratory studies.

(4) Predictions: ultrasound evaluation of cervical length, fetal fibronectin test.

(5) Treatment: tocolytic therapy, antibiotic treatment, accelerate fetal lung maturity.

2. Preterm Premature Rupture of Membranes.

(1) Definition of preterm premature rupture of membranes.

(2) Etiology: intrauterine infections, genital and urinary tract infections, incompetent cervix, uterine abnormalities, obstetric complications.

(3) Diagnosis: baseline history; symptoms and signs: gestational week<37 with regular uterine contractions accompanying with a cervix 80% effaced, or a cervix that is 2cm dilated; evaluation and laboratory studies.

(4) Predictions: ultrasound evaluation of cervical length, fetal fibronectin test.

(5) Treatment: tocolytic therapy, antibiotic treatment, accelerate fetal lung maturity.

3. Post-Team Pregnancy.

(1) Definition of post-team pregnancy.

(2) Diagnosis: confirmation of the gestational age, non-stress testing two times weekly and ultrasonic monitoring at least twice weekly and daily fetal movement count by mothers.

(3) Management: prostaglandins are first choice for induction of labor when cervical ripening is required. Patient with previous uterine scar with postdatism should be preferably managed by repeat cesarean section.

4. Intrauterine Fetal Death.

(1) Definition of intrauterine fetal death.

(2) Etiology of maternal factors, thrombophilias, infection, obstetric complication.

(3) Diagnosis: symptoms and signs, investigation and evaluation including ultrasound confirmation, plane X-ray abdomen, hematological evaluation, examination of placenta, baby and karyotyping of baby after delivery of baby.

(4) Complications: psychological upset, infection, coagulation disorders, uterine inertia, retained placenta and postpartum hemorrhage during labor.

(5) Management: induction of labor including oxytocin infusion, prostaglandin gel, misoprostol (PGE1), Foley's catheter insertion in uterus and cesarean section if indicated.

5. Isoimmunization and Other Blood Group Incompatibility.

(1) Pathogenesis: maternal Rh isoimmunization.

(2) Management: the ABO and Rh group of all pregnant patients should be determined at the first antenatal visit. Rh antibody estimation at 28 weeks and antibody screening at 35 weeks should be performed.

Chapter34 Third Trimester Bleeding

1. Placenta Previa.

(1) Definition: in the third trimester, when placenta is implanted in the lower uterine segment within the zone of effacement and dilatation of the cervix so that it covers or adjoins the internal os, is termed as placenta previa.

(2) Classification of placenta previa according to its relation with internal os.

1) Total or complete placenta previa.

2) Partial placenta previa.

3) Marginal placenta previa.

4) Low lying placenta.

(3) Risk factors: advancing maternal age, multiparity, smoking, maternal cocaine and opiate use, multifetal gestation, history of abortion has and following uterine curettage, previous uterine scar, prior history of placenta previa.

(4) Diagnosis:

1) Symptoms and signs: painless, causeless and recurrent hemorrhage; usually soft uterus, relaxed and non-tender; high presenting part; fetal heart rate normal unless hypovolemic shock shows.

2) Localization of placenta by ultrasound and MRI.

(5) Treatment: dependsing on the factors as follows: amount of uterine bleeding; duration of pregnancy; viability of fetus; degree of placenta previa; the presentation, position and status of the fetus; the gravidity and parity of the patient; the status of the cervix; onset of labor.

1) Expectant treatment.

2) Vaginal delivery.

3) Cesarean section.

2. Abruptio Placenta.

(1) Definition: premature separation of normally implanted placenta before delivery of the fetus.

(2) Types of presentation: revealed bleeding or external hemorrhage, concealed or internal hemorrhage, mixed variety.

(3) Risk factors: hypertensive disorders in pregnancy, multiple pregnancy, polyhydramnios, smoking, multiparity, preterm premature rupture of membrane, trauma, thrombophilia, lower socioeconomic status, fibroids and uterine malformation, increasing maternal age, history of prior abruption, etc.

(4) Diagnosis: clinical features depend on degree and speed of separation of placenta and amount of blood concealed in uterus cavity.

1) Symptoms and signs: vaginal bleeding and abdominal pain, uterine tenderness and abdominal or back pain, fetal distress, uterine tetany, DIC or hypovolemic shock.

2) Ultrasound imaging.

3) Lab test.

(5) Differential diagnosis: placenta previa, rupture uterus, retroperitoneal hematoma, hematoma of rectus abdominis, acute polyhydramnios, nonobstetrical acute abdominal condition.

(6) Treatment: depend on gestational age and status of mother and fetus.

1) Expectant treatment.

2) Vaginal delivery.

3) Cesarean section.

4) Management of complications.

3. Rupture of the Uterus.

(1) Definition: disruption in the continuity of the uterine wall any time beyond 28 weeks of pregnancy. Spontaneous, traumatic or rupture in labor.

(2) Diagnosis: signs and symptoms: sudden appearance of gross hematuria and abnormal fetal heart rate pattern on CTG, severe pain followed by cessation of uterine contractions, vaginal external bleeding and signs of hypovolemic shock and fainting, scar dehiscence in labor.

(3) Treatment: immediate laparotomy is indicated when the diagnosis of uterus rupture is made. Repair of the rupture or hysterectomy.

Chapter35 Disproportionate Feta Growth

1. Definition: large for gestational age/small for gestational age/IUGR or FGR.

2. Types, features and causes of FGR:

(1) Type I or symmetrical or intrinsic.

(2) Type II or asymmetrical IUGR.

3. Complications:

(1) Antepartum period: incidence of stillbirth and oligohydramnios is increased.

(2) Intrapartum: higher incidence of meconium aspiration, fetal distress and acidosis during labor; more cord compression and increased risk of cesarean due to fetal distress.

(3) Neonatal complications.

(4) Childhood and long term risks.

4. Diagnosis:

(1) Identification of high risk patients.

(2) Calculation of gestational age.

(3) Serial measurement of symphysis fundal height and abdominal girth.

(4) Sonographic evaluation of fetal growth, amniotic fluid index, doppler velocimetry and placental changes.

5. Treatment: close observation and timing and mode of delivery.

6. Definition, cause and complications of macrosomia.

Chapter36 Multiple Pregnancy

1. Genesis of twins.

(1) Identical twins (monozygotic twins, uniovular twin):

1) Diamniotic dichorionic monozygotic twins.

2) Diamniotic monochorionic twins.

3) Mono amniotic monochorionic twins.

4) Conjoined twins.

(2) Fraternal twins.

(3) Superfetation.

2. Complications:

(1) Antepartum period: Incidence of stillbirth and oligohydramnios is increased.

(2) Intrapartum: higher incidence of meconium aspiration, fetal distress and acidosis during labor; more cord compression and increased risk of cesarean due to fetal distress.

(3) Neonatal complications.

(4) Childhood and long term risks.

3. Diagnosis:

(1) Symptoms and signs.

(2) Ultrasound examination.

4. Complications:

(1) Maternal: anemia, preterm delivery, spontaneous abortion, hyperemesis, hypertensive disorders, abruptio placenta, polyhydramnios, placenta previa.

(2) Fetal: congenital malformation, vanishing twins, FGR, growth discordance, perinatal mortality.

(3) Unique complications: twin to twin transfusion syndrome, acardiac twin.

5. Antenatal care in twin pregnancies.

6. Management:

(1) In labor.

(2) Specific situation: preterm labor, TTTS, death of one fetus.

Chapter37 Disorders of Amniotic Fluid

1. Definition of polyhydroamnios and oligohydroamnios.

2. Etiology.

(1) Polyhydroamnios: idiopathic, maternal diabetes, congenital malformation, rh incompatibility, nonimmune hydrops, multiple gestations, chorioangioma.

(2) Oligohydroamnios: Chromosomal abnormalities, congenital anomalies, maternal hypertensive disorders and diabetes, fetal demise, TTTS, post-term pregnancy.

3. Diagnosis of polyhydroamnios and oligohydroamnios: signs and ultrasound investigation.

4. Management.

(1) Polyhydroamnios: underlying etiology and therapeutic amniocentesis; specific management in labor.

(2) Oligohydroamnios: associated with pregnancy complications gestational age, congenital anomalies should be excluded and serial USG performed; aminoinfusion.

Chapter38 Special Cases in Obstetrics

1. Elderly Primigravida.

(1) Definition of elderly primigravida.

(2) Complications of pregnancy: abortion, hyperemesis, preeclampsia and essential hypertension, gestational diabetes and type 2 diabetes mellitus, placenta previa and placental abruptio.

(3) Complications in labor: preterm labor, prolonged labor, occiput posterior position, maternal distress, operative delivery.

(4) Management: preconceptional counseling, regular monitoring for blood pressure and blood sugar, assessment of pelvis and offer cesarean section if necessary, and eliminate psychological stress.

2. Grand Multipara.

(1) Definition of grand multipara.

(2) Complications of pregnancy: abortion, anemia, hiatus hernia, hypertensive vascular disease, placenta previa, abruptio placenta, malpresentations, chromosomal abnormalities in fetus.

(3) Complications in labor: malpresentation, cephalopelvic disproportion, uterus rupture, postpartum hemorrhage, instrumental delivery and cesarean section.

(4) Management: regular monitoring for blood pressure and blood sugar, antenatal ultrasound scan, assessment of pelvis and offer cesarean section if necessary.

3. Obesity.

(1) Definition of Obesity.

(2) Complications: hypertension and diabetes, venous thromboembolic disease, urinary tract infection and respiratory complication, neural tube defects, fetal mortality and preterm delivery, malpresentation.

(3) Complications in labor: incoordinate uterine action and uterine inertia, fetal macrosomia, shoulder dystocia and birth asphyxia, cesarean section and postoperative complications, postpartum hemorrhage, inappropriate lactation, perinatal mortality.

(4) Management: diet, monitor blood pressure, monitor fetal growth, close fetal and maternal surveillance in labor, especial management in cesarean section.

Chapter39 Hypertensive Disorders in Pregnancy

1. General Consideration.

(1) Definition and classification of hypertensive disorders in pregnancy.

1) Definition.

2) Classification.

(2) Preeclampsia: definition and classification.

1) Incidence and risk factors for preeclampsia.

2) Etiopathogenesis:

Many theories have been proposed:

Immunologic response.

Circulating toxins.

Endogenous vasoconstriction.

Endothelial damage.

Primary disseminated intravascular coagulation.

Pathophysiology: specific changes associated with preeclampsia (cardiovascular changes, hematologic changes, morphological changes).

3) Prediction of preeclampsia.

4) Prevention of preeclampsia.

Aspirin and antiplatelet agent.

Diet and exercise.

(3) Gestational hypertension.

(4) Chronic hypertension in pregnancy.

1) Causes of chronic hypertension.

2) Management.
3) Role of anti-hypertensive.
2. Management.
(1) Management of mild PIH.
(2) Expectant management in mild PIH.
(3) Management in severe preeclampsia:
1) Pregnancy＜24 weeks.
2) Pregnancy＞34 weeks.
3) Pregnancy between 24 and 34 weeks.
(4) Monitoring protocol in expectant treatment.
(5) Expectant management of severe preeclampsia.
(6) Indications of termination of delivery in severe PIH.
(7) Intrapartum management of preeclampsia.
(8) Complications of preeclampsia.
1) Maternal complications.
2) Fetal complications.
3. HELLP Syndrome.
(1) Diagnosis.
(2) Investigation.
4. Eclampsia.
(1) Diagnosis.
(2) Symptoms and signs.
(3) Management: general measures; control of convulsion.
(4) Control of blood pressure.
(5) Delivery.

Chapter40 Diabetes Mellitus and Pregnancy

1. General Considerations.
(1) Type I insulin dependent diabetes mellitus.
(2) Type II noninsulin dependent diabetes mellitus.
(3) Incidence.
2. Pathophysiology: Glucose Metabolism in Normal and Diabetic Pregnancy.
(1) Maternal glucose homeostasis in normal pregnancy.
(2) Fetal glucose homeostasis in normal pregnancy.
(3) Maternal and fetal glucose homeostasis in diabetic mother.
(4) Diagnostic criteria for diabetes mellitus prior to pregnancy.
(5) Gestational diabetes mellitus.
1) Class A1.
2) Class A2.
(6) Screening and diagnosis for gestational diabetes.
1) Risk assessment.
2) Screening methods and guidelines.
3) Diagnostic criteria.

(7) Management.

1) Prepregnancy counseling.

2) Antepartum management (option for termination of pregnancy; program of care; dietary recommendation).

3) Regular exercise.

4) Surveillance of maternal diabetes.

5) Insulin therapy.

6) Obstetric management (fetal surveillance; time and mode of delivery; intrapartum management; postpartum care).

(8) Complications of diabetes in pregnancy.

Chapter41 Hematological Disorders in Pregnancy

1. Anemia.

(1) Definition.

(2) Physiological hemodynamic changes in pregnancy and erythropoiesis.

1) Cardiac output.

2) Blood pressure.

3) Erythropoiesis.

2. Anemia in Pregnancy.

(1) Iron deficiency anemia (physiology of iron metabolism in pregnancy; cause of iron deficiency anemia; diagnosis of iron deficiency anemia; differential diagnosis; complications of anemia).

(2) Prophylaxis.

(3) Treatment of iron deficiency anemia (parenteral iron; erythropoietin; severe anemia in late pregnancy and labor).

(4) Megaloblastic anemia.

1) Incidence.

2) Etiopathogenesis.

3) Diagnosis.

4) Treatment.

5) Prognosis.

6) Vitamin B_{12} deficiency.

(5) Aplastic anemia.

(6) Hemoglobinopathies.

(7) Hemorrhagic disorders.

(8) Complications.

Chapter42 Cardiac Disease in Pregnancy

1. Introduction.

(1) Incidence and types of cardiac disease in pregnancy.

(2) Physiological changes in pregnancy and effect of cardiac disease on pregnancy.

(3) Diagnostic evaluation of heart disease in pregnancy.

(4) Diagnostic studies.

1) Electrocardiography.
2) Echocardiography.
3) Chest X-ray.
4) Exercise stress testing.
5) Cardiac catheterization.
6) Clinical classification.
(5) Management of cardiac disease in pregnancy.
1) Prepregnancy counseling.
2) Antenatal management.
3) Management of labor and delivery.
4) Management of first stage of labor.
5) Management of second stage of labor.
6) Third stage of labor.
(6) Indication of cesarean section.
(7) Puerperium.
2. Specific Heart Disease During Pregnancy and Management.
(1) Mitral stenosis.
(2) Aortic stenosis.
(3) Mitral regurgitation.
(4) Congenital ventricle septal defect or atrial septal defect.
(5) Eisenmenger's syndrome.
(6) Primary pulmonary hypertension.
(7) Peripartum cardiomyopathy.

Chapter43 Thyroid Dysfunction With Pregnancy

1. General Consideration.
Thyroid physiology during normal pregnancy: TBG, T4 and T3 increases, TSH decreases.
2. Hyperthyroidism in Pregnancy.
(1) Definition of Grave's disease.
(2) Etiology: intrauterine infections, genital and urinary tract infections, incompetent cervix, uterine abnormalities, obstetric complications.
(3) Diagnosis:.
1) Clinical presentation: tachycardia on awakening from sleep or resting pulse > 100bpm, eye involvement, weight loss or failure to gain weight despite a good appetite.
2) Laboratory investigation: FT4, T3 and FT3 increases, TSH decreases or undetectable, TsAb will be elevated in significant number of cases.
(4) Treatment:
1) Antithyroid medications: prophylthiouracil is drug of choice, which include prophylthiouracil, methimazole and carbimazole.
2) Surgical treatment: radioactive iodine therapy for gland ablation is contraindicated in pregnancy.
(5) Monitoring:
1) Women: agranulocytosis is the serious complication but uncommon.

2) Fetal: fetal thyroid size should be monitored by periodic ultrasound examination from 20 weeks onward.

3. Hypothyroidism in Pregnancy.

(1) Diagnosis: symptoms and signs, laboratory investigation: TSH level. Free T4 and antibody titers.

(2) Clinical presentation: elevated TSH and antithyroid peroxidase (TPO) antibodies.

(3) Prognosis: monitoring of thyroid function after every pregnancy and after that yearly.

Chapter44 Jaundice, Hepatitis and Gastrointestinal Disorders in Pregnancy

1. Jaundice and Hepatitis in Pregnancy.

(1) Etiology: causes of jaundice in pregnancy; liver disease unrelated to pregnancy: viral hepatitis is the most common cause of jaundice in pregnancy in the tropics.

(2) Diagnosis: clinical features; laboratory investigations: liver function test, serologic markers, ultrasound examination.

(3) Management: treatment of acute viral hepatitis; avoid drug metabolized by liver.

(4) Prevention and prophylaxis:

1) Hepatitis A: immunoglobulin prophylaxis, two hepatitis A vaccines.

2) Hepatitis B: hepatitis B vaccine, hepatitis B Ig.

2. Liver Problems Unique to Pregnancy.

(1) Intrahepatic cholestasis of pregnancy: diagnosis: clinical features: pruritis; laboratory investigations. Treatment is primarily symptomatic for pruritis. Fetal surveillance is necessary.

(2) Acute fatty liver of pregnancy (AFLP):

1) Clinical presentation: malaise, anorexia, nausea and vomiting, epigastric pain and progressive jaundice.

2) Diagnosis: elevated AST and ALT levels (up to 7 times normal) and bilirubin level and prolonged prothrombin time.

3) Complications: acute renal failure, DIC, encephalopathy and sepsis.

4) Management: supportive care and prompt delivery.

5) Prognosis: termination of pregnancy and extensive supportive therapy.

(3) HELLP syndrome: mimics acute fatty liver of pregnancy.

(4) Cholelithiasis in pregnancy: laparoscopic cholecystectomy for biliary colic can be safely performed in the first and early second trimester of pregnancy.

(5) Other disorders of gastrointestinal tract in pregnancy: reflux esophagitis, peptic ulcer, inflammatory bowel disease.

(6) Acute abdominal pain resulting from nonobstetric causes: diagnostic consideration: pain, other symptoms: nausea, vomiting with inability to pass flatus or stool points to an intestinal obstruction; history taking and examination. Principle of surgical management, management of specific condition: appendicitis, acute intestinal obstruction.

(7) Cholecystitis and cholelithiasis: diagnosis: steady right upper abdominal pain with nausea and anorexia; ultrasound confirms the diagnosis. Treatment: medical treatment, surgery.

(8) Ovarian cyst and adnexal torsion: diagnosis: patient usually presents with unilateral pelvic pain with vomiting, ultrasound. Treatment: surgical emergency.

(9) Pancreatitis: gallbladder disease is the most common cause. Treatment: patients with pancreatic abscess, ruptured pseudocyst or hemorrhagic pancreatitis may require surgical treatment.

(10) Surgical condition with left upper quadrant pain: splenic rupture, splenic artery aneurysm rupture.

Chapter45 Renal Disorders in Pregnancy

1. Asymptomatic Bacteriuria:

(1) Definition of asymptomatic bacteriuria.

(2) Diagnosis: laboratory investigation: a colony count>105 organism per ml of urine. Urine culture, dipstick test for nitrite and leukocyte esterase.

(3) Treatment: the initial antibiotic selection should be empirical. Sulfonamides, Nitrofurantoin or Cephalosporins are good choice.

2. Acute Pyelonephritis.

(1) Symptoms: fever with chills, flank pain, nausea, headache, increased urinary frequency and dysuria.

(2) Diagnosis: Urine examination, urine culture.

(3) Effect on pregnancy and complication: complication can be serious and are primarily caused by bacterial endotoxin damage.

(4) Treatment: intravenous hydration, antibiotics, surgery.

(5) Follow-up and prognosis: periodic culture of urine.

(6) Definition of relapse and reinfection.

3. Acute Renal Failure.

(1) Definition of acute renal failure.

(2) Causes: prerenal; renal type; post-renal type.

(3) Clinical course: oliguric phase, diuretic phase, recovery phase.

(4) Treatment: emergency treatment, surgical measures, routine measures, dialysis.

4. Chronic Renal Disease.

(1) Symptoms: acute rapidly progressive glomerulonephritis, nephrotic syndrome, asymptomatic abnormalities of the urinary sediment and chronic glomerulopathies.

(2) Management: serial creatinine measurement, protein excretion and blood pressure is monitored.

(3) Prognosis: related to the degree of functional impairment.

5. Pregnancy After Renal Transplantation.

(1) Several criterias should be present before attempting the pregnancy.

6. Adult Polycystic Kidney Disease.

In general pregnancy does not appear to worsen the course of this disease.

Chapter46 Nervous System Disorders in Pregnancy

1. Epilepsy and Seizure Disorder.

(1) Definition of epilepsy, seizure disorder, gestational epilepsy, anticonvulsant

embryopathy.

(2) Cause of seizure in pregnancy.

(3) Diagnosis: history, physical examination and screening for toxic substance, cranial CT and MR, EEG.

(4) Effect of seizure disorders on pregnancy and vice versa.

(5) Management:

1) Preconceptional counseling.

2) Antenatal care: mid pregnancy targeted ultrasound examination may identify fetal anomalies.

3) Anticonvulsant therapy: choice and dose of medicine should be tailored.

4) Neonatal complications with the anticonvulsant drugs: fetal hydantoin (phenytoin) syndrome.

5) Intrapartum care: anticonvulsant drug (intravenous benzodiazepines) should be given during labor, status epilepticus or recurrent seizures are indication for cesarean section.

6) Postnatal care.

2. Headache.

(1) Tension headache: tightness and pain in the back of the neck and head without associated neurological disturbances.

(2) Migraine headache:

1) Clinical presentation: periodic, hemicranial, throbbing headache, often accompanied by nausea and vomiting.

2) Types: commom migraine, classical migraine, basilar migraine, complicated migraine.

3) Management: abortive therapy, prophylactic medication.

Chapter47 Asthma in Pregnancy

1. Asthma in Pregnancy.

(1) Effect of asthma on pregnancy:

1) Women: diagnosed and start treatment before pregnancy or in early part of pregnancy, have a better pregnancy outcome.

2) Neonates: higher risk of prematurity, low birth weight and perinatal death.

(2) Diagnosis: symptoms, pulmonary function studies: FEV1, PEFR.

(3) Management: In most cases inhaled β2 agonist relieves and corticosteroid prevents asthma in pregnancy.

(4) Treatment of acute asthmatic attacks: similar to that for the nonpregnant asthmatic.

(5) Management during labor and delivery: regularly scheduled asthma medications, low dose corticosteroids, PEFR; for surgical delivery: conduction analgesia and syntocinonare preferred, PGF2 should not be used as it precipitates bronchospasm.

2. Tuberculosis.

(1) Effect of tuberculosis on pregnancy.

(2) Diagnosis: symptoms and signs, laboratory findings: tuberculin skin test, chest

X-ray, bacteriological examination.

(3) Treatment: most first line drugs are safe with incidence of congenital malformation well within the range of control population;3 drug regimen isoniazid, ethambutol and rifampicin for 8 weeks and isoniazid and rifampicin for 9 months. Pyridoxine 50mg; breastfeeding: only active lesions is contraindicated.

(4) Chemoprophylaxis for pregnant women: isoniazid prophylaxis is highly effective and not shown to be teratogenic in standard dosage.

Chapter48 Local Abnormalities

1. Congenital Uterine Anomalies.

(1) Obestetric problem in congenital uterine anomaly: preterm delivery, miscarriage, recurrent malpresentation, rarely torsion in gravid horn of uterus didelphys.

(2) Diagnosis: hysterosalpingogram, ultrasound, MRI is costly but by far is the best-treatment: surgical correction, cervical circlage.

2. Retroversion Uterus.

(1) Symptoms of incarceration: urinary frequency, dysuria and retention of urine overflow incontinence, rectal pressure and tenesmus, spontaneous abortion, preterm labor and uterine dystocia.

(2) Diagnosis: clinical examination.

(3) Treatment: in dwelling catheterization, spontaneous correction, manual reposition.

3. Fibroid in Pregnancy.

(1) Effect of pregnancy on fibroids: red degeneration:

1) Etiology: relative ischemia resulting in necrosis within fibroid. Larger fibroids are more prone to degenerate.

2) Symptoms and signs: acute onset of abdominal pain of all grades of severity with temperature raised and frequently associated vomiting; tenderness at the site of the fibroid.

3) Treatment: rest, analgesic and good hydration.

(2) Diagnosis: apparent asymmetry of uterus should raise the possibility of fibroids. Sonography confirms the diagnosis with certainty.

(3) Differential diagnosis: retroverted gravid uterus, multiple pregnancy, ovarian tumor, nongravid half of variety of double uterus.

(4) Treatment: wait and observe, usual antenatal care; assessed at 38 weeks to formulate the method of delivery.

(5) Role of myomectomy in pregnancy: should not be performed except for pedunculated leiomyoma with a narrow stalk.

4. Adnexal Mass in Pregnancy.

(1) Common cause of adnexal mass in pregnancy.

(2) Differential diagnosis: lesion of colon, pedunculated leiomyoma, pelvic kidney, dongenital abnormalities of the uterus.

(3) Treatment: conservative: unilateral, mobile, cystic adnexal mass. indication of surgery: risk of rupture, torsion or malignancy; ideal time of surgery is 14-18 weeks via laparotomy or laparoscopy. Any adnexal lesion that is present after 14 weeks of

gestation, growing in size on serial ultrasound evaluation, contains solid and complex components or internal papillae, is fixed, surrounded by abdominal ascites, or is symptomatic warrants surgical exploration and pathologic diagnosis.

5. Carcinoma of Ovary.

(1) Treatment: like for nonpregnant status. Generous surgical incision, surgical staging, histologic diagnosis.

(2) In more advanced stage: the extent of surgery depend upon gestational age and patient wish with regard to the pregnancy; neoadjuvant chemotherapy.

6. Torsion of Adnexa.

(1) Symptoms and sign: acute abdominal pain and tenderness, shock and peritonitis.

(2) Diagnosis: ultrasound: adnexal mass and altered blood flow on doppler studies.

(3) Treatment: prompt operation, previously untwisting of adnexal mass was not advocated.

7. Premalignant and Malignant Lesions of Cervix.

(1) Clinical presentation: majority of patients in stage one are diagnosed on routine examination. A perspeculum examination of cervix is must if bleeding persists for more than 5-7 days.

(2) Diagnosis: routine cervical cytology screening; any abnormality repeated in the pap smear must be followed by colposcopy; endocervical curettage is not recommended.

(3) Treatment:

1) Premalignant lesions: a close follow-up throughout the pregnancy, re-evaluation must be done 6-8 weeks postpartum.

2) Carcinoma cervix during pregnancy: stage Ia, Ib1, IIa1: early radical hysterectomy with therapeutic pelvic lymphadenectomy, late stage Ib2 IIb, IIIb: radiotherapy with or without chemotherapy.

8. Other Lesions of Cervix.

(1) Scarring of cervix: these patients should be delivered in hospital as rate of cesarean section is very high.

(2) Cervical polyp: can cause intermittent bleeding during pregnancy and their removal is advisable.

9. Vaginal Discharge in Pregnancy.

(1) Physiological vaginal discharge of pregnancy: increase in vaginal transudate.

(2) Symptoms, diagnosis, treatment of vulvovaginal candidiasis, trichomonas vaginitis and bacterial vaginosis.

10. Genital Prolapse in Pregnancy.

(1) Effect of pregnancy on prolapse: aggravation of grade of prolapse due to weight of the uterus and increased vascularity.

(2) Effect of prolapse on pregnancy.

(3) Treatment: reducible prolapse during pregnancy: packing done with gauge soaked with glycerin and acriflavin; irreducible prolapse and incarceration of uterus: termination of pregnancy.

11. Breast Cancer.

(1) Clinical presentation: a painless lump, bloody nipple discharge, mass.

(2) Investigation: breast ultrasonography, mammography, MRI, FNAC, core biopsy, excisional biopsy.

(3) Treatment: the general approach is like in non-pregnant patients and should not be delayed because of pregnancy: modified radical mastectomy, breast conserving surgery, chemotherapy.

Chapter49 Infection During Pregnancy

1. Torch Infection-General Consideration.

(1) Definition of torch infection.

1) Toxoplasmosis.

Definition of toxoplasmosis.

Etiology.

Clinical presentation: fetal effects include subclinical disease, growth retardation and severe effects on multiple systems.

Management: spiramycin, pyrimathamine, sulfonamide and folinic acid treatment.

2) Rubella (germanmeasle).

Clinical presentation: spontaneous abortion, congenital rubella syndrome, and CNS manifestation.

Diagnosis: positive IgG and IgM titers, PCR or viral culture.

Management: the MMR vaccine for all women of childbearing age.

3) Cytomegalovirus-general consideration.

Etiology.

Diagnosis: symptomatic congenital CMV infection syndrome.

Investigation: congenital CMV detection.

Management: doing counseling, intravenous ganciclovir.

4) Herpes simplex virus-general consideration.

Etiology.

Neonatal infection: forms of newborn infection.

Diagnosis: cell culture, PCR, type-specific HSV serologic assays.

Management: antenatal: systemic acyclovir treatment. Intrapartum: the timing of cesarean delivery and delivery vaginally; postpartum: precautions for breastfeeding.

2. Other Viral Infections in Pregnancy.

(1) Varicella zoster.

1) Fetal effect: congenital varicella syndrome.

2) Prevention: passive immunization, varicella vaccination: contraindicated in pregnancy.

(2) Parvovirus B19 infection.

1) Diagnosis: serologic assays of IgM and IgG, PCR for fetal infection.

2) Management: serial ultrasound scans, no B19 vaccination.

3. Other Infections.

(1) Syphilis.

1) Fetal effect.

2) Diagnosis: obstetric history, late abortion, still-birth, congenital syphilitic baby.

3) Laboratory investigation: VDRL and FTA-Abs for mother; PCR of treponema pallidum for fetal infection.

4) Management: the penicillin regimen.

5) Prevention: prevention of congenital syphilis, appropriate treatment and follow-up. Group β streptococcal.

6) Diagnosis: group β streptococcal culture from cervix, vaginal fornix and rectum.

7) Prevention strategies: risk based approach, culture based approach.

(2) Malaria-general consideration.

1) Effect of pregnancy on malaria and vice versa.

2) Clinical presentation: high grade fever with chills and rigors, myalgia which may occur at interval.

3) Diagnosis: clinical symptoms, identification of intracellular malaria organism on a blood smear.

4) Treatment: prevention, prophylaxis, the antimalarial medicine.

Chapter50 Malpresetation and Malposition

1. Definition of malpresentation and malposition.
2. The types, courses of malpresentation.
3. Management of breech, face, brow, transverse lie and shoulder presentation.
4. The complications in breech delivery: maternal and fetal.
5. The causes and risk factors of cord prolapse.

Chapter51 Dystocia and Cephalopelvic Disproportion

1. Causes of dystocia-abnormalities of the powers, the passage and passenger.
2. Clinical presentation, diagnosis and measure of prevention and treatment of abnormalities of the powers, the passage and passenger.
3. Definition, diagnosis and management of contracted pelvis.
4. Definition and management of Bandl's (pathological retraction) Ring.

Chapter52 Postpartum Hemorrhage

1. Definition, classification, causes, clinical presentation and diagnosis of postpartum hemorrhage.
2. Prevention and treatment on postpartum hemorrhage.
3. Clinical presentation and management of secondary postpartum hemorrhage.

Chapter53 Puerperium

1. Definition of peurperium and three parts of postpartum period.
2. Anatomical and physiological changes in puerperium: uterus, lochia, cervix, vagina, ovulation, urinary tract, abdominal wall, cardiovascular system, lactation and breastfeeding.
3. Care during puerperium: objective in management, immediate care including pulse and blood pressure monitoring and care of valve and episiotomy, conduct and management of normal puerperium, and follow up visits.
4. Abnormal puerperium: puerperal fever, septic pelvic thrombophlebitis, mastitis, breast abscess, urinary tract infection, wound infection, puerperal venous thrombosis,

postpartum neuropsychiatric complications, postpartum psychosis and postpartum thyroiditis.

Chapter54 Essential of Normal Newborn Assessment and Care

1. Delivery room management: prenatal and intrapartum history and routine care to all newborn.

2. Apgar score: definition, measurement and classification.

3. Measurement: weight, head circulation, length, top to toe check including head, eye, ear, mouth, chest, abdomen, genitalia, limbs and skin.

4. Newborn screening and prophylaxis: phenylketonuria, congenital hypothyroidism, congenital syphilis, ABO incompatibility and hearing loss.

5. Routine care of newborn: estimation of gestational age, temperature, care of cord, skin care, feeding (including benefits and contraindications), voiding and stooling, weight, icterus neonatorum and immunization.

6. Neonatal resuscitation: asphyxia, primary and secondary apnea, causes of compromised neonatal infant, protocol of neonatal resuscitation, based steps and chemical resuscitation, indication and technique of endotracheal intubation, and ethical issues in neonatal resuscitation.

Chapter55 Special Topics in Obstetrics

1. Obstetric Anesthesia and Analgesia.

(1) Conceptive evolvement of obstetric analgesia and anesthesia.

(2) Pain during labor: cause and location of pain in 1st stage of labor, 2nd stage of labor.

(3) Ideal analgesia and anesthesia in labor: easy to administer, reversible, predictable and good analgesia, safe for mother and baby, ambulate, no interfere with uterine contraction, no affect on mother's conscious level, no long term effect on women.

(4) Method of obstetric analgesia and anesthesia: nonpharmacological method of pain relief, inhalational agent, systemic injection of opioid or similar drugs, regional nerve blocks.

(5) Anesthetic option for cesarean delivery: general anesthesia, spinal anesthesia, epidural anesthesia.

2. Trauma in Pregnancy.

(1) Etiology: physical abuse and domestic violence, sexual assault, automobile accident, penetrating injuries: suicidal, homicidal assault, accidental violence, burns.

(2) Complications:

1) Maternal complications: abruptio placenta, DIC, shock, hemorrhage, hypovolemia, uterus rupture, respiratory distress, spinal cord injury, brain death or mortality.

2) Fetal complications: preterm labor, premature rupture of membrane and delivery. Placental abruption, fetal skull injury, fetal hypoxia, shock, death.

(3) Principles of management: emergency resuscitation: establishing ventilation and control of hemorrhage, evaluation of maternal and fetal injuries, indication of direct

peritoneal lavage, fetal monitoring.

(4) Indication of cesarean section in trauma: damage to uterine vessels, laceration or rupture of uterus, mechanical obstruction by gravid uterus, risk of potential injury to fetus, unstable thoracolumbar spinal injury with mature fetus, evidence of worsening DIC, persistent maternal shock/imminent maternal death.

3. Antepartum Fetal Surveillance.

(1) Indications of antepartum fetal surveillance: obstetric complication, medical complication, previous adverse pregnancy.

(2) Fetal movement record: A simple, inexpensive and non-invasive method of fetal monitoring in late pregnancy, abnormality need further evaluation, high false positive rate.

(3) Nonstress test (NST): fetal heart rate baseline, variability, and response to fetal movement; interpretation of reactive NST and nonreactive NST; positive predictive value less than 50%, negative predictive value more than 90%

(4) Contraction stress test (CST): fetal heart rate pattern in response to uterine contraction, interpretation of positive CST, negative CST and equivocal CST; positive predictive value less than 50%

(5) Biophysical profile (BPP score): a composite of five parameters-fetal tone, movements, breathing, non-stress test and amniotic fluid volume; interpretation of manning score; false positive rate of 20%, false negative rate of 0.6 per 1000.

(6) Doppler velocimetry: doppler velocimetry of umbilical artery, middle cerebral artery doppler, doppler of fetal venous circulation.

4. Intrapartum Fetal Surveillance.

(1) The aim: to identify early signs of fetal hypoxia during labor, timely intervention to prevent irreversible fetal brain damage or death.

(2) Intermittent auscultation: auscultation for 1 minute at interval of 15 minutes in 1st stage of labor and every 5 minutes in 2nd stage in presence of risk factors, auscultation at least every 30 minutes during the active phase of the first stage and at least every 15 minutes during the second stage.

(3) Continuous electronic fetal heart rate monitoring: risk factors, advantages, interpretation of EFM, and management of abnormal EFM.

(4) Fetal scalp blood sampling (FBS): fetal scalp capillary blood for pH assessment, interpretation of fetal scalp pH: pH $\geqslant$ 7.25-reassuring, pH$\geqslant$ 7.20-indeterminate, pH $<$7.20-non-reassuring.

(5) Fetal pulse oxymetry: to assess fetal oxygenation, no endorsed in clinical practice by ACOG.

5. Obstetric Ultrasound.

(1) Indication: antepartum screening of fetal anatomy, fetal environment, growth and well-being.

(2) Ultrasound scan during pregnancy: component of 1st, 2nd and 3rd trimester ultrasound scan, helpful landmark of early pregnancy.

(3) Basic requirement of fetal anatomic examination: evaluation of the cerebral ventricles, four chamber view of the heart, spine, stomach, bladder, cord insertion, kidney and limbs.

(4) Ultrasound diagnosis of common fetal anomalies: anencephaly, encephalocele: cystic hygroma, heart defect, diaphragmatic hernia, esophageal atresia, duodenal atresia, gastroschisis, omphalocele, potter syndrome, hydrops fetalis.

(5) Other use of ultrasound scan during pregnancy: fetal weight, amniotic fluid index, placenta and umbilical cord, fetal biophysical profile, doppler ultrasound.

(6) Detection of chromosomal anomalies or down syndrome: nuchal fold >5mm, echogenic bowel, short humers, short femur, echogenic intracardiac focus, pyelectesis, any two minor markers.

(7) Ultrasound markers in twin pregnancy: evidences of dichorionicity by evaluation of chorionicity: separate sac in the first trimester, separate placenta, different genders, thick intertwine septae, presence of chorionic peak (didi sign, twin peak sign).

Chapter56 Critical Care Obstetrics

1. Hemorrhagic Shock.

(1) Etiology: postpartum or postabortal hemorrhage, ectopic pregnancy, placenta previa.

(2) Pathophysiology: early phase (compensatory phase), intermediate phase (reversible phase), late stage (irreversible).

(3) Management: stop the cause of bleeding, infusion and transfusion, maintenance of cardiac efficacy, oxygen administration, hematocrit monitoring.

2. Septic Shock (Endotoxic Shock).

(1) Definition.

(2) Etiology: infected abortion, postoperative endometritis, chorioamnionitis, antepartum pyelonephritis.

(3) Symptoms and signs: preshock, early shock (warm shock), late shock.

(4) Common cause of maternal death: respiratory insufficiency secondary to adult respiratory distress syndrome.

(5) Fetal harm: hypoxia, acidosis, placental abruption and fetal death.

(6) Treatment: broad spectrum antibiotic regimen, surgical intervention to remove the cause, supportive control of fever, cardiovascular support.

3. Amniotic Fluid Embolism.

(1) Characteristics: abrupt onset of hypotension, hypoxia and consumption coagulopathy.

(2) Pathogenesis: enter of the amniotic fluid particulate to maternal venous circulation, immunological and humoral reaction, multi organ failure, disseminated coagulopathy.

(3) Diagnosis: high risk factors; symptoms and signs: sudden hypotension and shock, sudden onset of acute fetal distress, pulmonary edema or adult respiratory distress syndrome, cardiopulmonary arrest, maternal cyanosis, coagulopathy, convulsion; laboratory findings.

(4) Treatment: cardiopulmonary resuscitation, immediate oxygen and intubation, vasopressor, blood transfusion, treatment of coagulopathy.

4. Pulmonary Thromboembolism.

(1) Women are at higher risk of venous thromboembolic disease in pregnancy and puerperium.

(2) Diagnosis:

1) High risk factor: deep vein thrombosis (DVT).

2) Classic symptoms: hemoptysis, chest pain, dyspnea/chest pain, apprehension.

3) Physical findings: tachycardia, tachypnea, pulmonary rates, wheezing and pleural friction rub; non-invasive doppler studies as an initial diagnostic test for suspected DVT.

(3) Treatment: correction of arterial hypoxemia and hypotension, intravenous heparin, leg elevation sedation for symptomatic relief and alleviate anxiety.

PRACTICAL

Chapter 5 Embryology

1. Imperforate hymen: diagnosis and treatment.

2. Vaginal aplasia: diagnosis and treatment.

3. Disorder of uterus: diagnosis and treatmen of various types of disorder of uterus (uterus didelphys, bicornuate uterus, unicornuate uterus and septate uterus); postoperative management.

Chapter 7 Pediatric and Adolescent Gynecology

1. Workup of Delayed or Interrupted Puberty.

(1) Causes of delayed puberty: hypergonadotropic hypogonadism, hypogonadotropic hypogonadism and eugonadism.

(2) Management of delayed puberty.

2. Workup of Patients With Precocious Puberty.

(1) History and physical examination.

(2) Laboratory and radiological investigation.

(3) Management of precocious development: GnRH-dependent precocious puberty and GnRH independent precocious puberty.

3. Workup of Growth Problem in Normal Adolescents.

(1) Investigation.

(2) Short stature management: hormone therapy (recombinant growth hormone, GnRH agonist or aromatase inhibitor).

(3) Tall stature management: high doses of estrogen therapy.

Chapter 25 Pelvic Organ Prolapse (POP)

1. History taking and in-class discussion to understand the symptoms and risk factors for POP.

2. Models and pictures to illustrate the staging system of POP: baden walker halfway system and pelvic organ prolapse-quantification (POP-Q) system.

3. Pictures to illustrate the application of pessaries.

4. Video and models to demonstrate various types of surgical measures of POP.

Chapter 26 Urinary Incontinence

1. History taking and in-class discussion to understand the symptoms of urinary incontinence.

2. Pictures to illustrate urodynamic studies.

3. Video and pictures to demonstrate various types of conservative and surgical treatment of urinary incontinence.

Chapter28 Contraception

1. Clinical Management of IUD.

(1) Patient selection.

(2) Contraindications to use of an IUD.

(3) Timing of insertion.

(4) Technique of insertion.

2. Female Sterilization.

(1) Timing of sterilization: any time according to suitability of the patient.

(2) Surgical techniques: pomeroy procedure, modified pomeroy procedure, irving method, madlener technique and uchida technique.

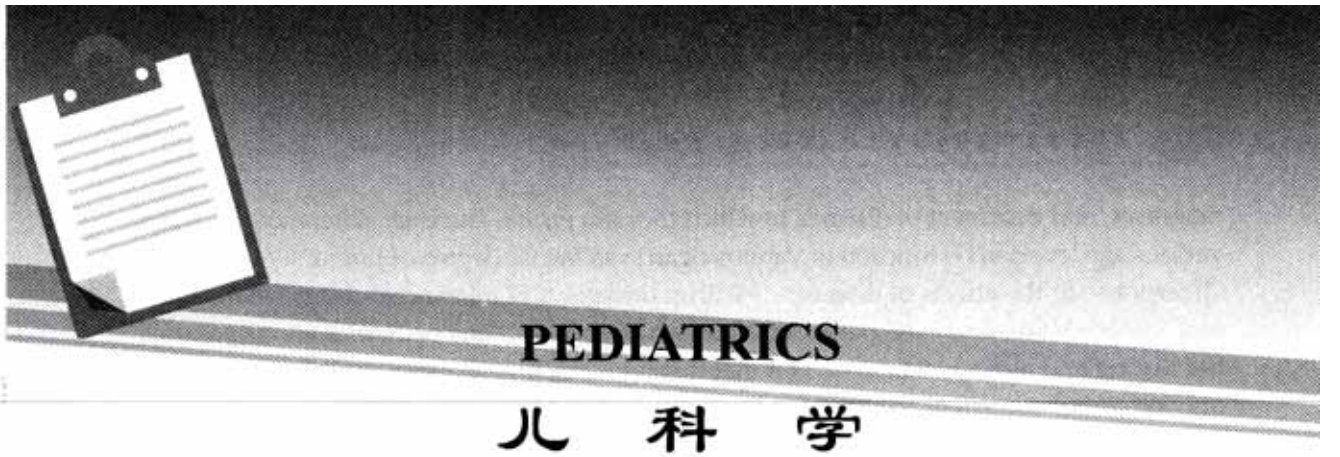
(3) Risk of tubal sterilization.

(4) Long-term complications: risk of ectopic pregnancy and post tubal ligation syndrome.

3. Male Sterilization.

(1) Technique.

(2) Follow-up: failure rate, long-term effects and short-term complications.



PEDIATRICS

儿 科 学

Chief Editors（主编）

Zheng Rongxiu（郑荣秀） Tianjin Medical University（天津医科大学）
Liu Geli（刘戈力） Tianjin Medical University（天津医科大学）
Song Hongmei（宋红梅） Peking Union Medical College Hospital（北京协和医院）

Deputy Chief Editors（副主编）

Kan Xuan（阚璇） Tianjin Medical University（天津医科大学）
Wei Ying（魏莹） Tianjin Medical University（天津医科大学）
Jiang Lihong（姜丽红） Tianjin Medical University（天津医科大学）

Editors（编委）（按姓氏拼音排序）

Jiang Lihong（姜丽红） Tianjin Medical University（天津医科大学）
Kan Xuan（阚璇） Tianjin Medical University（天津医科大学）
Liu Geli（刘戈力） Tianjin Medical University（天津医科大学）
Ma Yunxia（马云霞） Tianjin Medical University（天津医科大学）
Mu Qing（穆青） Tianjin Medical University（天津医科大学）
Song Hongmei（宋红梅） Peking Union Medical College Hospital（北京协和医院）
Wang Jing（王静） Tianjin Medical University（天津医科大学）
Wei Ying（魏莹） Tianjin Medical University（天津医科大学）
Xin Yue（辛玥） Tianjin Medical University（天津医科大学）
Zhang Shanshan（张姗姗） Tianjin Medical University（天津医科大学）
Zhang Ying（张颖） Tianjin Medical University（天津医科大学）
Zheng Rongxiu（郑荣秀） Tianjin Medical University（天津医科大学）

Course Description

Pediatrics is concerned with the health, growth and development of children; and their opportunity to achieve full potential as adults. As pediatricians who assume a responsibility for children's physical, mental, and emotional progress from conception to adolescents, pediatricians must be concerned with social and environmental influences, which have a major impact on the health and wellbeing of children and their families, as well as with particular organ systems and biologic processes. Pediatrics, as a comprehensive medical science subject, is concerned with the mental, psychological, and physical health of infants, children, and adolescents; their growth and development; the prevention,

diagnosis, and treatment of diseases to which they are prone. There are differences for these various age levels in (1) function of various ogan systems, (2) degree of immunity to disease, (3) response to the effects of disease, (4) drug dosages and toleranceto drugs, (5) mental and motor ability, and (6) patternof emotional response. Thus pediatrics encompasses a fascinating and almost endless variant that distinguishes it from other specialties that focus only on certain system or regions of th body tt are related entirey to adults, who are more or less of similar size and maturity of function. These differences between children and adults have been summed up in the statement, "The child is not a little man." Increasing attention also has been given to behavioral and social aspects of child health.

Objectives

At the end of the course, the student shall be able to:

1. Master each stage of growth in children and its characteristics.
2. Master each index of child growth and development (including measure methods, normal data, calculations etc).
3. Master the knowledge of preventive inoculation.
4. Master the physical features of the newborn infants.
5. Master the characteristics, diagnosis and treatment of different neonatal diseases.
6. Master the clinical manifestations, diagnosis and treatment of children's diseases in different systems.
7. An understanding of the normal growth and developmental processes from conception to adolescence.
8. The basic knowledge of the anatomy, physiology, pathology, immunology, etc. unique to each age group.
9. Be familiar with the characteristics of pediatrics.
10. As well as basic skills to perform clinical assessment in pathogenesis and therapeutic management of disease common to children.

At the end of the course, the student shall be able to practice the following skills, such as manage asphyxial newborn, including being prepared for resuscitation and initial steps of resuscitation, using resuscitation bag, mastering how to do the lumbar puncture, read ECG and X-ray correctly, etc. Be able to analyze common clinical cases.

Teaching and Learning Methods

Theory: Teaching pediatrics to medical students is provided with the help of lectures and tutorials that deal with the principles of physiopathology of children's diseases.

Practical: Practical training asks for medical students are to know the basic principles, methods and techniques, strategies, and skills by the clinical observation, physical examination and clinical procedures.

Recommended Reference books

Barkin Rosen. 1999. Emergency Pediatrics [M]. 5th ed. New York: McGraw-Hill Medical.

Fricia Lacy Gomella. 2004. Neonatology [M]. 5th ed. New York: McGraw-Hill Medical.

Robert M, Bonita F, Nina F, Joseph W, et al. 2011. Nelson Textbook of Pediatrics [M]. 19th ed. Philadelphia: Elsevier.

Tom Lissauer, Graham Clayden. 2001. Illustrated textbook of Pediatrics [M]. 2nd ed Philadelphia: Elsevier.

William W, Anthony R, Myron J, et al. 2001. Current Pediatric Diagnosis and Treatment [M]. 15th ed. New York: McGraw-Hill Medical.

Schedule Table

Chapter	Contents	Hours
1	Introduction	1
2	Growth and development and health care	4.5
3	Neonatal and neonatal diseases	
3.1	Introduction of neonate and neonatal diseases	3
3.2	Asphyxia of newborn	2.5
3.3	Hypoxic-ischemic encephalopathy	2.5
3.4	Respiratory distress syndrome	2.5
3.5	Neonatal Jaundice	5.5
4	Nutritional disorder	
4.1	Introduction of nutritional disorder	1
4.2	Protein-calorie malnutrition	1
4.3	Rickets of Vitamin D deficiency	2
4.4	Tetany of Vitamin D deficiency	0.5
5	Infective diseases	
5.1	Measles	1
5.2	Rubella	0.5
5.3	Exanthen subitum	0.5
5.4	Chickenpox	0.5
5.5	Scarlet fever	1

Continued

Chapter	Contents	Hours
5.6	Mumps	0.5
5.7	Infectious mononucleosis	4.5
5.8	Whooping cough	0.5
5.9	Shigellosis	2
5.10	Acute bacterial meningitis	2
5.11	Viral meningoencephalitis	2
5.12	Tuberculosis	4
6	Digestive system	
6.1	Characteristics of the digestive tract in a child	1
6.2	Major symptoms of digestive tract disorder	1
6.3	Infantile diarrhea	4
6.4	Gastroesophageal reflux	1
6.5	Peptic ulcer	1
7	Diseases of the respiratory system	
7.1	Anatomical and physiological characteristics	1
7.2	Pneumonia	5
8	Cardiovascular system disease	
8.1	Anatomical and physiological characteristics	1
8.2	Congenital heart diseases	1
8.3	Ventricular septal defect	0.5
8.4	Atrial septal defect	0.5
8.5	Patent ductus arteriosus	0.5
8.6	Tetrealogy of fallot	0.5
8.7	Myocarditis	2
9	Urinary system disease	
9.1	Acute glomerulonephritis	3
9.2	Nephrotic syndrome	3
10	Blood system diseases	
10.1	Features of the blood system in children	0.5
10.2	Anemia	0.5
10.3	Nutritional iron deficiency anemia	1
10.4	Nutritional megaloblastic anemia	1
11	Immunologic system	
11.1	Characteristics of the immunologic system	1
11.2	Immunodeficiency diseases	1
12	Endocrine system genetics	
12.1	General introduction	1
12.2	Congenital Hypothyroidism	4
12.3	Disturbance of growth	3
12.4	Down's syndrome	2
13	Connective tissue diseases	
13.1	Rheumatic fever	2
13.2	Muco-cutaneous lymph node syndrome	2
	Total	90

Course Contents

THEORY

Chapter 1 Introduction

1. Introduce the range and task of pediatrics.
2. Emphasize the stage of each age of children and its characteristics.
3. Introduce the foundation and clinical characteristics of pediatrics.

Chapter 2 Growth and development and health care

1. Introduce the law and influencing factors of child growth and development.
2. Emphasize each index of child growth and development (including measure methods, normal data, calculations etc.).
3. Emphasize the law of nervous system development of child.
4. Emphasize the content and sequence of preventive inoculation.

Chapter 3 Neonate and neonatal diseases

Chapter 3.1 Introduction.

1. Introduce the definition of perinatology and neonatal period.
2. Introduce the factors that influence fetus'growth and development.
3. Emphasize the classification of newborn infants, including term infant, pre-term infant, post-term infant, LGA, SGA, AGA, normal birth weight, low birth weight, very low birth weight and macrosomia.
4. Emphasize the physical features of newborn infants, including attributes, respiratory system, circulatory system, urinary system, hematological system, alimentary system, nervous system, immune system, thermoregulation, skin, umbilical cord, water metabolism and high risk neonates.
5. Know several physiological states of newborn infants, including physiologic jaundice, pseudomenstration, and enlargement of the breasts, hymenal tags, milia and erythema toxicum.
6. Know the characteristics and physiological handicaps and clinical hazards of preterm infants.

Chapter 3.2 Asphyxia of newborn.

1. Introduce the definition of asphyxia of newborn infants.
2. Introduce etiology and pathophysiology.
3. Emphasize clinical manifestations, especially Apgar Score.
4. Emphasize management, including being prepared for resuscitation and initial steps of resuscitation (maintenance of temperature, establish an open airway, initiate breathing and maintain circulation).

5. Introduce the laboratory findings and complications.

Chapter 3.3 Hypoxic-ischemic encephalopathy.

1. Introduce the conception of hypoxic-ischemic encephalopathy of newborn infants.

2. Introduce etiology, pathophysiology and pathology.

3. Emphasize clinical manifestations, including mild, moderately and severe HIE.

4. Emphasize diagnosis, especially the stages of hypoxic-ischemic encephalopathy in term infant.

5. Introduce treatment and prognosis.

Chapter 3.4 Respiratory distress syndrome.

1. Introduce the concept of respiratory distress syndrome.

2. Introduce etiology, pathophysiology and pathology.

3. Emphasize clinical manifestations.

4. Introduce management, diagnosis and prevention.

Chapter 3.5 Neonatal Jaundice.

1. Introduce the characteristics of newborn infants's bilirubin metabolism.

2. Emphasize characteristics of physiological jaundice and its mechanism.

3. Emphasize several common pathological jaundice, including hemolytic disease of newborn infants, hepatitis of newborn infants, germ infective jaundice, and congenital biliary atresia. Explain characteristics of clinical, diagnosis and therapy respectively.

4. Introduce the associated factors of kernicterus, prevention and cure method of jaundice. Emphasize the indication and method of phototherapy.

Chapter 4 Nutritional disorder

Chapter 4.1 Introduction of nutritional disorder.

Introduce child nutrition, including energy, proteins, lipids, carbohydrates, fibers, minerals and trace elements.

Chapter 4.2 Protein-calorie malnutrition.

1. Introduce definition, classification and etiology.

2. Enphasize pathogenesis and pathophysiology.

3. Master clinical manifestations.

4. Introduce complications, laboratory findings and diagnosis.

5. Introduce therapy, especially energy and protein supplementation for various degree of malnutrition.

Chapter 4.3 Rickets of Vitamin D deficiency.

1. Introduce appropriate definition.

2. Introduce etiology.

3. Emphasize the pathology and physiopathology of rickets of vitamin D deficiency (including parathyroid effect to metabolism of calcium and phosphorus).

4. Emphasize clinical manifestations (symptoms, signs, X-ray and biochemical examination).

5. Introduce differential diagnosis with rickets of anti-vitamin D.

6. Emphasize treatment, prevention, synthetical treatments (including outside

exercise, reasonable feeding, prevention of complication, use of vitamin D and calcium) and prevent froraccticeg vitamin D.

Chapter 4.4 Tetany of Vitamin D deficiency.

1. Introduce the appropriate of definition, chemical pathology and etiology.

2. Emphasize the clinical manifestations.

3. Emphasize diagnosis of the disease.

4. Introduce differential diagnosis with hypoglycemia, hypomagnesemia, epilepsy, infectiom of CNS and acute laryngitis etc.

5. Emphasize treatment.

Chapter 5 Infective diseases

Chapter 5.1 Measles.

1. Be familiar with measles virus, prevalence and pathogenesis.

2. Master the typical clinical manifestations of measles and clinical manifestations of other types.

3. Master the diagnostic evidence of measles and differential diagnosis between measles and other diseases of eruption, such as rubella, infectious mononucleosis, drug rash, meningococcemia and typhus.

4. Be familiar with complications (respiratory tract, encephalitis, digestive system, malnutrition and others).

5. Master treatment and prevention of measles.

Chapter 5.2 Rubella.

1. Introduce features of rubella virus and prevention.

2. Emphasize the typical clinical manifestations of rubella.

3. Emphasize the diagnostic evidence of rubell and differential diagnosis between rubella and other diseases of eruption, such as measles, roseola infantum, scarlet fever, varicella.

4. Introduce common complications (arthralgia and arthritis, encephalitis, and rubella in pregnancy).

5. Emphasize the treatment and prognosis.

Chapter 5.3 Exanthen subitum.

1. Introduce features of exanthen subitum virus.

2. Emphasize the typical clinical manifestations of exanthen subitum.

3. Introduce the treatment and prognosis.

Chapter 5.4 Chickenpox.

1. Introduce epidemiology and pathology.

2. Emphasize the clinical manifestations and features of rash.

3. Introduce common complications (cutaneous and systemic).

4. Introduce diagnosis and differential diagnosis.

5. Introduce treatment and prevention.

Chapter 5.5 Scarlet fever.

1. Introduce epidemiology and pathogenesis.

2. Emphasize the clinical manifestations.

3. Introduce diagnosis, differential diagnosis and treatment.

Chapter 5.6 Mumps.

1. Introduce features of the mumps virus, epidemiology, transmission and pathogenesis.

2. Emphasize the typical clinical manifestations of mumps.

3. Emphasizethe diagnosis and the differential diagnosis.

4. Introduce complications (orchitis and epididymitis, pancreatitis, oophoritis, nephritis, mumps in pregnancy and others).

5. Introduce the treatment and prevention.

Chapter 5.7 Infectious mononucleosis.

1. Introduce features of Epstein-Barr virus and transmission.

2. Emphasize the clinical manifestations and laboratory investigation.

3. Emphasize differential diagnosis and treatment.

Chapter 5.8 Whooping cough.

1. Etiology and epidemiology.

2. Clinical manifestations.

3. Complications (respiratory, neurological, gastrointestinal manifestation, hemorrhagic and severe malnutrition).

4. Diagnosis and differential diagnosis.

5. Treatment and prevention.

Chapter 5.9 Shigellosis.

1. Features of Shigellae and transmission.

2. The clinical manifestations.

3. Diagnosis and differential diagnosis.

4. Complication.

5. Treatment and prevention.

Chapter 5.10 Acute bacterial meningitis.

1. Introduce conception of acute bacterial meningitis.

2. Emphasize clinical manifestations and complications (subdural effusions, syndrome of inappropriate antidiuretic hormone with hyponatremia, ventriculitis and ependymitis, hydrocephalus and others).

3. Introduce the laboratory findings.

4. Master the diagnosis and differential diagnosis, especially CSF findings in several infectious meningitis.

5. Know treatment and prognosis.

Chapter 5.11 Viral meningoencephalitis.

1. Introduce concept of viral meningoencephalitis.

2. Emphasize the clinical manifestations.

3. Introdue the laboratory findings.

4. Master the diagnosis and differential diagnosis, especially CSF findings in several infectious meningitis.

5. Know the treatment and prognosis.

Chapter 5.12 Tuberculosis.

1. Introduce the concept of tuberculosis.

2. Emphasize the clinical manifestations, including initial tuberculosis, reinfection

pulmonary tuberculosis, tuberculous pleurisy, military tuberculosis, tuberculous meningitis and tuberculous lymphadenitis.

3. Emphasize the diagnostic tests and procedures the tuberculin test.

4. Introduce treatment.

Chapter 6 Digestive system

Chapter 6.1 Characteristics of the digestive tract in children.

The characteristics of the digestive tract in a child, including regurgitation, stools, protuberant abdomen, blood loss and jaundice.

Chapter 6.2 Major symptoms of digestive tract disorder.

The major symptoms of digestive tract disorder include vomiting, diarrhea, constipation and abdominal pain.

Chapter 6.3 Infantile diarrhea.

1. Understand the concept of infantile diarrhea.

2. Emphasize the pathophysiology and clinical manifestation of infantile diarrhea.

3. Emphasize the etiologic diagnosis of infantile diarrhea.

4. Introduce differential diagnosis of infantile diarrhea.

5. Emphasize treatment principles and methods.

6. Introduce the methods of prevention.

Chapter 6.4 Gastroesophageal reflux.

1. Introduce the definition of gastroesophageal reflux.

2. Introduce the classification of gastroesophageal reflux.

3. Introduce the pathophysiology of gastroesophageal reflux.

4. Emphasize clinical manifestations of gastroesophageal reflux, including vomiting, reflux esophagitis, Barrette's esophagus and systemic symptom.

5. Introduce diagnosis of gastroesophageal reflux.

6. Introduce treatment of gastroesophageal reflux, including general therapy, drug therapy and surgical therapy.

7. Introduce the prognosis of gastroesophageal reflux.

Chapter 6.5 Peptic ulcer.

1. Introduce the definition of the peptic ulcer.

2. Introduce etiology of the peptic ulcer, including primary peptic ulcer and secondary peptic ulcer.

3. Introduce pathophysiology of the peptic ulcer.

4. Emphasize the clinical manifestations of the peptic ulcer, including abdominal pain, vomiting, GI tract bleeding and perforation.

5. Introduce laboratory findings of the peptic ulcer.

6. Treatment of the peptic ulcer.

Chapter 7 Diseases of the respiratory system

Chapter 7.1 Anatomical and physiological characteristics of the respiratory system in children.

1. Understand the anatomical characteristics of the repiratory system in children.

including the upper airway and the lower airway.

2. Understand the physiologic characteristics of the respiratory system in children, including frequency and rhythm of respiration, type of respiration, volume of tidal air and blood gas analysis.

3. Introduce the immune characteristics.

Chapter 7.2 Pneumonia.

1. Emphasize the main symptoms and signs of pneumonia, and the appearance of serious pneumonia.

2. Emphasize characteristics of different pneumonia (adenovirus, staphylococcus aureus, syncytial virus, macoplasma, chlamydia).

3. Understand the complications of pneumonia (empyema, pyopneumothorax, bullae of lung).

4. Emphasize treatment of pneumonia including the treatment principle of the anti-bacteria medicine.

Chapter 8 Cardiovascular system disease

Chapter 8.1 Anatomical and physiological characteristics of the cardiovascular system in childre.

1. Understand the fetal circulation and circulatory changes after birth.

2. Introduce the heart rate and blood pressure of children.

Chapter 8.2 Congenital heart diseases.

1. Introduce the incidence, etiology and diagnostic techniques of congenital heart diseases.

2. Emphasize the classification and complications of congenital heart diseases.

3. Introduce the treatment.

Chapter 8.3 Ventricular septal defect.

1. The ventricular septal defect.

2. Pathophysiology.

3. Clinical manifestations.

4. The X-ray, ECG, UCG and cardiac catheterization of ventricular septal defect.

5. The treatment.

Chapter 8.4 Atrial septal defect.

1. The anatomy of the atrial septal defect.

2. Clinical manifestations.

3. The x-ray, ecg, ucg and cardiac catheterization of atrial septal defect.

4. The treatment.

Chapter 8.5 Patent ductus arteriosus.

1. The anatomy patent ductus arteriosus.

2. Clinical manifestations.

3. The x-ray, ecg, ucg and cardiac catheterization.

4. The treatment.

Chapter 8.6 Tetrealogy of fallot.

1. The anatomy.

2. Clinical manifestations.

3. The X-ray, ECG, UCG and cardiac catheterization.

4. The treatment.

Chapter 8.7 Myocarditis.

1. Definition, etiology, and pathology.

2. Clinical manifestations, laboratory exam, and diagnostic standard.

3. Differential diagnosis.

4. Treatment principle.

Chapter 9 Urinary system disease

Chapter 9.1 Acute glomerulonephritis.

1. Emphasize etiology and pathogenesis of acute glomerulonephritis.

2. Emphasize clinical manifestation of acute glomerulonephritis.

3. Emphasize urine and blood test of acute glomerulonephritis.

4. Introduce differential diagnosis acute glomerulonephritis.

5. Understand the treatment of the typical case and the severe case of acute nephritis (hypertensive encephalopathy, circulatory congestion, acute renal insufficiency).

Chapter 9.2 Nephrotic syndrome.

1. Emphasize pathophysiology of primary nephrotic syndrome.

2. Emphasize clinical manifestation and difference of simple nephrosis and nephritis nephrosis, (include onset age, laboratory examination, pathology, prognosis).

3. Introduce the common complications of primary nephrotic syndrome, (infection, disorder of electrolyte, adrenal crisis, etc.).

4. Emphasize the therapy of primary nephrotic syndrome, (corticosteroid and other therapy).

Chapter 10 Blood system diseases

Chapter 10.1 Features of the blood system in children.

1. Understand red blood cell system.

2. Understand white blood cell system.

3. Understand platelet system.

Chapter 10.2 Anemia.

1. Understand the definition of anemia.

2. Emphasize classification and manifestation of anemia.

3. Introduce the diagnose.

Chapter 10.3 Nutritional iron deficiency anemia.

1. Understand the definition of iron metabolism, including insufficient iron stores, insufficient iron intake, failure of iron absorption, rapid growth and development and iron loss.

2. Emphasize etiology.

3. Emphasize clinical manifestations, anemia and external marrow hemopoiesis and non-blood system manifestation.

4. Emphasize laboratory findings, including peripheral blood smears, serum iron,

serum ferritin, the total iron-binding capacity, free erythrocyte protoporphyrin and examination of bone marrow.

5. Introduce diagnosis, differential diagnosis and prevention.

6. Introduce the treatment.

Chapter 10.4 Nutritional megaloblastic anemia.

1. Introduce definition and pathology.

2. Emphasize etiology (inadequate intake, disorders of absorption and transport and increased requirement), manifestations (general manifestations, neurological symptoms and gastrointestinal symptoms), laboratory findings, diagnosis and treatment of vitamin B12 deficiency.

3. Emphasize etiology (inadequate intake, drug interaction, malabsorption, increased requirement and disorders of metabolism), manifestations, diagnosis and treatment of folic acid deficiency.

Chapter 11 Immunologic system

Chapter 11.1 Characteristics of the immunologic system.

1. Definition of immunologic system.

2. Classification of immunity.

3. Nonspecific and specific immunity.

Chapter 11.2 Immunodeficiency diseases.

1. Classification of immunodeficiency diseases.

2. Some common diseases due to immunodeficiency in children, including congenital hypogammaglobuinemia, infant transient hypogammaglobulinemia, selection IgA deficiency and congenital thymus dysplasia.

Chapter 12 Endocrine system genetics

Chapter 12.1 General introduction.

1. Introduce the general concept of endocrine system.

2. Introduce the hormone type.

Chapter 12.2 Congenital Hypothyroidism.

1. Understand the etiology and pathophysiology of sporadic and endemic congenital Hypothyroidism.

2. Emphasize the clinical manifestation of sporadic congenital Hypothyroidism.

3. Emphasize the diagnosis of sporadic congenital hypothyroidism.

4. Introduce differential diagnosis (mainly including 21-trisomy syndrome, hypogenesis of cartilage, rickets, mucopolysacchridosis type I.).

5. Understand the treatment, grasp the dosage of thyroxin tablets.

6. Emphasize the importance of prevention and treatment at an earlier stage.

Chapter 12.3 Disturbance of growth.

1. Introduce the target height and skeletal maturation.

2. Introduce etiology of short stature.

3. Introduce familial short stature and constitutional growth delay.

4. Emphasize growth hormone deficiency.

5. Introduce the diagnostic approach to short stature.

Chapter 12.4 Down's syndrome.

1. Introduce chromosomes & cell divisions, chromosome preparation & analysis and chromosome abnormalities.

2. Down's syndrome.

(1) Emphasize the clinical manifestation, include maladroit facial feature, fall of growth and development, mental retardation. Change of dermatoglyph, association of bowels deformity.

(2) Emphasize diagnosis, clinical features and the importance of exam of chromosome.

(3) Introduce laboratory tests, exam of chromosome.

(4) Introduce prevention, genetic consultation.

3. Master the clinical manifestation of sporadic congenital Hypothyroidism.

Chapter 13 Connective tissue diseases

Chapter 13.1 Rheumatic fever.

1. Understand the incidence, etiology, pathogenesis, and pathology.

2. Emphasize clinical manifestation.

3. Emphasize diagnostic standards (Jone's diagnostic standard).

4. Introduce differential diagnosis (fever disease—poststreptococcal infection syndrome, etc.).

5. Emphasize prevention and treatment.

Chapter 13.2 Muco-cutaneous lymph node syndrome.

1. Introduce the incidence, pathogenesis, and pathology.

2. Emphasize the clinical manifestation.

3. Emphasize diagnostic standards.

4. Introduce differential diagnosis (include scarlet fever, juvenile rheumatoid arthritis, erythema multiforma exudativum, systemic lupus eryhematosus).

5. Emphasize treatment.

6. Introduce prognosis.

PSYCHIATRY

精 神 病 学

Chief Editors（主编）
Chen Wei（陈炜） Zhejiang University（浙江大学）
Kuang Weihong（况伟宏） Sichuan University（四川大学）

Deputy Chief Editors（副主编）
Wang Liwei（王立伟） Fudan University（复旦大学）
Yuan Yonggui（袁永贵） Dongnan University（东南大学）
Li Jie（李洁） Tian Jin Medical University（天津医科大学）
Wang Gang（王刚） Capital Medical University（首都医科大学）

Editors（编委）（按姓氏拼音排序）
Chen Wei（陈炜） Zhejiang University（浙江大学）
Fu Yi（傅燚） Tongji University（同济大学）
Kuang Weihong（况伟宏） Sichuan University（四川大学）
Li Jie（李洁） Tian Jin Medical University（天津医科大学）
Wang Gang（王刚） Capital Medical University（首都医科大学）
Wang Liwei（王立伟） Fudan University（复旦大学）
Xü Luoyi（许洛伊） Zhejiang University（浙江大学）
Yuan Yonggui（袁永贵） Dongnan University（东南大学）
Zhang Lei（张磊） Zhejiang University（浙江大学）

Course Description

Psychiatry is the medical specialty devoted to the study of etiology, diagnosis, treatment, and prevention of mental illness. psychiatric conditions includes not only psychiatric diseases, but also psychological and social problems. Psychiatrists study categorization and diagnosis of mental disorder, organic mental disorder, systemic diseases induced mental disorder, substance-related mental disorder, schizophrenia, affective disorder, stress-related mental disorder, neurosis, psychology-related mental disorder, personality disorder, psychosexual disorder, childhood mental disorder Meanwhile, prevention and management of psychiatric disorder also make up important part of psychiatric practice.

Objectives

KNOWLEDGE

At the end of this course, all MBBS students should:

1. Be able to diagnosis and manage schizophrenia, mood disorders, organic mental disorders, neuroses and stress related disorders.
2. Be familiar with the assessment of mental illness.
3. Be familiar with the symptomology and diagnosis of mental illness.
4. Know how to prevent and manage accidents, including suicide, violence, intoxication, etc.
5. Get to overview the management of mental illness.
6. Know the role of counseling and psychological therapies in treatment of psychiatric disorders.

SKILLS

At the end of this course, the student should be able to:

1. Obtain objective and subjective information via interviewing patients.
2. Perform a complete mental status exam during the interview.
3. Collect information for comprehensive assessment.
4. Construct management plan.
5. Record clinical observation.

Teaching and Learning Methods

Lecture: Teaching is provided in the form of lectures and tutorials.

Practical: Practical training through inquires about the medical history and mental status examination.

Recommended Reference books

Michael Gelder, Richard Mayou, Philip Cowen. 2006. Shorter Oxford Textbook of Psychiatry. 3rd ed. Oxford: Oxford University Press.

Schedule Table

Chapter	Contents	Hours
1	Symptoms and signs of psychiatric disorders	2
2	Classification and diagnosis of Mental Disorder	2
3	Interviewing psychiatric patients	2
4	Organic mental disorder and substance related mental disorder	2
5	Schizophrenia and related disorders	2
6	Bipolar disorder	2
7	Major depressive disorder	2
8	Anxiety and obsessive-compulsive disorders and stress-related disorder	2
9	Personality disorder	2
10	Somatoform and dissociative disorders	2
11	Eating disorders and sleep disorders	2
12	Mental retardation	2
13	Child psychiatry	2
14	Management of mental disorder	2
15	Psychological treatment in psychiatry	2
	Total	30

Course Contents

THEORY

Chapter 1 Symptoms and Signs of Psychiatric Disorders

1. Introduction tomental symptoms.
2. Normal and abnormal mental states.
3. Conscious disturbance.
4. Dysmnesia.

Chapter 2 Classification and Diagnosis

1. Introduction to psychiatry, mental disorder and mental health.
2. The International Classification of Disease, Tenth Edition (ICD-10).
3. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, DSM-IV and DSM-V.
4. The historical perspective of psychiatry.

Chapter 3 Psychiatric Interview

1. Introduction to psychiatric interview.
2. Procedure of diagnosis.
3. Characteristics of non-collaborative psychiatric patient.
4. Basic skills of a psychiatrist.

Chapter 4 Organic Mental Disorder and Substance Abuse

1. Introduction to mental disorders due to brain organic disease.
2. Consciousness and consciousness disorder.
3. Intelligence, disturbance of intelligence and intelligence quotient.
4. Brain organic syndrome (acute brain syndrome, chronic brain syndrome, dementia syndrome and amnestic syndrome).
5. Common psychiatric symptoms of Alzheimer's disease (AD).
6. Concept of the psychoactive substance.
7. Tolerance, drug Dependence, withdrawal syndrome.
8. The Clinical manifestations and management of acute and chronic alcohol intoxication.
9. Mental disorders due to opioid.
10. Mental disorders due to amphetamine-type stimulants (ATS).

Chapter 5 Schizophrenia and Related Disorders

1. Introduction to schizophrenia.
2. Burden of disease about schizophrenia.
3. Positive (acute) and Negative (chronic) symptoms of schizophrenia.
4. Diagnostic Criteria of schizophrenia From Chinese Classification and Diagnostic. Criteria of Mental Disorders, the 3rd edition and DSM-IV/DSM-V, and therapeutic principle about of schizophrenia.
5. Management of schizophrenia.
6. Prognosis of schizophrenia.

Chapter 6 Bipolar Disorder

1. Introduction to bipolar disorder.
2. The burden of disease about bipolar disorder.
3. The Clinical manifestations of manic syndrome and depressive syndrome.
4. The diagnostic criteria of bipolar disorder.
5. Managementof bipolar disorder.
6. Risk factors related to the onset of the bipolar disorder.
7. Mood stabilizers.

Chapter 7 Major Depressive Disorder

1. Introduction to major depressive disorder.
2. The burden of disease about major depression.
3. The Clinical manifestations of depressive syndrome.

4. The diagnostic criteria of major depression.

5. Management of major depression.

6. Risk factors related to the onset of the major depression and risk factors induced by major depression.

7. First-line treatment: Selective serotonin reuptake inhibitor antidepressants.

Chapter 8 Anxiety and Dbsessiue-Compulsive Disorders and Stress-related Disorder

1. Introduction to anxiety disorders.

2. The clinical manifestations, diagnosis and management of panic disorder.

3. The clinical manifestations, diagnosis and management of generalized anxiety disorder.

4. The clinical manifestations, diagnosis and management of obsessive-compulsive disorder.

5. The clinical manifestations, diagnosis and management of phobia disorder.

6. Introduction to stress and stress related disorders.

7. The clinical manifestations and diagnosis of acute stress disorder.

8. The clinical manifestations and diagnosis of posttraumatic stress disorder.

9. The clinical manifestations and diagnosis of adjustment disorder.

Chapter 9 Personality Disorder

1. Introduction to personality traits and disorders.

2. Characteristics of personality disorders.

3. The psychotherapeutic and pharmacologic treatment strategies for patients with personality disorders.

Chapter 10 Somatoform and Dissociative Disorders

1. Introduction to somatoform and dissociative disorder.

2. The clinical manifestation of somatoform and dissociative disorders.

3. The diagnosis, differential diagnosis and therapeutic principle of somatoform and dissociative disorders.

4. The etiology and pathogenesis of somatoform and dissociative disorders.

Chapter 11 Eating Disorders and Sleep Disorders

1. Introduction toeating disorders and sleep disorders.

2. The Clinical manifestations of eating disorders and sleep disorders.

3. Management of eating disorders and sleep disorders.

4. The Clinical manifestations of eating disorders and sleep disorders.

Chapter 12 Mental Retardation

1. Introduction to mental retardation.

2. The Clinical manifestations and diagnosisd of mental retardation.

3. The relationship between mental retardation and mental illness.

4. Management of mental retardation.

Chapter 13 Child Psychiatry

1. Introduction to child psychiatry.
2. The characteristics of children's psychological development.
3. The history and examination of the child psychiatry.

Chapter 14 Psychiatric Treatment

1. Introduction to psychotropic drugs.
2. The indications, contraindications, administration and dosage, side effects of antipsychotics, antidepressants, antimanic drugs (mood stabilizers) and anxiolytics.

Chapter 15 Psychological Treatment in Psychiatry

1. Introduction to psychological treatment in psychiatry.
2. Different counseling approaches, e. g. behaviour therapy, cognitive therapy.
3. Applications with psychological treatment.

PRACTICAL

1. Taking medical history and writing the medical record of mental illness.
2. The skills, methods and content of mental status examination, and how to do mental status examination alone.
3. The diagnosis and treatment of schizophrenia, mood disorders, organic mental disorders, neuroses and stress related disorders.

NEUROLOGY

神 经 病 学

Chief Editors（主编）
Yang Yi（杨弋） Jilin University（吉林大学）
Yang Li（杨丽） Tianjin University（天津医科大学）

Deputy Chief Editor（副主编）
Jin Hang（靳航） Jilin University（吉林大学）

Editors（编委）（按姓氏拼音排序）
Guo Zhenni（郭珍妮） Jilin University（吉林大学）
Sun Xin（孙欣） Jilin University（吉林大学）
Yang Yi（杨弋） Jilin University（吉林大学）
Yang Li（杨丽） Tianjin University（天津医科大学）
Jin Hang（靳航） Jilin University（吉林大学）

Course Description

Neurology is a subject with a focus on the causes, mechanisms, pathology, clinical manifestation, diagnosis, differential diagnosis, relative body examinations, auxiliary examinations, treatments, and prognosis of common neurological diseases. In the guidance of a series of domestic and international guidelines, this subject also introduces the standardized treatments and prevention methods of neurological diseases. Utilizing multimedia, problem-oriented, and case-oriented teaching methods, this subject is able to cultivate students'creative-thinking process, problem-solving skills, and make students be familiar with teaching contents as well. Through the learning of Neurology, students will eventually be able to acquire the principles, clinical manifestations, relative body examinations, auxiliary examinations, treatments, and prognosis of common neurological diseases. Additionally, this subject will improve students'comprehensive-thinking process and clinical skills, thus laying a solid foundation for their future clinical practice.

Objectives

KNOWLEDGE

Know how to obtain a complete and reliable history.

Know how to perform a focused and reliable neurologic exam.

Be familiar with how to localize the likely site (s) of nervous system disturbance to account for symptoms and signs.

Be familiar with the use and interpret of common tests used in diagnosing neurologic diseases.

Grasp or be familiar with the general principles for recognizing, evaluating and managing neurologic diseases.

SKILLS

Be able to obtain a comprehensive or problem focused history.

Be able to perform an accurate, complete and thorough physical examination.

Be able to demonstrate a systematic approach to the management of common neurologic diseases.

Teaching and Learning Methods

Theory: Teaching neurology to medical students is provided with the help of lectures and tutorials that deal with general principles for recognizing, evaluating and managing neurologic diseases.

Practical: Practical training asks for medical students are to obtain a comprehensive or problem focused history, perform an accurate, complete and thorough physical examination. The student is advised to pay attention to demonstrate a systematic approach to the management of common neurologic diseases.

Recommended Reference books

Li Ou Tang. 2004. Clinical Neurology [M]. Beijing: People's Medical Publishing House.

R Jon L Walters, Adrian Wills, Philip Smith. 2007. Specialist Training in Neurology [M]. Singapore: Elsevier.

Schedule Table

Chapter	Contents	Hours	Chapter	Contents	Hours
1	Neurologic Investigation	2	6	Coma	4
2	The Neurologic Examination	4	7	Stroke	6
3	Disorders of Somatic Sensation	4	8	Polyneuropathies	6
4	Seizures and Syncope	4		Total	36
5	Movement Disorders	6			

Course Contents

THEORY

Chapter 1 Neurological Investigations

1. Indications and contraindications of lumbar puncture, normal CSF routine examination, biochemical test.

2. Cranial imaging studies: What CT, MRI, EEG, TCD are used for.

3. Spinal imaging studies.

4. Indications of electro physiologic studies, EMG, and tissue biopsy of neuromuscular junction.

Chapter 2 The Neurological Examinations

1. Commonly performed elements of the neurological examination.

2. Cranial nerves examination.

3. Medical research council grading of muscle power.

Chapter 3 Disorders of Somatic Sensation

1. Approach to diagnosis, including functional anatomy of the somatic sensory pathways, history, sensory examination, sensory changes and their significance.

2. Peripheral nerve lesions: classification, clinical findings, differential diagnosis and treatment.

3. Polyneuropathies: Guillain-Barré Syndrome.

4. Myelopathies: subacute combined degeneration.

Chapter 4 Seizures and Syncope

1. The concept of epileptic seizures, epilepsy, epilepsy syndrome.

2. The etiology and pathogenesis of epilepsy.

3. Clinical classification of seizures.

4. Classification and performance of epilepsy and epilepsy syndromes.

5. Auxiliary examinations: EEG and Brain imaging.

6. Diagnosis and differential diagnosis: pseudoepileptic seizures; syncope; migraine; transient ischemic attack.

7. Treatment: Etiological treatment, drug therapy and surgical treatment.

8. Treatment of status epilepticus.

Chapter 5 Movement Disorders

1. Types of abnormal movements.

2. Clinical evaluation of patients.

3. Diseases & syndromes manifested by abnormal movements: including Sydenham's chorea, Wilson's disease, Gilles de la Tourette's syndrome.

Chapter 6 Coma

1. The concept of coma.

2. Emergency management of coma patients.

3. Assessment of coma patients and differential diagnosis, including laboratory and radiological studies.

4. The etiology of coma.

5. Treatment and prognosis of coma.

Chapter 7 Stroke

Section 1

1. The concept and classification of stroke.

2. Cerebrovascular anatomical characteristics, cerebral blood circulation, including the cerebral arterial system and the cerebral venous system. The composition of Willis ring.

3. Epidemiology and prevention of cerebrovascular diseases.

Section 2

1. The concept of cerebral infarction and a brief overview, including etiology pathological change.

2. Clinical manifestations: internal carotid artery system cerebral infarction, vertebrobasilar system cerebral infarction and common clinical syndromes.

3. Auxiliary examination, diagnosis and differential diagnosis of the cerebral infarction.

4. The treatment and prognosis of cerebral infarction: thrombolysis and thrombectomy.

Section 3

1. Concept of cerebral hemorrhage, refers to the primary non-traumatic brain parenchymal hemorrhage.

2. Common cause pathogenesis and common sites of cerebral hemorrhage.

3. Clinical manifestations of cerebral hemorrhage, including basal ganglia hemorrhage, lobar hemorrhage, brainstem hemorrhage, cerebellar hemorrhage and intraventricular hemorrhage.

4. Auxiliary examination of cerebral hemorrhage.

5. Diagnosis and differential diagnosis, treatment and prognosis of cerebral

hemorrhage.

Section 4

1. Concept and classification of SAH, including etiology and risk factors pathogenesis of subarachnoid hemorrhage.

2. Pathology: the site of intracranial aneurysms.

3. Clinical manifestations.

4. Auxiliary examination, diagnosis and differential diagnosis of SAH.

5. Treatment and prognosis of subarachnoid hemorrhage.

Chapter 8 Peripheral Neuropathy

Section 1

1. Anatomy and physiology of peripheral nerve.

2. Causes of peripheral nerve and classifications of peripheral neuropathy.

3. Clinical manifestation of common peripheral neuropathy.

4. Auxiliary examinations, diagnosis and treatments of peripheral neuropathy.

Section 2

1. Trigeminal neuralgia: Anatomy of trigeminal nerve: Diagnosis of trigeminal neuralgia, differential diagnosis and treatments.

2. Bell palsy: anatomy and function of facial nerve, causes and pathology of bell palsy.

3. Auxiliary examinations and treatments of Bell palsy: medications, physical therapy, acupuncture, surgery.

Section 3

1. Polyneuropathy: common causes of polyneuropathy, pathology of polyneuropathy, clinical manifestation, treatments: etiological treatment, special treatment.

2. Acute inflammatory demyelinating polyneuropathy: Concept and sub-types of AIDP, causes and pathology of AIDP, clinical characteristics, auxiliary examinations, diagnosis, differential diagnosis of AIDP and other sub-types of AIDP, treatments of AIDP and prognosis of AIDP.

PRACTICAL

1. The clinical manifestations and common causes of advanced nerve activity.

2. The clinical manifestation and localization of movement system damage, extrapyramidal system damage and cerebellum lesion.

3. The clinical manifestation of sensory disturbance and the indication of the changes on reflexes.

4. Principles of neurological-diseases diagnosis.

5. Localizing diagnosis of neurological diseases. Clinical characteristics of neuropathy in different sites.

6. Qualitative diagnosis of neurological diseases.

7. Clinical-thinking process of neurologists.

INFECTIONS DISEASES

感染病学

Chief Editors（主编）
Ruan Bing（阮冰） Zhejiang University（浙江大学）
Zhao Zhixin（赵志新） Sun Yat-sen University（中山大学）

Deputy Chief Editor（副主编）
Pang chongjie（逄崇杰） Tianjin Medical University（天津医科大学）

Editors（编者）（按姓氏拼音排序）
Dai Xiahong（戴霞红） Zhejiang University（浙江大学）
Deng Min（邓敏） Zhejiang University（浙江大学）
Fan Xuegong（范学工） Central South University（中南大学）
Hao Shaorui（郝绍瑞） Zhejiang University（浙江大学）
Jia Hongyu（贾红宇） Zhejiang University（浙江大学）
Jiang Haiyin（蒋海寅） Zhejiang University（浙江大学）
Li Yongguo（李用国） Harbin Medical University（哈尔滨医科大学）
Pang chongjie（逄崇杰） Tianjin Medical University（天津医科大学）
Ruan Bing（阮冰） Zhejiang University（浙江大学）
Tang Hong（唐红）Sichuan University（四川大学）
Xie Yirui（解奕瑞） Zhejiang University（浙江大学）
Zhao Yingren（赵英仁） Xi'an Jiaotong University（西安交通大学）
Zhao Zhixin（赵志新） Sun Yat-sen University（中山大学）

Course Description

The course Infectious Diseases introduces the development, transmission, diagnosis, treatment, prevention and control of infectious diseases and parasitic diseases in the internal and external body. Its research area has involved a variety of infectious diseases, not only reflect the latest progress of various infectious diseases, but also guide the discipline into a more comprehensive and broad field, to meet the practical requirements for the prevention and treatment of infectious diseases. It is an important clinical course of internal medicine, closed associated with microbiology, parasitology, immunology, epidemiology, pediatrics and so on. However, it has its own particularity.

Teaching Infectious Diseases by class and clinical practice should make the students

master the essential theoretical knowledge and basic clinical skills of infectious diseases, be familiar with the law of prevention and control of infectious disease in China, learn common method of disinfection isolation, enhance the awareness of occupational protection, and develop the clinical thinking as well. That will be benefit to foster a student's ability to solve practical problems in their future clinical career.

Objectives

KNOWLEDGE

At the end of the course, the MBBS students shall be able to:

1. To master the general theories of Infectious Diseases, including the essential characters of communicable diseases, definition of communicable diseases, the manifestation of infectious process, the epidemic process and influencing factious of communicable diseases, the clinical features of infectious diseases, the diagnostic measures and therapy of infectious diseases, the prevention of infectious diseases and so on.

2. To master the pathogen, epidemiology, pathogenesis, pathological change, clinical manifestation, laboratory findings, complications, diagnosis, differential diagnosis, treatment and prevention of some common infectious diseases, including viral hepatitis, HIV/AIDS, epidemic influenza, measles, varicella, epidemic parotiditis (mumps), epidemic encephalitis B, hemorrhage fever with renal syndrome, dengue fever and dengue hemorrhagic fever, typhoid fever and paratyphoid fever, cholera, bacterial dysentery (shigellosis), Epidemic cerebrospinal meningitis, tuberculosis, scrub typhus, leptospirosis, amebiasis, malaria, schistosomiasis, cysticercosis, nosocomial infection, sepsis and septic shock, etc.

SKILLS

Through the teaching on clinical probation and practice, the MBBS students shall be able to:

1. To learn how to make a summary of a case, give the initial diagnosis and differential diagnosis, make a plan of treatment, then carry out further medical examination based on the essential theories of Infectious Diseases, in order to get the right diagnosis.

2. To learn how to collect the illness history, carry out a physical examination, write history report, make an initial diagnosis and therapeutic plan, write the progress notes, and master basic medical techniques like lumbar puncture, thoracentesis, abdominal paracentesis, bone marrow aspiration and so on.

Teaching and Learning Methods

Teaching Infectious Diseases in class using multimedia courseware with lectures and tutorials should make the students master the essential theoretical knowledge of Infectious Diseases.

Teaching Infectious Diseases in clinical probation and practice, in the combination with illness history collection, body check, teaching discussion and small lecture, should make the students master the essential clinical skills of Infectious Diseases. It should focus on culturing the right clinical analysis, capability of self-study and self-working.

Recommended Textbooks

David M Knipe, Peter M Howley. 2013. Fields Virology [M]. 6th ed. Philadelphia: Lippincott Williams & Wilkins.

Gerald L Mandell, John E Bennett, Raphael Dolin. 2014. Principles and Practice of Infectious Diseases [M]. 8th ed. New York: Churchill Livingstone.

Li Lanjuan, Ren Hong (李兰娟，任红). 2013. Infectious Diseases [M]. 8th ed. Beijing: People's Health Publishing House.

Walter R Wilson, Merle A Sande. 2014. Current Diagnosis & Treatment in Infectious Diseases [M]. New York: States: McGraw-Hill Medical.

Schedule Table

Chapter	Section	Contents	Hours
1		General introduction of Infectious Diseases	3
2		Viral infection	
	1	Viral hepatitis	4
	2	AIDS	3
	3	Epidemic influenza	3
	4	Measles	1
	5	Varicella	0.5
	6	Mumps	0.5
	7	Epidemic encephalitis B	2
	8	Hemorrhage fever with renal syndrome	2
	9	Infection with dengue virus	1
3		Bacterial infection	
	1	Typhoid fever and paratyphoid fever	3
	2	Cholera	2
	3	Bacterial dysentery	1
	4	Epidemic cerebrospinal meningitis	1
	5	Tuberculosis	3

Continued

Chapter	Section	Contents	Hours
4		Rickettsial infection	
	1	Scrub typhus	1
5		Spirochetal infection	
	1	Leptospirosis	2
6		Protozoal infection	
	1	Amebiasis	1
		Malaria	2
7		Helminthous infection	
	1	Schistosomiasis	2
	2	Cysticercosis	1
8		Special type of infection	
	1	Nosocomial infection	2
	2	Sepsis and septic shock	1
		Total	42

Course Contents

THEORY

Chapter 1 General Introduction to Infectious Diseases

1. Infection and immune.

(1) Definition of infection and infectious diseases.

(2) The five types of manifestation during the process of infection: elimination of the pathogen; covert infection; overt infection; carrier; incubation infection.

(3) The role of pathogen in the process of infection: invasiveness, virulence, quantity, variability.

(4) The role of immune response in the process of infectious disease.

2. The pathogenesis of infectious diseases.

(1) The onset and development of infectious diseases. The invasive entry, location, excretion of the pathogens.

(2) The pathogenesis of the damage in organs: direct invasion, the effect of the toxin and the immune pathogenesis of infectious diseases.

(3) The important pathological change.

3. The epidemiological process and affected factors of infectors.

(1) The three key essential steps of the epidemiology of infectious diseases, including the source of infection (patients, pathogen carriers and infected animals),

transmission route (spread through air, water, food, contact, insect and soil, etc.) and susceptibility.

(2) The factors influencing the epidemiological process (environmental factors and social factors).

4. The feature of infectious diseases.

(1) The four essential features of infectious diseases: pathogen, infectivity, epidemiological features (epidemicity, endemicity and seasonality), immunity after infection.

(2) The clinical features of infectious diseases: the regularity of the process of infectious diseases: incubation period, prodromal period, period of apparent manifestation, convalescent period. Pyrexia and fever type. Multiple rashes and enanthema. Toxemia, hepatomegaly and splenomegaly.

5. Diagnosis of infectious diseases.

(1) The diagnosis of infectious diseases: the diagnosis should be based on the epidemiological data, clinical data, laboratory findings and other results of examination.

(2) Laboratory examination: Smear and isolation (culture) of pathogen; the identification and susceptibility test of pathogen; immunological technique; gene examination.

6. Therapy of infectious diseases.

(1) The essential combined therapy is the most important. The special therapy of infectious diseases is etiological treatment.

(2) The significance of general and symptomatic therapy for infectious diseases; maintain the function of the important organs; retrieve the shock and the disorder of water and electrolytes; enhance the patient's immunity and regulate the immune function.

(3) Rehabilitation treatment.

(4) Chinese traditional medicine.

7. Prevention of infectious diseases.

(1) Management of the source of infection (Law of infectious diseases, the classification of infectious diseases, the reporting system of infectious diseases, isolation of patients and pathogen carriers).

(2) Interruption of the route of transmission (disinfection, insecticide, hygiene measures, etc.).

(3) Protection of susceptible population (The special and non-special immunological method of prevention).

Chapter 2 Viral infection

Section 1 Viral hepatitis

1. Pathogen.

(1) Hepatitis A virus and its genome structure. The clinical significance of anti-HAV IgM and anti-HAV IgG.

(2) The genome structure of hepatitis B virus. The antigens and antibodies system of hepatitis B virus. The examination of HBV DNA and its clinical significance. The mutation of HBV genome.

(3) The genome structure of hepatitis C virus. The examination of HCV RNA and its

clinical significance. The genotypes of hepatitis C virus.

(4) Hepatitis D virus and its genome.

(5) Hepatitis E virus and its genome. The clinical significance of anti-HEV IgM and anti-HEV IgG.

2. Epidemiology.

The source of infection, transmission route and susceptible population of hepatitis A, B, C, E. The epidemiological features of various hepatitis.

3. The pathogenesis and pathologic physiology.

(1) Pathogenesis of hepatitis A, B, C, D, E.

(2) The pathological features of viral hepatitis.

(3) The pathogenesis and pathologic physiology of jaundice, ascites, hemorrhage and hepatic encephalopathy.

4. Clinical manifestation.

(1) The clinical features of acute hepatitis, chronic hepatitis, liver failure, liver cirrhosis and cholestatic hepatitis.

(2) Viral hepatitis A and E can lead to acute hepatitis but never chronic hepatitis. Viral hepatitis B, D and C usually cause chronic hepatitis.

5. Evidence for diagnosis.

(1) The diagnosis of hepatitis according to epidemiological data, clinical manifestation, examination of liver function and pathogen.

(2) The laboratory diagnosis including examination of the serum markers and molecular biology of pathogens, biochemical examination, the significance of PTA for the diagnosis of liver failure.

(3) Differential diagnosis of jaundice including hemolytic, hepatic, and obstructive jaundice.

6. Therapy.

(1) The essential therapeutic principle.

(2) The combined basal treatment, including the control of food and behavior, avoidance of the factors resulting to liver damage, the proper choice of the drugs, the important role of symptomatic treatment and supportive treatment.

(3) Anti-viral treatment of chronic hepatitis.

(4) The therapeutic principle of liver failure and the treatment of complications. It is important for the combination of artificial liver support system (ALSS) and basal treatment to decrease case fatality rate of liver failure.

7. Prevention.

(1) The combined measures for prevention;

(2) Passive immunologic prevention: the application of immune globulin.

(3) Active immunologic prevention: the successful application of the vaccines against viral hepatitis A and viral hepatitis B.

Section 2 Acquired immunodeficiency syndrome (AIDS)

1. Pathogen.

The morphous and gene structure of HIV virus which belongs to retroviruse. The classification and feature of HIV virus.

2. Epidemiology.

(1) The source of infection includes patients and virus carriers without any symptoms.

(2) The principle transmission route: sex transmission, polluted injection, blood transmission, mother-to-baby transmission.

(3) The high risk population include homosexual, sexual promiscuity, people who have frequent sexual contact with HIV carriers, intravenous drug users, haemophilia patients, multiple recipient of blood transfusion or blood products, HIV (+) sexual spouse and infant.

(4) The current epidemic states in different regions.

3. Pathogenesis.

(1) The injury of the immune system: the ratio of $CD4^+/CD8$. The injury mode of $CD4^+$T lymphocyte and the related manifestation (the change of the quantity and quality of the immunocytes). Opportunistic infection and tumor.

(2) Pathological change: the pathological change of the lymph nodes; the pathological change of the central nervous system.

4. Clinical manifestation.

The stages of the illness and the principle manifestation of each stage.

(1) Acute infection: incubation period, symptoms and physical signs.

(2) Infectious stage without any symptoms: the persisting time.

(3) The persistent generalized lymphodenpathy and AIDS period: the symptoms and physical signs, persistent time.

(4) The related clinical manifestation of the common involved systems.

(5) The common opportunistic infection and tumor in AIDS.

5. Evidence for diagnosis.

(1) Epidemiological data.

(2) Clinical manifestation.

(3) Laboratory findings (The diagnostic significance of special antibody, CD4/CD8, virus isolation and HIV RNA).

(4) The standard of the definitive diagnosis.

6. Therapy.

(1) Anti-viral therapy (the current principle protocols and drugs of anti-viral therapy; combined treatment).

(2) Therapy of enhancing immunity.

(3) Supportive and symptomatic treatment.

(4) Chinese traditional medicine.

(5) Treatment of HIV related diseases and opportunistic infection.

7. Prevention.

(1) Health teaching; the survey of the high risk population. The measure and significance of cutting the transmission routes. Personal protection.

(2) Policy and law.

Section 3 Epidemic influenza

1. Pathogen.

(1) The ascription and morphous of influenza virus: a kind of Orthomyxovirus; RNA virus.

(2) The structure and features of the influenza virus: the antigens of neucleoprotein and outer membrane protein are stable and have specificity of viral types. The outer layer is lipid and has two particles, including hemagglutin and neuraminidase. Their antigens are not stable and have specificity and immunity of viral subtypes and viral mutation.

(3) The types and subtypes of influenza virus: Influenza virus can be divided into type A, B and C according to the antigenicity of neucleoprotein. Each type of influenza virus can be further divided into some subtypes based on the surface antigen and the antigens of hemagglutin and neuraminidase.

(4) The variability of influenza virus: The mutations of influenza virus A include group mutation, subtype mutation and species mutation. Influenza virus B only has species mutation. It has not been found any mutation in influenza virus C.

2. Epidemiology.

(1) Source of infection: patients and covert infectors.

(2) Transmission route: droplet infection.

(3) Susceptible population: Cross immunity against the mutation of the infected subtype virus is produced after infection.

(4) Epidemiological features: Influenza A usually causes epidemic outbreak, small epidemic, pandemic and even global pandemic. Influenza B can cause epidemic outbreak or small epidemic. Influenza C always occurs sporadically.

3. Pathogenesis.

(1) Influenza virus invades the ciliated columnar epithelial cells and replicates in them. The viruses are set free from the cells with the help of neuraminidase, and then invade other cellula columnoepithelialis, leading to degeneration, necrosis and exfoliation. No viremia can be seen.

(2) The macropathological features of primary pneumonia caused by influenza virus and secondary infection of pneumonia.

4. Clinical manifestation.

(1) Clinical features: the respiratory symptoms are mild while the toxic symptoms like fever and fatigue are serious.

(2) Clinical manifestations of the typical influenza.

(3) Clinical manifestations of pneumonia caused by influenza virus, pneumonia caused by secondary bacterial infection.

5. Evidence for diagnosis.

(1) Epidemiological data.

(2) Typical clinical manifestation.

(3) Laboratory findings:

Virus isolation: The rinse water from oropharynx and pharyngeal swab within first 3 days of the illness get inoculated in the chick embryo culture.

Quick diagnosis: Impression preparation of nasal mucous membrane and fluoresce in antibody technique.

Serologic diagnosis: Hemagglutination inhibition test and complement fixation test are made in the serum samples from the early period and 2~4 weeks after the onset of the illness.

(4) Differential diagnosis: Other viral infection in respiratory tract, acute tonsillitis, leptospirosis and so on.

6. Therapy.

(1) Drinking more water and rest in bed in the febrile phase.

(2) Chinese traditional medicine.

(3) Patients with fever can be treated with antipyretic analgesic like aspirin.

(4) Antibiotic can be used for infant and the elder to prevent secondary bacterial infection.

7. Prevention.

Survey of the epidemic situation; isolation of the patients; disinfection; vaccination; chinese traditional medicine.

8. Human infections with avian influenza A (H7N9).

Pathogen, clinical manifestation, diagnosis and therapy of H9N1 avian influenza.

9. Pandemic influenza H1N1.

Pathogen, clinical manifestation, diagnosis and therapy of pandemic influenza H1N1.

Section 4 Measles

1. Pathogen.

(1) The ascription and morphous of measles virus: a kind of Paramyxovirus; RNA virus.

(2) The structure and features of the measles virus.

2. Epidemiology.

(1) Source of infection: patients.

(2) Transmission route: droplet infection.

(3) Susceptible population.

(4) Epidemiological features: measles is extremely infectious.

3. Pathogenesis.

(1) Measles virus invades the ciliated columnar epithelial cells and replicates; viremia for twice; multinucleated giant cell; rash and mucosal lesion.

4. Clinical manifestation.

(1) Clinical manifestations of the typical measles.

(2) Clinical manifestations of the atypical measles.

(3) Complications: pneumonia; laryngitis; myocarditis; encephalitis; subacute sclerosing panencephalitis.

5. Evidence for diagnosis.

(1) Epidemiological data.

(2) Typical clinical manifestation.

(3) Laboratory findings:

Blood routine: decrease of WBC and leukocyte.

Serologic diagnosis: the special IgM and IgG antibody.

Virus isolation: detection of virus antigen and nucleic acid.

Detection of multinucleated giant cell.

(4) Differential diagnosis: Other Rash disease such as Rubella; Exanthema Subitum scarlatina medicinal rash and so on.

6. Therapy.

(1) No effective anti-viral drug can be used.

(2) Symptomatic treatment and intensive care are necessary.

(3) Complications treatment.

7. Prevention.

Isolation of the patients; block the transmission rote; vaccination.

Section 5 Varicella

1. Pathogen.

(1) The ascription and morphous of varicella-zoster virus: a kind of herpesvirus; DNA virus.

(2) The structure and features of varicella-zoster virus, single serotype.

2. Epidemiology.

(1) Source of infection: patients.

(2) Transmission route: droplet infection.

(3) Susceptible population.

3. Pathogenesis.

The life cycle and pathology of varicella-zoster virus.

4. Clinical manifestation.

(1) Clinical manifestations of the typical varicella.

(2) Clinical manifestations of the zoster.

(3) Complications: pneumonia; encephalitis; progressive disseminated varicella.

5. Evidence for diagnosis.

(1) Epidemiological data.

(2) Typical clinical manifestation.

(3) Laboratory findings: Serologic special antibody detection; virus isolation; virus nucleic acid detection.

(4) Differential diagnosis with urticaria.

6. Therapy.

(1) Symptomatic treatment and topical therapy.

(2) Anti-viral therapy.

(3) Complications treatment.

7. Prevention.

Isolation of the patients; block the transmission rote; vaccination.

Section 6 Mumps

1. Pathogen.

(1) The ascription and morphous of mumps virus: RNA virus.

(2) The structure and features of mumps virus, single serotype.

2. Epidemiology.

(1) Source of infection: patients.

(2) Transmission route: droplet infection.

(3) Susceptible population.

3. Pathogenesis.

Mumps virus invades the ciliated columnar epithelial cells and replicates; viremia for twice; apyogenous inflammation.

4. Clinical manifestation.

(1) Clinical manifestations of the typical mumps.

(2) Complications: nervous system and reproductive system.

5. Evidence for diagnosis.

(1) Epidemiological data.

(2) Typical clinical manifestation.

(3) Laboratory findings: Blood routine; serum and urine amylase; cerebral spinal fluid; serologic special IgM antibody; virus isolation; virus nucleic acid detection.

(4) Differential diagnosis: pyogenic parotitis; other disease which cause parotid swelling.

6. Therapy.

(1) Symptomatic treatment.

(2) Anti-viral therapy.

(3) Chinese traditional medicine.

7. Prevention.

Isolation of the patients; block the transmission rote; vaccination.

Section 7 Epidemic encephalitis B

1. Pathogen.

Features of the virus: a type of arboviruses.

2. Epidemiology.

The position where the virus invade the human body; viremia for twice; the change of the cellular immunity. The way that the viruses attack the central nervous system.

The location with pathological change; pathological change in vessels; degeneration and necrosis of neurocyte; proliferation of glial cells and infiltration with inflammatory cells.

3. Pathogenesis.

(1) Zoonosis: The pigs, especially the young pigs, is the principle source of infection.

(2) Spread through the bite of mosquitoes: The Culex tritaeniorhynchus is the principle transmission vector.

(3) Epidemiologic feature: This disease usually occurs in Summer and Autumn. The children, especially under the age of 10, are the principle victims.

4. Clinical manifestation.

(1) It is an acute infectious disease in central nervous system with the inflammatory mainly involved in the brain.

(2) Four periods of the illness: incubation period, early period, fastigium period and convalescent period.

(3) The important manifestation in fastigium period: high fever, disturbance of the consciousness; twitch, respiratory failure; sometimes the pathological reflex and the

signs of meningeal irritation may be positive.

(4) Clinical classification: mild type, common type, serious type, severe type.

5. Laboratory findings.

(1) Blood routine.

(2) Cerebral spinal fluid.

(3) Serological examination: the examination of the special IgM antibody.

(4) Isolation of the virus.

6. Evidence for diagnosis.

(1) Epidemiologic data: seasonality (summer and autumn), mostly occurs to children under the age of 10.

(2) The symptoms and physical signs include acute onset, high fever, headache, vomiting, disturbance of consciousness, twitch, respiratory failure, pathological reflex, signs of meningeal irritation.

(3) Laboratory findings show elevation of WBC and leukocyte, change of cerebrospinal fluid like serofluid. Serological examination can help definitive diagnosis.

(4) Differential diagnosis: Viral encephalitis caused by other viruses, tubercular meningitis, purulent meningitis.

7. Therapy and prognosis.

(1) No effective anti-viral drug can be used. Symptomatic treatment and intensive care are necessary. The key treatment is to deal with the three dangerous symptoms, including high fever, twitch and respiratory failure.

(2) Prognosis: complication, sequela and the manifestation in convalescent period.

8. Prevention.

Control and manage the source of infection, kill out the mosquitoes and avoid being bitten by mosquitoes, vaccination.

Section 8 Hemorrhage fever with renal syndrome

1. Pathogen.

General feature of the pathogen; the shape of the virus.

2. Epidemiology.

(1) The principle animal hosts and source of infection: murine.

(2) Principle transmission route: insect-borne transmission; animal mediated transmission; breathing transmission; digestive transmission; contact transmission.

(3) Susceptible population.

3. Pathogenesis.

(1) The pathogenesis about how the virus migrate in the human body and how the virus cause injure of the cells and organs.

(2) The pathogenesis of shock, bleeding and acute renal failure.

4. Clinical manifestation.

(1) The five phases of the illness and three principle manifestation.

(2) The symptoms and physical signs in each phase.

(3) Laboratory findings.

5. Diagnosis.

(1) Epidemiologic data.

(2) Clinical manifestation: the three principle symptoms, including fever, hemorrhage and renal damage; the five phases of the illness, including fever phase, hypotension and shock phase, oliguria phase, polyuria phase and convalescent phase.

(3) Laboratory findings (the diagnostic significance of urine routine and special antibodies).

(4) Based on the phase of the illness, the differential diagnosis includes the diseases with acute fever, diseases with hemorrhage and renal diseases.

6. Therapy.

The therapeutic principle is variant in different phases of the illness.

(1) Treatment in fever phase: general treatment, immune treatment, anti-viral treatment.

(2) Treatment in hypotension phase: supply of blood volume, regulation of the osmotic pressure, rectification of acidosis, application of the vasoactive drugs and cardiac stimulant.

(3) Treatment in oliguria phase: application of diuretic agent, anticoagulant therapy, catharsis, dialysis.

(4) Treatment in polyuria phase.

(5) Treatment of the complications, including hemorrhage, twitch, secondary infection.

7. Prevention.

The principle way to prevention: To eliminate the mouse is the key to prevent this disease spreading.

Section 9 Infection with dengue virus-Dengue fever and dengue hemorrhagic fever

1. Pathogen.

(1) The biological feature of dengue virus; Flavivirus; RNA virus.

(2) Four serotypes of the pathogen; Special antibodies.

2. Epidemiology.

(1) Source of infection: patients and covert infectors, chronic viral carriers.

(2) Transmission route: spread through the bite of transmission vectors like tiger mosquito and aedes albopictus.

(3) Susceptibility and immunity: Immunity against the same serotype of pathogen Lasts for several years. The cross immunity among different serotypes lasts for a short time.

(4) Epidemiological features: endemicity and seasonality.

3. Pathogenesis.

(1) The pathogen invades the human body through the bite of the vectors and causes viraemia for twice, leading to the increasing permeability of the vessels.

(2) The role of the enhancing antibody.

4. Clinical manifestation.

(1) Incubation period.

(2) Clinical manifestation of typical dengue fever.

(3) Typing of dengue fever (typical type, mild type, severe type) and the manifestation of each type.

(4) Typing of dengue hemorrhagic fever and the manifestation of each type.

5. Diagnosis.

(1) The diagnostic evidence of dengue fever.

1) Epidemiological data: Epidemiological region and seasons.

2) Clinical features.

3) Laboratory findings: the diagnostic value of the decrement of WBC and pathogenic examination (serum examination and isolation of virus).

4) Differential diagnosis with the diseases like measles, scarlet fever, epidemiological influenza, hemorrhage fever with renal syndrome, leptospirosis and so on.

(2) The diagnostic standard of dengue hemorrhagic fever (or dengue shock syndrome).

6. Therapy.

The symptomatic treatment focused on fever, hemorrhage and meningocephalitis.

7. Prevention.

The key points of preventive measure: avoid being bitten by mosquitoes and kill up the mosquitoes.

Chapter 3 Bacterial infection

Section 1 Typhoid fever and paratyphoid fever

1. Pathogen.

The character, resistance and antigenicity of bacterium typhi.

2. Epidemiology.

(1) Source of infection: the epidemiologic significance of the patient, carrier and chronic carrier.

(2) Transmission route: Water, food, daily contact.

(3) Susceptible population and persistent immunity after infection.

(4) Epidemiologic feature.

3. Pathogenesis and pathological feature.

(1) The way by which the pathogen invade the human body. Bacteremia for twice.

(2) The principle pathologic change is the productive reaction of the mononuclear phagocytic system, especially the lymph tissue in the inferior segment of the ileum.

(3) The relationship among pathogenesis, pathological change of intestine and clinical manifestation.

4. Clinical manifestation.

(1) The four phases of typhoid fever. The clinical manifestation in fastigium period. The relationship between fever type and the course of the illness. The principle complication.

(2) Relapse and recrudescence.

(3) Clinical type. The feature of children patients and aged patients with typhoid fever.

5. Laboratory findings.

(1) Blood routine: diminution of WBC, diminution and even disappearance of eosinophils.

(2) The diagnostic significance and assessment of Widal reaction.

(3) Culture of pathogen: the proper time and value of the pathogenic culture from blood, bone mallow and stool.

6. Diagnosis and differential diagnosis.

(1) The principle evidence for clinical diagnosis and the necessary evidence for definitive diagnosis.

(2) Differential diagnosis with other diseases characterized by fever.

7. Therapy.

General treatment: Intensive care and food intake; pathogenic treatment (the choice of antibiotic, the first choice is quinolone of the third generation); treatment of the complications; treatment of the carriers.

8. Prevention.

The principle way to prevention.

9. Paratyphoid fever.

The principle clinical manifestation, diagnosis and therapy of paratyphoid fever.

Section 2 Cholera

1. Pathogen.

The biological features of cholera bacillus; three serotypes.

2. Epidemiology.

(1) Epidemiologic history of cholera: global pandemic for 7 times.

(2) Epidemiologic steps: source of infection (patients and carriers); transmission route (digestive transmission, mainly by water transmission) and susceptible population.

(3) Epidemiologic features: endemicity, foreignness and seasonality.

3. Pathogenesis.

(1) The mechanism of cholera enterotoxin.

(2) Pathophysiology: severe vomiting and diarrhea cause the loss of large amount of water and electrolyte, resulting in dehydration, peripheral circulatory failure, hypokalemia syndrome, metabolic acidosis and so on.

(3) Pathological change: mainly caused by dehydration. It can completely recover with prompt effective treatment.

4. Clinical manifestation.

(1) Incubation period. The stages of the illness include vomiting and diarrhea period, dehydration period and response period.

(2) Clinical features of each clinical types, including mild type, moderate type, severe type and fulminate type.

(3) Laboratory finding: No special change in stool routine. The biochemical examination can help surveying the change of the illness. The etiologic examination can help the definitive diagnosis.

5. Diagnosis.

(1) Epidemiological data.

(2) Features of the clinical manifestation.

(3) Etiologic examination: bacterium examination (stool hanging drop and staining, examined in microscopy). The stool culture is significant for the definitive diagnosis. Serological examination can help the diagnosis for the patients with negative findings of stool culture.

(4) Standard of the definitive diagnosis and suspicious diagnosis.

(5) The differential diagnosis of cholera: bacterial food poisoning, acute shigellosis, diarrhea caused by the enterotoxigenic E. coli, arsenic poisoning and so on.

6. Therapy.

(1) Strict isolation.

(2) The importance of fluid replacement therapy. Master the fluid replacement therapy, including the types, doses, speed of fluid replacement. The indication, type of fluid, prescription, dose of oral rehydration.

(3) Antibiotic: aiding role of the therapy.

7. Prevention.

The management of the source of infection, to report the epidemic situation in time. The management of the patients and the people with close contact with patients.

Cut the transmission route: "three management and one elimination". To manage the drinking water, food and stool and eliminate the flies.

Protect the susceptible population; preventive vaccination.

Section 3 Bacterial dysentery (Shigellosis)

1. Pathogen.

The character, resistance, classification of dysentery bacilli. The diversify of the principle epidemic bacterial types.

2. Epidemiology.

(1) Source of infection: patients and carriers.

(2) Transmission route: food, water, etc.

(3) Susceptible population: generally susceptible to human, repeatable infection.

(4) Epidemiological features: sporadic epidemic and epidemic outbreak.

3. Pathogenesis and pathological change.

(1) The role of the enterotoxin and invasiveness of the pathogen.

(2) The pathological features in sigmoid colon and intestinal rectum.

(3) The pathogenesis of toxic dysentery.

(4) The pathological background of the clinical manifestations like fever, diarrhea, mucous stool with bloody pus, tenesmus and so on.

4. Clinical manifestation.

(1) Incubation period.

(2) The clinical manifestations of acute dysentery and chronic dysentery.

5. Diagnosis and differential diagnosis.

(1) Epidemiological data.

(2) Principle clinical manifestation.

(3) Laboratory findings: the character and examination with microscopy of the stool, stool culture for bacilli.

(4) The types of Shigellosis and the differential diagnosis of this disease.

6. Therapeutic principle.

(1) General treatment.

(2) Etiologic treatment: the choice of antibiotic, resistance of the bacterial strain; the treatment of chronic Shigellosis includes oral antibiotic and retention enema with drugs.

(3) The treatment with the shock type and encephalitis type of this disease.

7. Prevention.

(1) To find the patient and isolation.

(2) To cut the transmission route.

(3) Management of the food and water source.

(4) Propaganda of personal protection: washing hands before eating and after defecation; the oral active live vaccination.

Section 4 Epidemic cerebrospinal meningitis

1. Pathogen.

(1) The feathers and classification of the pathogen.

(2) The problem about drug resistance.

2. Epidemiology.

(1) Source of infection: patients and carriers.

(2) Transmission route.

(3) Susceptible population: diversify the people's immunity and periodical epidemic of the microbial population.

3. Pathogenesis.

(1) The process of infection in the pharynx nasalis, bacteremia and purulent inflammatory of the meninges.

(2) The pathogenesis of fulminate type of this disease: DIC, cerebral edema and cerebral hernia.

4. Clinical manifestation.

(1) Incubation period, clinical types.

(2) Manifestation of typical type; meningeal irritation sign; petechial.

(3) The manifestations of all types of the fulminate types.

5. Diagnosis.

(1) Epidemiological data.

(2) Principle clinical manifestation.

(3) Examination of the cerebral spinal fluid (CSF).

(4) Bacteria examination: smear of the throat swab, CSF and petechia.

(5) Differential diagnosis among epidemic cerebrospinal meningitis and other purulent meningitis, tubercular meningitis, Japanese encephalitis, viral meningocephalitis and toxic dysentery.

6. Therapy.

(1) General symptomatic treatment.

(2) Etiologic treatment: choice of antibiotic; the treatment of fulminate type of epidemic cerebrospinal meningitis.

7. Prevention.

The principle preventive measure.

Section 5 Tuberculosis

1. Pathogen.

(1) The feature and classification of the Mycobacterium tuberculosis.

(2) The problem about drug resistance.

2. Epidemiology.

(1) Source of infection: opening pulmonary tuberculosis patients.

(2) Transmission route: air.

(3) Susceptible population.

(4) The current epidemic states in different regions.

3. Pathogenesis.

(1) The process of infection.

(2) The pathology of tuberculosis: exudation; hyperplasia; cheesy necrosis.

4. Clinical manifestation.

(1) Pulmonary tuberculosis.

(2) Extrapulmonary tuberculosis.

5. Laboratory findings.

(1) Smear and culture of Mycobacterium tuberculosis;

(2) Imageology: X-ray, CT;

(3) Tuberculin skin test;

(4) Immunological technique such as T-spot;

(5) Gene examination such as PCR.

6. Diagnosis.

(1) Epidemiological data.

(2) Principle clinical manifestation.

(3) Laboratory examination.

(4) Differential diagnosis with lung cancer, pneumonia, pulmonary abscess, bronchiectasis nontuberculosis mycobacterium and so on.

7. Therapy.

(1) General symptomatic treatment.

(2) Etiologic treatment (principle: early use, combined application, enough dose, sufficient course): ① New onset; ② Recurrent disease; ③ Medication resistance.

(3) Surgical management.

(4) Preventive treatment of latent tuberculosis.

8. Prevention.

(1) Establish prevention and control system.

(2) Early detection and thorough treatment of patients.

(3) Vaccines.

Chapter 4 Rickettsial infection

Section 1 Scrub typhus

1. Pathogen.

(1) The features of orientia tsutsugamushi.

(2) The first generation of the infected mite cannot transmit the disease, while the second generation can do it.

(3) Isolation by animals.

2. Epidemiology.

(1) Source of infection.

(2) Transmission route.

(3) Susceptible population.

3. Pathogenesis.

(1) The pathogen invades the human body through the bite of the chigger and proliferates in the local regions. The rickettsemia develops and cause the toxemic symptoms and the inflammatory and degeneration of multiple organs.

(2) The relationship between pathogenesis and clinical manifestation: the formation of eschar and ulceration, rashes and enlargement of lymph nodes.

4. Clinical manifestation.

(1) Acute infectious symptoms.

(2) Mutiple characterized manifestation: eschar and ulceration.

(3) Lymphadenectasis.

(4) Rash.

(5) Hepatomegaly and splenomegaly.

5. Diagnosis.

(1) Epidemiological data: history of sitting or lying on lawn.

(2) Clinical manifestation: acute infectious manifestation; the significance of careful body check in order to find the eschar and ulceration.

(3) Pathogen isolated from the incubated animals can help the definitive diagnosis. Serological examination: the diagnostic significance of Weil-Felix reaction.

(4) Differential diagnosis: differential diagnosis with other acute infectious diseases.

6. Etiologic therapy.

(1) Choice of antibiotic: chloromycetin, tetracycline, erythromycin and quinolones are all specific.

(2) Cephalosporins and penicillin are inefficient.

7. Prevention.

The principle preventive measure.

Chapter 5 Spirochetal infection

Section 1 Leptospirosis

1. Pathogen.

(1) The morphous and biological features of leptospire.

(2) The common serogroups and serotypes in China.

2. Epidemiology.

(1) Source of infection: the animals like mice and pigs that can discharge pathogens.

(2) Transmission route: spread through skin and digestive tract.

(3) Susceptible population: the people after infection can get strong special immunity against the same serotype of leptospire.

(4) Epidemiologic features: endemicity, seasonality and profession. Epidemiologic form: flood type (pigs), rice field type (mite), rain type (pigs).

3. Pathogenesis.

(1) The pathogen invades the human body through skin or mucous membranes, leading to spirochetemia.

(2) The essential pathological change is the toxic injury of the extensive capillaries, especially in lung, liver, kidney, heart, muscle, brain and so on. The pathological feature is

the discordance between the severity of organ disfunction and the mild histological change.

(3) The pathological change of pneumonorrhagia type.

4. Clinical manifestation.

(1) Incubation period.

(2) The toxemic syndrome caused by spirochetemia in early period.

(3) The manifestation related to the organ disfunction in middle period. The clinical features of each clinical types.

(4) The clinical manifestation in convalescent period and sequela period.

5. Laboratory findings.

(1) Blood routine, urine routine: WBC always increases in blood; RBC, WBC protein and cast could be found in urine. The biochemical markers and X ray check can help surveying the illness.

(2) Special examination: Immunological test can examine the special antibodies and antigens in the blood. The level of antibody in late period higher than that in early period can help the definitive diagnosis. Blood culture and its diagnostic significance: Long time is needed.

6. Diagnosis and differential diagnosis.

(1) Epidemiologic data.

(2) The clinical features in early period and those of each types.

(3) The diagnostic significance of pathogen isolation and serologic test.

(4) Differential diagnosis: The differential diagnosis depended on the clinical type of the disease. The diseases with the principle manifestations of fever, hemorrhage, jaundice and renal injury should be included in the differential diagnosis with different clinical type of leptospirosis.

7. Therapy.

(1) Therapeutic principle; general treatment.

(2) Etiologic treatment: The choice of antibiotic: penicillin, gentamycin and tetracycline are effective. The announcements about the application of penicillin (the significance of early application and Herxheimer reaction).

(3) Application of temperantia, cardiotonic and adrenocortical hormone in patients with severe pneumonorrhagia.

8. Prevention.

Control the source of infection; cut the transmission route, including keeping good public and personal sanitary, self-protection and so on; enhance the people's immunity: incubation with polyvalent bacterial vaccine of leptospire.

Chapter 6 Protozoal infection

Section 1 Amebiasis-Intestinal amebiasis and amebic liver abscess

1. Pathogen.

The life cycle of Entomoeba histolytica, the morphous and virulence of big trophozoite, small trophozoite and cyst.

2. Epidemiology.

(1) Source of infection: patients with acute infection and people discharging cysts.

(2) Transmission route: the cysts pollute the drinking water and food; transmission through the insects like flies, cockroach and so on.

(3) Susceptible population: influencing factors of epidemic.

3. Pathogenesis and pathology.

(1) The process of the invasion.

(2) The location of the lesion, disease with damage, the stool character.

(3) The essential pathological change is lytic necrosis of the tissue; formation of ulceration; morphous, location and character of ulcer. The pathological changes in acute phase and chronic phase.

(4) The relationship between amebic liver abscess and intestinal amebiasis.

4. Clinical manifestation.

(1) Incubation period.

(2) Manifestation of the typical intestinal amebiasis: chronic onset, abdominal pain, diarrhea, fluid-jam stool, tenderness in the right lower quadrant.

(3) Clinical features of other types:

1) Type without symptoms: The cysts can be found in the stool but the patients do not have any symptoms.

2) Fulminate type: Acute onset and severe manifestation.

3) Chronic type: the illness lasts for more than 2 months and breaks out repeatedly.

(4) The complications of intestinal amebiasis: intestinal hemorrhage, intestinal perforation, appendicitis, non-dysenteric colonic diseases.

(5) The clinical manifestation of amebic liver abscess: Mostly chronic onset, fever, pain in liver region, emaciation, anemia, edema, hepatomegaly, local tenderness. The relationship between the location of the liver abscess and clinical manifestation.

5. Laboratory findings.

(1) Stool examination: specimen collection, macroscopic observation, microscopic examination of the smear, looking for the amebic trophozoite and cysts. Looking for the amebic trophozoite in the liquor puris, examining the dissoluble antigen in the liquor puris.

(2) Serologic examination: special IgG, IgM antibodies.

(3) Sigmoidoscopy.

(4) Imageology: B ultrasound, CT, MRI. The significance of X ray and isotope liver scanning.

6. Evidence for diagnosis.

(1) Epidemiologic data; the diagnostic significance of the symptoms, characters of the stool, pathogens found with microscopy.

(2) The diagnosis of amebia liver abscess: the history of intestinal amebiasis, clinical manifestation, laboratory findings like stool examination and serologic examination; B ultrasound; the diagnostic significance of examination of the liquor puris from the liver abscess.

(3) Intestinal amebiasis should make the differential diagnosis with the following diseases: the liver diseases with occupying lesions like hepatic echinococcosis, liver carcinoma, hepatic cyst and so on.

7. Therapy.

(1) Treatment with intestinal amebiasis: supportive treatment, the choice of anti-amebic drugs; treatment of the complications.

(2) Treatment with amebic liver abscess: anti-amebic treatment, purulent discharge of liver abscess through puncturation. Treatment with antibiotic is proper for co-infection with bacterium. The indications for surgery treatment: poor effect with internal medical treatment or perforation of the liver abscess.

8. Prevention.

Principle preventive measures.

Section 2 Malaria

1. Pathogen.

The relationship between the life cycles of four plasmodiums, onset of the illness, recrudescence and transmission.

2. Epidemiology.

(1) Source of infection: Patients and plasmodium carriers.

(2) Transmission route: spread through the bite of transmitting vectors.

(3) Susceptibility.

(4) Epidemiologic features: endemic epidemic, seasonality: summer and autumn.

3. Pathogenesis.

(1) The principle of the onset of malaria.

(2) The principle pathological change: anemia, proliferation of endothelial system, hepatomegaly, splenomegaly, change of the brain.

4. Clinical manifestation.

(1) Incubation period.

(2) The outbreak course of typical malaria: periodical outbreak of chill, high fever and heavy sweating.

(3) Other symptoms and the principle physical signs: splenomegaly, anemia and herpes simplex around the lips.

(4) Fulminate outbreak of malaria; cerebral type, ultrahyperpyrexia type, pulmonary type and gastrointestinal type of malaria; relapse and recrudescence.

(5) Complications: acute intravascular hemolysis (blackwater fever), nephrotic syndrome.

5. Laboratory findings.

(1) Blood routine: leucocytopenia, increment of WBC in subtertian malaria infection; decrement of RBC.

(2) Examining the plasmodium in blood smear and bone marrow smear: the role and diagnostic significance of thick smear and thin smear.

(3) Serologic examination: special antigens and antibodies.

(4) Molecular biology: test the plasmodium nucleic acid of plasmodium.

6. Diagnostic evidence.

(1) Epidemiologic data.

(2) Manifestations of typical outbreak.

(3) Laboratory findings: Plasmodium found in blood smear and bone marrow smear can help definitive diagnosis.

(4) Diagnostic therapy.

(5) The diseases of differential diagnosis include acute febrile diseases, such as typhoid fever, septicemia and toxic dysentery.

7. Therapy.

(1) The common antimalarial drugs: the drugs controlling the clinical outbreak and killing the schizonts; the common cases: the first choice is chloroquine and artesunate. The treatment with the drug-resistant subtertian malaria: the first choice is mefloquine and artesunate.

(2) Prevent the relapse and spread of malaria: primaquine is suitable for the patients without G6PD deficiency.

(3) Drug for prevention: pyrimethamine.

(4) Treatment with encephalic malaria: symptomatic treatment: control cerebral edema and adrenal cortical hormone; antimalarial treatment: chloroquine or artesunate.

(5) Complications-treatment with blackwater fever: stop pyrimethamine immediately; adrenal cortical hormone; alkalizing the urine. Blood transfusion with low volume for multiple times if necessary.

8. Prevention.

To kill the plasmodium in human body. Killing out mosquitoes to avoid being bitten; preventive treatment with drugs. Immunologic prevention: no effective vaccine currently.

Chapter 7 Helminth infection

Section 1 Schistosomiasis

1. Pathogen.

The life cycle of Schistosoma japonicum. Briefly explain the achievements of prevention and treatment of schistosomiasis in China.

2. Epidemiology.

(1) Source of infection: the patients with Schistosoma japonicum and reservoir host.

(2) Transmission route: it need three conditions: feces infested water, oncomelania hupensis breeding, and contact with S. japonicum-infested water.

(3) Susceptible population.

3. Pathogenesis.

Briefly explain the formation mechanism of the egg granuloma which mainly involving the colon, liver, but it can also ectopic to the lungs and brain.

4. Clinical manifestation.

Focus on four clinical types:

(1) Acute schistosomiasis: often having a clear history of contact with water; Signs and symptoms includeing cercariae dermatitis, fever, allergic reactions, abdominal pain, diarrhea and hepatosplenomegaly.

(2) Chronic schistosomiasis: common symptoms including abdominal pain and diarrhea.

(3) Late schistosomiasis: can be divided into 4 types: (giant spleen type, ascites type, colon granuloma type and dwarf type).

(4) Ectopic schistosomiasis: lung type, brain type.

5. Laboratory findings and other examination.

(1) Eosinophilia and abnormal liver function.

(2) Immunological examination: Enzyme-linked immunosorbent assay (ELISA) to detect serum-specific antibodies which can be used for diagnosis and the evaluation of the therapeutic effect.

(3) B-type ultrasonography is helpful in the diagnosis of hepatic fibrosis and cirrhosis.

6. Complications.

Briefly explain the complications of cirrhosis (portal hypertension upper gastrointestinal bleeding, ascites, hepatic encephalopathy, etc.) and intestinal complications (intestinal obstruction, colon cancer, etc.).

7. Diagnostic evidence.

Diagnosis is mainly dependent on epidemiological history, the clinical manifestation, and laboratory examination.

8. Therapy.

Focus on etiologic treatment: praziquantel is effective drug.

9. Prevention.

Comprehensive preventive measures: survey and cure of patients and sick cattle; strengthen feces and water management; personal protection.

Section 2 Cysticercosis

1. Pathogen.

The morphous of cysticercus cellulosae; the life cycle of Taenia solium (its relation to taeniasis suis). Human can be the intermediate host and final host of Taenia solium.

2. Epidemiology.

(1) Source of infection: the patients with taeniasis suis.

(2) Transmission route: intake of the food polluted by the eggs of Taenia solium. Xenogenic infection is the principle transmission route. Sometimes endogenic infection and xenogenic self-infection can transmit this disease.

(3) Susceptible population.

(4) Epidemiological features: endemic distribution.

3. Pathogenesis.

(1) When the egg of Taenia solium enters the stomach and small intestine, the oncosphere gets out of the cyst, and then enters the blood stream and locates in various tissues. The life cycle of Taenia solium ends at this point.

(2) The pathological change is associated with the parasitizing position, quantity, local inflammatory response. The pathological changes in brain, eyes and subcutaneous tissue are different.

4. Clinical manifestation.

(1) Incubation period.

(2) Clinical classification: the type of subcutaneous tissue and muscle, central nervous system type are the commonest clinical types. Most patients do not have any symptoms.

(3) Brain cysticercosis: the principle manifestation is epileptic seizure.

(4) Cysticercosis of subcutaneous tissue and muscle: subcutaneous nodule and its features.

(5) Eyes cysticercosis.

5. Laboratory findings and other examination: the eikonic examination is of the most significance, while the laboratory examination is secondary.

(1) Blood routine.

(2) Immunological examination: the special antibodies in the blood and CSF. The possibility of false positive and false negative.

(3) The eikonic examination and its diagnostic significance: CT and MRI can help the diagnosis and the evaluation of the therapeutic effect. CT: multiple low-density leasions with the diameter less than 1 cm, or calcific lesions. The merits of MRI when comparing with CT: more easy to find the scolex and intraventricular bladder worm. X ray: calcific lesions in the muscles.

(4) Biopsy of the subcutaneous or muscular nodules: findings of cysticercus cellulose can help the definitive diagnosis.

6. Evidence for diagnosis.

Epidemiological history; the clinical manifestation; the diagnostic significance of the biopsy of subcutaneous nodules; X ray; CT; MRI and serological examination.

7. Therapy.

(1) The announcements of therapy: hospitalization is necessary.

(2) Symptomatic treatments like dehydration, adrenal cortex hormone and anti-epileptic.

(3) Etiologic treatment: the choice of etiologic treatment: common drugs: praziquantel, albendazole. Total dose of praziquantel 120~180 mg/kg, finished in 10 days, three times each day. Albendazole 18~20 mg/kg/d, division of twice each day, treating for 10 days. Multiple treating course may be needed.

(4) Operation: Operation to deal with the eyes bladder worm and cerebroventricular bladder worm is needed before etiologic treatment.

8. Prevention.

Thoroughgoing cure of the patients with taeniasis suis; Be careful of the personal sanitary and food sanitary.

Chapter 8 Special type of infection

Section 1 Nosocomial infection

1. Etiology.

(1) Diversify of the pathogen.

(2) The common pathogens of nosocomial infection.

2. Epidemiology.

(1) Source of infection.

(2) Transmission route.

(3) Susceptible population.

3. Pathogenesis.

(1) The virulence of multiple pathogens.

(2) The host immune dysfunction.

(3) Unreasonable use of antibiotics.

(4) The variety of invasive diagnostic and therapeutic measures.

4. Clinical manifestation.

Common nosocomial infection type:

(1) Hospital-acquired pneumonia (Ventilator-associated pneumonia).

(2) Urinary tract infection.

(3) Gastroenteritis.

(4) Puerperal fever.

(5) Surgical wound infection.

(6) Systemic infection.

5. Diagnostic evidence.

(1) Etiological diagnosis.

(2) Clinical manifestation.

(3) Laboratory findings: the measures to examine the pathogens and its diagnostic significance.

6. Therapy.

(1) Rational use and standard management of antibiotic (Selection of antibiotics, combined application, enough dose, sufficient course).

(2) Symptomatic and supportive treatment.

7. Prevention.

(1) Control the source of infection;

(2) Cut the transmission route: including sterilization, isolation, handwashing, surface sanitation, self-protection and so on;

(3) Enhance the people's immunity and reducing risk factors;

(4) Nosocomial infection monitoring: department of nosocomial infection control and monitoring system.

Section 2 Sepsis and septic shock

1. Etiology.

(1) Diversify of the pathogen.

(2) The common pathogens of septicemia.

2. Pathogenesis.

(1) The virulence of multiple pathogens.

(2) The protective immune response.

(3) Nosocomial factors.

(4) The principle pathological change and metastasized infectious focus.

3. Diagnostic evidence.

(1) Primary infectious focus.

(2) Clinical manifestation.

(3) Laboratory findings: Blood routine, the measures to examine the pathogens and its diagnostic significance. The assessment of limulus test.

(4) The early diagnosis of septic shock (the possible signs indicating the onset of shock).

(5) Differential diagnosis: infectious diseases like typhoid fever, military tuberculosis and so on; non-infectious diseases like malignant histocytosis, malignant lymphoma,

systemic lupus erythematosus, subsepsis allergica and so on.

4. Therapy.

(1) Symptomatic and supportive treatment (large dose of gammaglobulin);

(2) Treatment with the focal infectious focus and the primary disease.

(3) The principle of choosing antibiotic (early use, combined application, enough dose, sufficient course);

(4) The needed dose of antibiotic for each type of septicemia.

(5) The therapeutic principle and measure to treat with septic shock.

5. Prognosis.

The prognosis of each type of septicemia: the influencing factors of the prognosis.

PRACTICAL

1. Disease requirement.

To understand the causes, pathogenesis, clinical manifestations, diagnostic criteria, differential diagnosis, and therapeutic principle of the following infectious diseases:

(1) Viral Hepatitis.

(2) AIDS.

(3) Hemorrhagic fever with renal syndrome.

(4) Japanese encephalitis.

(5) Typhoid.

(6) Cholera.

(7) Leptospirosis.

(8) Malaria.

(9) Schistosomiasis.

(10) Central nervous system infection.

(11) Infectious diarrhea.

(12) Septic shock.

(13) Fever of unknown origin.

(14) Liver abscess.

(15) Sepsis.

(16) Measles.

(17) Epidemic cerebrospinal meningitis.

(18) Shigella infection.

(19) Liver failure.

2. Clinical skills.

(1) Physical examination.

1) Subcutaneous nodules: to check the size, hardness, location, activity, whether it is painful when pressed.

2) Palpation of superficial lymph nodes: the check order, location, lymph node swelling, the border of the enlarged lymph nodes, texture, activity, whether it is painful when pressed.

3) The liver and spleen examination: normal range of liver and spleen voiced sector; liver and spleen palpation size, texture, whether it is painful when pressed.

4) Central central nervous system: meningeal irritation and pathological reflex.

5) Peripheral examination: skin rashes, skin stained yellow sclera, spider spots, liver palms.

(2) Basic operation.

1) To master the operation of pleural puncture.

2) To master the operation of the peritoneal cavity puncture.

3) To master the operation of lumbar puncture.

4) Be familiar with the placement of three-balloon catheter.

5) Be familiar with liver abscess puncture.

6) To get to know the needle biopsy of liver surgery.

7) To get to know the operation process of the treatment of severe hepatitis supported with artificial liver (if possible).

(3) The understanding of assistant test results.

1) Liver function tests and biochemical examination.

2) The serology test of viral hepatitis.

3) The indicators of pathogen examination.

4) Bacterial cultivation and sensitivity test.

5) Ascites examination.

6) CSF examination.

7) The special examinations related to infectious diseases, such as the B-mode ultrasonography, abdominal CT and MRI.

OPHTHALMOLOGY
眼　科　学

Chief Editor（主编）
Yan Hua（颜华） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）
Li Xiaoxin（黎晓新） Peking University（北京大学）
Wang Ningli（王宁利） Capital Medical University（首都医科大学）
Yao Ke（姚克） Zhejiang University（浙江大学）
Liu Yizhi（刘奕志） Sun Yat-sen University（中山大学）

Editors（编者）（按姓氏拼音排序）
Li Xiaoxin（黎晓新） Peking University（北京大学）
Liu Yizhi（刘奕志） Sun Yat-sen University（中山大学）
Wang Ningli（王宁利） Capital Medical University（首都医科大学）
Yan Hua（颜华） Tianjin Medical University（天津医科大学）
Yao Ke（姚克） Zhejiang University（浙江大学）

Course Description

Ophthalmology is a branch of clinical medicine, which deals with diseases of the visual organ. The teaching contents are anatomy and physiology of the eye, ophthalmologic examination and diseases. The broad goal of undergraduate teaching in ophthalmology is to provide such knowledge and skills to the student that shall enable him/her to practice as an ophthalmologist and as a primary eye care physician, and also to function effectively as a community health leader to assist in the implementation of national programme for the prevention of blindness.

Objectives

KNOWLEDGE

At the end of the course, the student will have knowledge of:

1. Common problems affecting the eye.
2. Magnitude of blindness in China and its main causes.
3. Principles of management of major ophthalmic emergencies.
4. Major systemic diseases affecting the eye.
5. Effect of local and systemic diseases on the patient's vision and the necessary action required to minimise the sequelae of such diseases.
6. Adverse drug reactions with special reference to ophthalmic manifestations.
7. Eye care education for prevention of eye problems.

SKILLS

At the end of the course, the student will be able to:
1. Elicit a history pertinent to general health and ocular status.
2. Perform diagnostic procedures such as visual acuity testing, examination of the eye.
3. Diagnose and treat common problems affecting the eye.
4. Interpret ophthalmic signs in relation to common systemic disorders.

Teaching and Learning Methods

1. Lectures and tutorials.
2. Problem-based learning.
3. Case-based learning.

Recommended Textbook

Yan Hua, Wang Ningli, Yao Ke. 2006. Ophthalmologhy [M]. Beijing: Tsinghua University Press.

Schedule Table

Chapter	Contents	Hours	Chapter	Contents	Hours
1	Introduction	1	9	Diseases of the sclera	1
2	Anatomy and physiology of the eye	2	10	Diseases of the lens	2
3	Ophthalmologic examination	2	11	Glaucoma	2
4	Diseases of the lids	1	12	Diseases of the uveal tract	2
5	Diseases of lacrimal apparatus	1	13	Diseases of the vitreous	1
6	Ocular surface diseases	1	14	Diseases of the retina	2
7	Diseases of the conjunctiva	2	15	Neuro-ophthalmology	2
8	Diseases of the cornea	2	16	Optics and refraction	2

Continued

Chapter	Contents	Hours	Chapter	Contents	Hours
17	Diseases of ocular motility	2	20	Ocular disorders associated with systemic diseases	2
18	Diseases of the orbit	2	21	Prevention and treatment of blindness	2
19	Ocular injury	2		Total	36

Course Contents

THEORY

Chapter 1 Introduction

1. The concept of ophthalmology.
2. The role of ophthalmology in clinical medicine.
3. History and development of ophthalmology.

Chapter 2 Anatomy and Physiology of the Eye

1. The local anatomy, tissue constitution, visual pathway and pupil pathway of the eyeball and affiliated apparatus associated with the need of ophthalmologic clinic.
2. Physiological functions and the clinical significance of the eyeball and affiliated apparatus.
3. The embryological development of the globe.

Chapter 3 Ophthalmologic Examination

1. Extraocular part: eyelid, lacrimal gland, cornea, and sclera. Intraocular part: anterial chamber, iris, pupil, lens, vitrious, fundus of eye. Eye movement, orbital form, eye position, intraocular pressure, etc.
2. Visual function examination.
3. The concept and clinical significance of ultrasound, electrooculogram, eletroretinogram, visual evoked potential and automatic quantitative perimetry.

Chapter 4 Diseases of the Lids

1. Dermatosis of eyelid: eyelid edema, herpes zoster eczema.
2. Blepharitis: blepharitis aquamosa, blepharitis ulcerosa, blepharitis angularis.
3. Disorders of the eyelid gland: hordeolum, chalazion.
4. Abnormal location of eyelid and eyelash: entropion, ectropion, eyelid dysraphia, ptosis, trichiasis.
5. Congenital abnormality: coloboma of the lid, distichiasis.

Chapter 5 Diseases of Lacrimal Apparatus

1. Disorders of the lacrimal passages: chronic dacryocystitis, acute dacryocystitis.

2. Disorders of the lacrimal gland.

Chapter 6 Ocular Surface Diseases

1. Anatomy of ocular surface.
2. Diagnosis and treatment of ocular surface disease.
3. Dry eye syndrome.

Chapter 7 Diseases of the Conjunctiva

1. Overview of disorders of the conjunctiva.
2. Bacterial conjunctivitis.
3. Chlamydial conjunctivitis.
4. Viral conjunctivitis.
5. Immunologic conjunctivitis.
6. Allergic conjunctivitis.

Chapter 8 Diseases of the Cornea

1. The clinical symptoms and the developmental process of keratitis.
2. The prevention and cure principles of keratitis and its complications.
3. The differential diagnosis of bacterial keratitis, viral keratitis and fungal keratitis.
4. Interstitial keratitis and mooren ulcer.
5. The difference of corneal degeneration and corneal dystrophy.

Chapter 9 Diseases of the Sclera

1. Scleritis.
2. Abnormal color of sclera.

Chapter10 Diseases of the Lens

1. Definition and classification of cataract.
2. The examination methods of cataracts.
3. The classification of senile cataracts and its surgical indication.
4. Congenital cataract, traumatic cataract, metabolic cataract, after cataract, dislocation of lens.

Chapter 11 Glaucoma

1. Overview of glaucoma.
2. Acute angle-closure glaucoma.
3. Chronic angle-closure glaucoma.
4. Secondary glaucoma.
5. Congenital glaucoma.
6. Open angle glaucoma.

Chapter 12 Diseases of the Uveal Tract

1. Overview of uvea diseases.
2. Anterior uveitis.

3. Posterior uveitis.
4. Intermediate uveitis.
5. Panuveitis.
6. Some special kinds of uveitis.
7. Congenital abnormality, including coloboma of uvea, remaining membrane of pupil or iris and aniridia.

Chapter 13 Diseases of the Vitreous

1. Synchysis and posterior vitreous detachment.
2. Inflammation of vitreous.
3. Hemorrhage of vitreous.
4. Parasite of vitreous.
5. Treatment of vitreous opacity.
6. Vitreoretinal traction.

Chapter 14 Diseases of the Retina

1. Retinopathy.
2. Vascular diseases of retina.
3. Degeneration of retina.
4. The diseases of macula.
5. Detachment of retina.

Chapter 15 Neuro-ophthalmology

1. Optic neuropathy.
2. Papillitis.
3. Papilloedema.
4. Ischemic optic neuropathy.
5. Optic atrophy.

Chapter 16 Optics and Refraction

1. Refractive status of the normal eye.
2. Classification of refraction error.
3. Accommodation and presbyopia.
4. The prevention of myopia.
5. The concepts of refraction.

Chapter 17 Diseases of Ocular Motility

1. The definition and cause of binocular single vision.
2. The classifications, causes, clinical manifestations, diagnosis and correcting principle of strabismus.
3. The definition, classifications and treatment of amblyopia.
4. The checking methods of strabismus.
5. Nystagmus.

Chapter 18 Diseases of the Orbit

1. The relation of the orbit and its neighbors, especially with accessory nasal sinuses.
2. The definition and clinical significance of exophthalmos.
3. Various exophthalmoses.
4. Orbital inflammation.

Chapter 19 Ocular Injury

1. Ocular blunt trauma.
2. Penetrating ocular trauma.
3. Chemical and burning ocular injury.
4. The harm to the eye, diagnosis and treatment of corneal foreign body.
5. The prevention of ocular injury.

Chapter20 Ocular Disorders Associated with Systemic Diseases

1. Internal diseases with special reference to ophthalmic manifestations.
2. Surgical diseases with special reference to ophthalmic manifestations.
3. Pediatric diseases with special reference to ophthalmic manifestations.
4. Diseases of gynecology with special reference to ophthalmic manifestations.
5. Dermatogic disease and venereal disease with special reference to ophthalmic manifestations.
6. Diseases of neurology with special reference to ophthalmic manifestations.
7. Oral diseases and diseases of otorhinolaryngology with special reference to ophthalmic manifestations.
8. The adverse drug reactions with special reference to ophthalmic manifestations.

Chapter 21 Prevention and Treatment of Blindness

1. The concept of blindness and low vision.
2. Criteria of blindness and low vision.
3. Prevention and treatment of several mainly blindness inducing disease.
4. Rehabilitation of blindness and low vision.

PRACTICAL

During the practical period, undergraduate students are to learn following clinical and skilled works under direct supervision of consultants and senior residents.

1. Elicit a history pertinent to general health and ocular status.
2. Perform diagnostic procedures such as visual acuity testing, slit-lamp microscope examination and ophthalmoscope examination.
3. Diagnose and treat common problems affecting the eye.

OTORHINOLARYNGOLOGY AND HEAD & NECK

耳鼻咽喉头颈科学

Chief Editors（主编）

Zhu Dongdong（朱冬冬） Jilin University（吉林大学）

Zhou Huifang（周慧芳） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）

Li Lin（李琳） Jilin University（吉林大学）

Meng Cuida（孟粹达） Jilin University（吉林大学）

Qian Wei（钱炜） Jiangsu University（江苏大学）

Editors（编委）（按姓氏拼音排序）

Li Lin（李琳） Jilin University（吉林大学）

Meng Cuida（孟粹达） Jilin University（吉林大学）

Niu Kai（牛锴） Jilin University（吉林大学）

Qian Wei（钱炜） Jiangsu University（江苏大学）

Xue Kai（薛凯） Jilin University（吉林大学）

Yu Hong（于红） Jilin University（吉林大学）

Zhou Huifang（周慧芳） Tianjin Medical University（天津医科大学）

Zhu Dongdong（朱冬冬） Jilin University（吉林大学）

Course Description

Otolaryngology and Head & Neck surgery focuses on the anatomy, physiology and disease of ear, nose, pharynx, larynx, trachea and esophagus of various organs and skull base, the neck and upper mediastinum. Otolaryngology and Head & Neck also involves in hearing, balance, smell, sound and speech, breathing and swallowing organs and skull base, neck and upper mediastinum of various parts of the anatomy and development, physiology and pathology, and disease diagnosis, treatment and prevention. Otolaryngology and Head & Neck surgery is divided into sub disciplines such as rhinology, laryngology, head and neck surgery. Each subfamily is still branching out too.

The character of Otorhinolaryngology and Head & Neck is that the organs are closely related in anatomy and function, and there is an organic connection with all systems of the body too. The organs communicate with each other in anatomy, and the coordination of many organs and organs can complete the physiological functions of the organism. Therefore, the pathogenesis, diagnosis and treatment of the related diseases

need to be dialectically understood.

The purposes for Otorhinolaryngology and Head & Neck learning are to master the basic theories and to provide theoretical basis for clinical use.

Objectives

At the end of the otorhinolaryngology posting. The student shall be able to.

1. Know the anatomy and biological function of ear, nose, and throat and head and neck.

2. Know the etiology, pathology, presentation and the treatment principle of the common diseases.

3. Suggest common investigative procedures and their intepretation to diagnose, differential diagnosis and manage the patient.

4. Know the rational treatment, also master the indication and their adverse effects.

5. Train to perform various basic surgical procedures including endoscopic examination of the nose, ear and throat, biopsy procedure, and etc. All the operations should be accompanied with a skilled doctor.

5. Assist common surgical procedures such as tonsillectomy, FESS, mastoidectomy, tracheostomy and head and neck surgery and etc.

6. Have awareness of literature reading and the advanced guideline study.

The students would be assigned in the ENT department. Practical between classes and graduation practical were arranged for the students.

Practical between classes

28 lessons was set for practice between classes. Here they would learn the basic ENT examination, normal anatomy, the basic procedure of endoscopic examination of the ear, nose and throat. The introduction of the common diseases such as vocal polyp, tonsillitis, adenoid hypertrophy, laryngeal cancer, and sinusitis were introduced by a tutor doctor. Medical history collection and physical check were done by the students, and then the discussion of the diagnosis and treatment were followed, the clinical treatment was shown later.

Graduation Practical

Complete all the diagnosis and treatment process of common diseases. And give a lecture on their own work. The period is 2 weeks.

Skills

1. Be able to understand the normal anatomy and function.

2. Be able to diagnose the common diseases.
3. Know the principle of treatment and have the ability of dealing with emergenly.

Teaching and Learning Methods

Theory: Teaching to medical students is provided with the help of lectures and tutorials that deal with the principles of Otolaryngology and head & neck surgery.

Practical: Practical training asks for medical students are to know the basic principles, diagnosis and treatment by the doctors and patients.

Recommended Textbooks

田勇泉. 2015. 耳鼻咽喉头颈外科学 [M]. 8 版. 北京：人民卫生出版社.
James B. Snow Jr, P. Aahley Wackym. 2009. Ballenger's Otorhinolaryngology Head and Neck Surgery [M]. 17th. Beijing: People's Medical Publishing House.

Schedule Table

Chapter 1	Course Description, Anatomy and physiology of the nose	2 hours
2	**Trauma of nose**	1
3	Epistaxis	1
4	**Nasal allergic disease**	2
5	Chronic rhinitis	1
6	**Chronic rhinosinusitis**	1
7	Carcinoma of sinuses	2
8	**Anatomy of pharynx,**	1
9	Adenoid hypertrophy	1
10	**Tonsil Diseases**	1
11	OSASH	1
12	**Carcinoma of nasopharynx,**	1
13	Laryngeal diseases Acute laryngitis in children Acute epiglottitis	1
14	**Carcinoma of larynx,**	1
15	Laryngeal pbstruction	1
16	**Anatomy of ear**	1
17	External ear disease Impacted Cerumen, External Otitis and Furunculosis of External Auditory Meatus Injury of Tympanic Membrane;	1
18	**Secretory otitis media**	2
19	Suppurative Otitis Media Acute Suppurative Otitis Media; Chronic Suppurative Otitis Media	2
20	**Otogenic complications**	1
21	Hearing loss and dizziness	1
22	**Trachea, Bronci and esophagus diseases**	2
	Total	28

Course Contents

THEORY

Chapter 1 Course Desciption, Anatomy and physiology of the nose

1. The history and present situation of the development of the head and neck surgery of the ear.

2. the anatomy of the nose and throat.

(1) External nose: external nasal stent and composition, external nasal venous reflux and characteristics.

(2) Nasal cavity.

Basic concepts and clinical significance of the structure of the inner and outer walls of the nasal cavity and the complex of the mouth of the nose.

Division and structural characteristics of nasal mucosa.

The blood supply under the 3 area of the nasal septum.

Nasal nerve distribution.

(3) Sinus group and sinus openings.

(4) The relationship between the nasal cavity and the sinus and the surrounding structures.

3 Physiology of the nose.

(1) Physiological functions such as ventilation, filtration, heating, resonance, reflection and smell of the nasal cavity.

(2) Concepts: nasal valve area, nasal cycle, nasal cilia mucus blanket, nasal and pulmonary reflex.

Chapter 2 Trauma of nose

1 The clinical manifestations and diagnosis of nasal bone fracture.

2 Principle of treatment of nasal bone fracture.

Chapter 3 Epistaxis

1. The cause of a nose bleeding: local causes and systemic causes.

2. Two treatment of nasal bleeding.

Chapter 4 Nasal allergic disease and nasal polyp

1 The pathogenesis of allergic rhinitis.

2 Allergic rhinitis clinical manifestations, emphasis on typical symptoms (sneezing, runny nose, nasal itching, nasal obstruction).

3 Treatment principles and commonly used drugs for allergic rhinitis.

4 The etiology and pathology of the nasal polyps; the clinical manifestations of

nasal polyps, the nasal examination can be seen in a single or multiple translucent, such as litchi meat mass; nasal polyps of the treatment: emphasis on the necessity of nasal endoscopic surgery.

Chapter 5 Chronic rhinitis

1. The categories and characteristics of the chronic rhinitis.
2. The etiology and pathogenesis of chronic rhinitis.
3. The classical symptom, physical sign and diagnosis of chronic rhinitis.
4. The principle of treatment of chronic rhinitis.

Chapter 6 Chronic rhinosinusitis

1. The categories and characteristics.
2. The etiology and pathogenesis of chronic rhinosinusitis.
3. The classical symptom, physical sign and diagnosis of chronic rhinosinusitis.
4. The principle of treatment of chronic rhinosinusitis.

Chapter 7 Carcinoma of sinuses

1. Benign and malignant tumors of nasal cavity and paranasal sinuses.
2. The incidence and pathological of malignant tumor of nasal sinuses.
3. The classical symptom and physical sign of carcinoma of maxillary sinus; With the development of the tumor, the symptoms of maxillary sinus carcinoma.
4. The principle of diagnosis and treatment of carcinoma of maxillary sinus.

Chapter 8 Anatomy of pharynx

1. Compartmentalization of pharynx and anatomies of nasopharynx, oropharynx and laryngopharynx.
2. Anatomies of pharyngeal wall, peritonsillar, retropharyngeal and parapharyngeal spaces and their clinical meanings.
3. Components of internal and external lymphoid rings of pharynx and their clinical meanings.
4. Anatomical characteristics of palatine tonsils and their clinical meanings.
5. Neural innervation and blood supply of pharynx.

Chapter 9 Adenoid hypertrophy

1. The causes of adenoid hypertrophy.
2. Clinical manifestations of adenoid hypertrophy, including local and systemic symptoms and examinations of adenoid hypertrophy.
3. Treatments of adenoid hypertrophy.

Chapter 10 Tonsil diseases

Acute tonsillitis

1. Etiologies and pathologies of acute tonsillitis.
2. Symptoms and signs of acute tonsillitis, diagnosis and differential diagnosis of acute tonsillitis.

3. Complications of acute tonsillitis.
4. Treatments of acute tonsillitis.

Chronic tonsillitis

1. Etiologies and pathologies of chronic tonsillitis.
2. Clinical manifestations, diagnosis and differential diagnosis of chronic tonsillitis.
3. Complications of chronic tonsillitis.
4. Treatments of chronic tonsillitis, indications and contraindications of tonsillectomy.

Chapter 11 Obstructive Sleep Apnea Hypopnea Syndrome (OSAHS)

1. Concept of OSAHS.
2. Etiologies and pathophysiologies of OSAHS.
3. Symptoms, examinations and diagnosis of OSAHS.
4. Treatments of OSAHS.

Chapter 12 Carcinoma of nasopharynx

1. Etiologies and pathologies of nasopharyngeal cancer.
2. Clinical manifestations, examinations and diagnosis of nasopharyngeal cancer.
3. Treatments of nasopharyngeal cancer.

Chapter 13 Laryngeal disease

Acute Laryngitis in Children

1. Anatomic characteristics of laryngeal cavity of children.
2. Etiologies and clinical manifestations of acute laryngitis of children.
3. Diagnosis and treatments of acute laryngitis of children.

Acute epiglottitis

1. Etiologies and pathogenic bacteria of acute epiglottitis.
2. Clinical manifestations and examinations of acute epiglottitis.
3. Diagnosis and treatments of acute epiglottitis.

Chapter 14 Carcinoma of Larynx

Carcinoma of larynx

1. The epidemiology and etiologies of laryngeal carcinoma..
2. The signs, symptoms of laryngeal carcinoma.
3. The differential diagnosis and evaluation of the laryngeal carcinoma.
4. The treatment types of laryngeal carcinoma.

Chapter 15 Laryngeal obstruction

1. The etiologies of laryngeal obstruction.
2. The signs, symptoms of laryngeal obstruction.
3. The differential diagnosis and evaluation of the laryngeal obstruction.
4. The goals and options of treating laryngeal obstruction.

Chapter 16 Anatomy of ear

1. The anatomy of temporal bone.

2. The anatomy of the auricle, middle ear and inner ear.

3. The physiology of the ear.

Chapter 17 External ear disease

Impacted cerumen external otitis and furunculosis of external auditory meatus

1. The etiologies, symptoms, otoscopic appearances and treatment of impacted cerumen and external auditory canal cholesteatoma.

2. The etiologies, symptoms, otoscopic appearances and treatment of acute external otitis and furunculosis of the external auditory meatus.

Injury of Tympanic Membrane

1. The etiologies of injuries of tympanic membrane;

2. The symptoms of the injury of tympanic membrane;

3. The managements of the injury of tympanic membrane;

4. The operation repairment of tympanic membrane.

Chapter 18 Secretory otitis media

1. Etiologies and pathologies of secretory otitis media;

2. Clinical manifestations of secretory otitis media;

3. Diagnosis and differential diagnosis of secretory otitis media;

4. Treatment and prevention of secretory otitis media.

Chapter 19 Suppurative otitis media

Acute suppurative otitis media

1. Etiologies and pathologies of acute suppurative otitis media;

2. Symptoms and signs of acute suppurative otitis media;

3. Diagnosis and differential diagnosis of acute suppurative otitis media;

4. Treatments and preventions of acute suppurative otitis media.

Chronic suppurative otitis media

1. Etiologies of chronic suppurative otitis media;

2. Classification of chronic suppurative otitis media;

3. Clinical features and pathology of chronic suppurative otitis media;

4. Differential diagnosis, prognosis and treatment of chronic suppurative otitis media.

Chapter 20 Otogenic complications

1. The etiologies and ways to infection of otogenic intracranial complications and extracranial complications.

2. Classification of otogenic intracranial complications and extracranial complications.

3. Clinical manifestations of retroauricular subperiosteal abscess, BeZold abscess, labyrinthitis, facial paralysis, epidural abscess, meningitis, thrombophlebitis of sigmoid sinus and brain abscess;

4. Diagnosis of otogenic intracranial complications;

5. Treatment principles of otogenic intracranial complications.

Chapter 21 Hearing loss and dizziness

1. The pathogenesis of deafness and the significance of the prevention, treatment and the rehabilitation of hearing loss;

2. The classifications and grades of hearing loss;

3. The etiologies and clinical manifestations of sensorineural hearing loss, conductive hearing loss and mixed hearing loss;

4. Development and application of hearing aids and cochlear implants;

5. Prevention and treatment of sensorineural hearing loss.

Chapter 22 Trachea, bronchi and esophagus disease

1. The anatomies of trachea, bronchi and esophagus.

2. The physiologies of trachea, bronchi and esophagus.

3. The etiologies of foreign bodies in the trachea and bronchi.

4. The signs and symptoms of foreign bodies in the trachea and bronchi.

5. The treatment guidelines of foreign bodies in the trachea and bronchi.

6. The etiologies of foreign bodies in the esophagus.

7. The signs and symptoms of foreign bodies in the esophagus.

8. The treatment guidelines of foreign bodies in the esophagus.

PRACTICAL

Practical between classes

1. To learn the special physical examination of ENT, to learn how to use the head mirror.

2. To training the special examination of ENT: ear speculum, electro-otoscope, siegle speculum, anterior rhinoscope, glossocatochus, indirect laryngoscope, tuning fork and so on.

3. To know the anatomy and presentation under the nasal endoscope, electronic laryngoscope and endotoscope.

4. To know the common accessory examination of ENT: pure-tone audiometry, impedance audiometry.

5. To know the emergency diseases of ENT.

Graduation Practical

1. To learn the special physical examination of ENT, to learn how to use the head mirror, history collection and system physical examination.

2. To training the special examination of ENT: ear speculum, electro-otoscope, siegle speculum, anterior rhinoscope, glossocatochus, indirect laryngoscope, tuning fork and so on.

3. To know the anatomy and presentation under the nasal endoscope, electronic laryngoscope and endotoscope.

4. To know the common accessory examination of ENT: pure-tone audiometry,

impedance audiometry.

5. To know the emergency diseases of ENT and know to rescue.

6. To know the special disposition operation of ENT: packing of anterior nares, puncture of maxillary sinus, negative pressure replacement, wash ear, wash cerumen, tracheotomy.

7. To know the indication, contraindication, complication and operation technique of ENT surgery: adenoidectomy, tonsillectomy, FESS, tracheotomy.

8. The teaching of diseases of ENT: chronic tonsillitis, adenoidal hypertrophy, chronic nasosinusitis, nasal polyp, secretory otitis media, suppurative otitis media, sudden deafness.

STOMATOLOGY

口 腔 科 学

Chief Editors（主编）
Zhou Nuo（周诺） Guangxi Medical University（广西医科大学）
Nong Xiaolin（农晓琳） Guangxi Medical University（广西医科大学）

Deputy Chief Editor（副主编）
Wang Huiming（王慧明） Zhejiang University（浙江大学）

Editors（编委）（按姓氏拼音排序）
Kang Na（康娜） Guangxi Medical University（广西医科大学）
Li Hao（李昊） Guangxi Medical University（广西医科大学）
Li Honyi（李鸿艺） Guangxi Medical University（广西医科大学）
Li Xiwen（李曦雯） Guangxi Medical University（广西医科大学）
Liang Feixin（梁飞新） Guangxi Medical University（广西医科大学）
Liu Hongyan（刘鸿雁） Guangxi Medical University（广西医科大学）
Nong Xiaolin（农晓琳） Guangxi Medical University（广西医科大学）
Qiu Rongmin（邱荣敏） Guangxi Medical University（广西医科大学）
Tao Renchuan（陶人川） Guangxi Medical University（广西医科大学）
Wang Cen（汪岑） Guangxi Medical University（广西医科大学）
Wang Daiyou（王代友） Guangxi Medical University（广西医科大学）
Wang Huiming（王慧明） Zhejiang University（浙江大学）
Xie Fangfang（谢方方） Guangxi Medical University（广西医科大学）
Ya Zuke（牙祖科） Guangxi Medical University（广西医科大学）
Zeng Xiaojuan（曾晓娟） Guangxi Medical University（广西医科大学）
Zhou Nuo（周诺） Guangxi Medical University（广西医科大学）

Course Description

Stomatology introduces basic principles and then applies clinical relevance in the anatomy of the teeth and oral cavity, common diseases in the teeth and oral and maxillofacial region. This course includes: dental and oral anatomy, occlusion and orthodontics, dental prevention and public health, pediatric dentistry, cariology and endodontics, periodontal diseases, oral mucosa diseases, local anesthesia and control of pain, dental extractions, infection of the tooth and jaws, oral and maxillofacial injuries, salivary gland diseases, odontogenic tumor, oral cancer and precancerous lesions,

prosthodontics, oral manifestations of systematic diseases, and oral radiology.

This course is mainly intended for medical students so it does not cover all aspects of dentistry. The aim is to provide the students with the general ideas and understanding of dentistry, make the students familiar with the diagnosis and treatment of dental diseases, prevention, to help develop an integrated concept of oral health and overall health in their future clinical careers.

Objectives

KNOWLEDGE

At the end of the course, the student shall be able to:

1. Describe the function and structure of the oral cavity as to location, color, size, and/or shape.

2. Understand the significance of dental prevention and the approaches of oral health promotion.

3. Explain the etiology, clinical presentation and treatment of tooth hard tissue diseases and diseases of pulp and periapical tissues, with emphasis on dental caries, pulpitis and periodontitis.

4. Acquire knowledge of classification of periodontal diseases and relevant clinical superficial signs, and list periodontal treatment sequence.

5. Master the typical clinical classification, clinical features, and treatment principles of oral mucosa disease and be familiar with the diagnosis and treatment.

6. Acquire knowledge of the types of oral local anesthetics and explain the potency, speed of onset and duration of action of common agents.

7. Understand the indication and contraindications for dental extractions and know the potential complications following extraction and related treatment.

8. Know the traits of infection of oral and maxillofacial region and master the principle for its diagnosis and treatment.

9. Indentify the types and management of dental injuries and know the principles of diagnosis and treatment for jaw fracture.

10. Acquire knowledge on maxillofacial pathology including premalignant diseases and oral cancer.

SKILLS

At the end of the course, the student shall be able to:

1. Plan and interpret laboratory investigations for the diagnosis of oral diseases and

its clinical manifestations.

2. Identify the types and symptoms of common oral diseases.
3. Acquire the ability to give tentative referral plans to the patient.
4. Familiar with the diagnosis and proper treatment for common oral diseases.
5. Developed a good techniques and methods for oral self-care.
6. To choice the healthy foods.
7. Make oral health promotion plan by using "common risk-factor approach"
8. Plan and do oral health education in community and schools.

Teaching and Learning Methods

Theory: Teaching medical students stomatology is provided with the help of lectures and tutorials that deal with anatomy, etiology, pathogenesis, laboratory diagnosis, treatment and control of oral diseases.

Practical: Student need to perform medical history taking and physical examination on oral and maxillofacial disease patient or standardized patient in dental clinic or simulation dental clinic lab under instructors'direction. Students may have a chance to work on case discussion and read oral and maxillofacial images. Practical training also includes students'group presentation and demonstration over the topic of "oral disease diagnosis and treatment, oral health care and promotion" et al.

Recommended Textbooks

Paul Coulthard, Philip Sloan, Keith Horner, et al. 2009. Oral and Maxillofacial Surgery, Radiology, Pathology and Oral Medicine [M]. 2nd ed. Beijing: Peking University Medical Press.

Peter Heasman. 2009. Restorative Dentistry, Paediatric Dentistry and Orthodontics [M]. 2nd ed. Beijing: Peking University Medical Press.

Pramod John R. 2014. Textbook of Oral Medicine [M]. 3rd ed. Noida: Jaypee Brothers Medical Publishers.

Sun Zheng. 2012. Oral Science [M]. Beijing: Higher Education Press.

Schedule Table

Chapter	Contents	Hours	Chapter	Contents	Hours
1	Anatomy of Oral Cavity and Maxillofacial Region	1	7	Cariology and Endodontics	2
2	Occlusion and Orthodontics	1	8	Periodontal Diseases	1
3	Age Changes and Related Disease in Oral Cavity	1	9	Oral Mucosa Diseases	1
4	Examination on Oral and Maxillofacial Disease Patient	2	10	Local Anesthesia and Control of Pain	2
5	Dental Prevention and Public Health	2	11	Dental Extraction and Dental Inplantation	2
6	Pediatric Dentistry	2	12	Infection in Oral and Maxillofacial Region	2

Continued

Chapter	Contents	Hours	Chapter	Contents	Hours
13	Injury of Oral and Maxillofacial Region	2	19	Disorders of the Temporomandibular Joint and Trismus	
14	Salivary Gland Diseases	1	20	Facial Nerve Disorders	1
15	Odontogenic Tumor	1	21	Oral and Maxillofacial Images and Digital Dentistry	1
16	Oral Cancer and Precancerous Lesions	2	22	Emergencies in Dental Practical	2
17	Prosthodontics	2		Total	3
18	Oral Manifestations of Systematic Diseases	1			36

Course Contents

THEORY

Chapter 1 Anatomy of Oral Cavity and Maxillofacial Region

1. Extra oral structures: maxilla, mandible, temporomandibular joint, lymph nodes, salivary glands.

2. The oral mucosa: mucous membrane, buccal and labial mucosa.

3. Structures external to the oral cavity: labial commissure, philtrum, vermilion zone naso-labial groove, labio-mental groove labial tubercle.

4. The oral vestibule: labial frenum, buccal frenum, maxillary tubeosity, retromolar area, Stensen's papilla, linea alba, Fordyce granules, anterior tonsillar pillar. Posterior tonsillar.

5. The oral cavity proper: palate, hard palate, soft palate, palatine torus, incisive papilla, palatine raphe, uvula, oral-pharynx, palatine tonsils, median sulcus, foramen caecum, lingual frenum, sublingual caruncles, sublingual fold, floor of the mouth, tongue, papillae (circumvallate, fungiform, filiform, foliate), taste buds, retro molar pad, gingiva.

6. Intraoral hard tissue structures and teeth:

(1) Dentitions:

primary (deciduous) dentition, permanent (succedaneous) dentition.

Formation of the dentitions, formulae for mammalian teeth, tooth numbering systems.

(2) Tooth:

1) Anatonical landmarks of tooth: crown, cervical line, root, bifurcation of roots, pulp chamber, pulp canal, apical foramen, enamel, cementum, cementoenamel junction, periodontal ligament, fissure, cusp, tubercle, pit, lobe, sulcus, fossa, ridge, marginal ridge, oblique ridge, triangular ridge, transverse ridge, developmental groove.

2) Surfaces and ridges of tooth: labial surface, buccal surface, facial surface, lingual surface, occlusal surface, incisal surface, proximal surface, mesial surface, distal surface, contact area.

3) Bony tissue support of tooth: alveolar process, alveolus.

4) Relationship of teeth: occlusion.

Chapter 2 Occlusion and Orthodontics

1. Introduction to malocclusion: Normal Occlusion and Malocclusion.
2. Displays of malocclusion.
(1) Malalignment.
(2) Abnormalities in tooth size and shape.
(3) Abnormalities in arches and jaws.
(4) Harm of malocclusion.
3. Aetiology of malocclusion.
(1) Genetic factors.
(2) Environmental factors.
4. Classification of malocclusion: Angle's Classification.
5. Clinical examination and diagnosis.
(1) Extraoral examination.
(2) Intraoral examination.
(3) Oral function and TMJ.
(4) Celphalometric analysis.
6. Principles of orthodontic treatment planning.
7. Treatment of malocclusion.
(1) Timing.
(2) Appliance.

Chapter 3 Age Changes and Related Disease in Oral Cavity

1. Introduction to age changes and related disease in the oral cavity.
2. Oral Mucosa.
(1) Traumatic Ulcers.
(2) Lichen Planus.
(3) Inflammatory lesions.
(4) Candidiasis.
(5) Angular Cheilitis.
(6) Vesiculobullous Diseases.
(7) Oral cancer.
3. Orofacial musculature.
4. Salivary gland and saliva.
5. Oral Motor and Sensory function.
6. Dental caries.
7. Gingival recession.
8. Attrition, abrasion, and erosion.

9. Sclerosis of dentin.

10. Secondary dentin.

11. Calcification of pulp: resorption of teeth, hypercementosis, cementicles, hypersensitivity, etiology.

12. Periodontal disease.

Chapter 4 Examination on Oral and Maxillofacial Disease Patient

1. Regular check-up of oral and maxillofacial region:

(1) General observation & history taking.

(2) Extra oral examination: methodology (visualization, palpation), visual areas (general patient condition, symmetry, swellings, lips/perioral tissues), palpation (lymph nodes, temporomandibular joint, salivary glands, problem-specific examination).

(3) Intraoral examination: swelling/lump, ulcer, paraesthesia/anaesthesia, paralysis/motor disturbance, tooth problem.

(4) Special investigations.

2. Medical records and writing standards: Chief complaint, history of the complaint, past dental history, social and family history, medical history, examination, provisional diagnosis, investigation, final diagnosis.

3. Periodontal probe and periodontal pocket measurement, dental pulp vitality tests, salivary gland secretory function test.

4. Imaging studies of oral and maxillofacial region: dental film, panoramic X-ray film, cephalometric roentgenogram, CT, cone beam CT, MRI, ultrasonography.

5. Chair side laboratory medicine: puncture and cytological smear, biopsy examination, biochemistry, immunology.

Chapter 5 Dental Prevention and Public Health

1. Introduction to oral health promotion.

(1) History development of health promotion.

(2) The Ottawa Charter (WHO 1986).

(3) Determinants of health.

2. Actions for Oral Health Promotion.

(1) Common risk-factor approach.

(2) Healthy life style, such as having healthy diet.

(3) Correct techniques and methods for oral self-care.

(4) Community action: the establishment of self-help groups and a network of community cafes and food co-operative for sharing and accessing the experience.

(5) The benefits of reorienting health services and building healthy public policy.

3. Approaches to Oral Health Promotion.

(1) Preventive approach.

(2) Behavior changes approach.

(3) Education approach.

(4) Empowerment approach.

(5) Social changes approach.

Chapter 6 Pediatric Dentistry

1. Obstruction of tooth replacement and eruption.

(1) Risk factors (Retained deciduous tooth, unhealthy oral habits, and heredity diseases).

(2) Treatment: tooth extraction, orthodontic treatment.

2. Caries of primary teeth.

(1) Clinic manifestation.

(2) Risk factors: bottle milk, snack intake, and tooth structure.

(3) Treatment: Restoration, crown, and root canal therapy.

(4) Prevention.

3. Pulpitis and periapical periodontitis of young permanent teeth.

(1) Clinic manifestation.

(2) Treatment: pulpotomy and apexification.

(3) Prognosis: periodic check.

4. Malocclusion.

(1) Clinic manifestation.

(2) Risk factors: caries, abnormal development of teeth, unhealthy oral habits, heredity and other factors.

(3) Treatment: Occlusive guidance.

(4) Prevention: form good oral health habits, intake less snack, reasonable use of fit and fissure sealant, regular dental visit.

5. Management of children's dental visit behaviors.

(1) Methods of management: appeasement surroundings for children with dental fear, experience before the treatment, tell show do method, restraint ban, encouragement, painless treatment.

(2) Management of developmental variation of normal structure.

(3) General anesthesia for exceptional child.

Chapter 7 Cariology and Endodontics

1. Introduction to caries.

2. Etiology of caries (bacteria related are Streptococcus mutans, Streptococcus sanguis, Lactobacillus species, Actinomyces species).

3. Symptom and Sign of Caries: susceptible teeth position and surface, clinical types of dental caries.

4. Diagnosis of Caries: medical history, oral examination, complement and alterative exam.

5. Method of treatment: chemical therapy, atraumatic restorative treatment, pit and fissure sealing, restoration therapy, Root canal treatment.

6. Prevention: brushing twice a day, flossing daily, regular professional check up, cleaning, fluoride, dental sealants.

Chapter 8 Periodontal Diseases

1. Introduction to periodontal diseases.

(1) The normal periodontium.

(2) The etiology of periodontal diseases.

(3) Dental bacterial plaque: Microflora adhering to the surface of the teeth or other soft tissues of the oral cavity.

(4) Most common related bacteria: Actinobacillus actinomycetemcomitans, Porphyromonas gingivalis, Tannerella forsythia, Fusobacterium nucleatum, Prevotella intermedia, Actinomyces viscosus, Treponema denticola.

2. The pathology of periodontal diseases: bleeding on probing, periodontal pockets, alveolar bone loss, tooth mobility and migration.

3. Periodontal diseases: gingivitis, chronic marginal gingivitis, periodontitis, chronic periodontitis (adult periodontitis), aggressive periodontitis (juvenile periodontitis), risk and the natural history of periodontal disease.

4. Treatment of periodontal diseases: oral hygiene instruction, patient education and home care (brushing, floss, interdental brushes, interdental tips, implant cleaners, therapeutic mouthwashes, and preventive toothpastes), initial therapy, teeth cleaning, scaling and root planning, periodontal surgery.

5. Root canal therapy (RCT): treatment procedures, microscopic endodontics.

Chapter 9 Oral Mucosa Diseases

1. Introduction to the field of oral medicine.

(1) Diseases of the oral mucosa.

(2) Infectious diseases of the orofacial region.

(3) Orofacial pain.

(4) Salivary gland and chemosensory disorders.

2. The commonest oral mucosal diseases.

(1) Recurrent aphthous ulcer (RAU): clinical feature, treatment (topical anesthetics, topical steroid preparations, tetracycline rinses).

(2) Herpetic Ulcers: pathogeny, clinical feature, treatment (antivirus drugs, topical treatment).

3. The most common opportunity fungal infection in oral mouth-candidiasis:

(1) Pseudomembranous form (in newborn-thrush).

(2) Pseudomembranous form (in adult pseudomembranous candidiasis): clinical feature, treatment (topical antifungal drugs, eliminate the other system disease).

4. Precancerous lesions/condition on the mucous.

(1) Oral lichen planus: clinical feature in oral mucosa (oral lesions appear in two main forms: reticular form and the erosive form), treatment (anti-inflammatory drugs, subsequent visit).

(2) Oral leukoplakia: definition, clinical feature, treatment (treatment depends on biopsy results: eliminate pathogeny, surgery).

Chapter 10 Local Anesthesia and Control of Pain

1. Characteristics of oral anesthesia and maxillofacial surgery.

(1) Characteristics of patients: large age span, difficult airway, oral and maxillofacial

deformity, and mental disorder.

(2) Characteristics of surgery: surgical site, radical surgery and reconstructive surgery, multimodality therapy and team approach, dental maxillofacial deformities and orthognathic surgery, the widely used of microsurgical technique, and massive hemorrhage during the surgery.

2. Introduction to the Oral anesthesia and maxillofacial surgery.

(1) Preoperative preparation.

(2) Premedication.

(3) Common types and selection of anesthesia: the influenced factors of selection, local anesthesia (LA), and general anesthesia (GA).

3. Introduction to sedation in stomatological clinic.

(1) Definitions: ADA's Guidelines, conscious sedation, deep sedation, general anesthesia.

(2) Patients selection and preparation: physical assessment, psychologic assessment, patient preparation dental anxiety scale.

(3) Methods in the practice of dental sedation: intramuscular injection, intravenous infusion, nitrous oxide inhalation sedation (pharmacology, advantages and disadvantages, indications and complications, application, and basic dental office emergency kit).

(4) Monitoring.

(5) Recovery and transport of sedated patients.

4. Analgesia in stomatological clinic.

(1) Definition.

(2) Peripheral and central mechanisms of pain generation.

(3) Assessment of pain and good pain management.

(4) Analgesia methods: drug analgesia (drugs in clinical use and pharmacology, adverse events and treatments), radiotherapy and chemotherapy, acupuncture analgesia, transcutaneous electrical nerve stimulation, nerve block, neurectomy, radiofrequency coagulation.

Chapter 11 Dental Extraction and Dental Implant

1. Indication for the extraction of teeth.

2. Contraindications for the extraction of teeth:

(1) Systemic contraindications: cardiac disease, hypertension, Disease of hematopoietic system, diabetes mellitus, hyperthyroidism, renal disease, hepatitis, pregnancy, menstruation period, malignant tumor, long term anticoagulant therapy, long-term adrenal cortical hormone therapy, nervous and mental disorders.

(2) Local contraindications: the acute inflammation.

3. Complications of dental extractions: postoperative pain, postoperative swelling, trismus, fracture of teeth, excessive bleeding, dry socket, postoperative infection, osteomyelitis, damage to soft tissues, damage to nerves, opening of the maxillary sinus, loss of tooth, fracture of jaw, dislocation of the mandible, displacement of tooth into the airway, surgical emphysema.

4. Dental extractions: armamentarium for dental extractions, simple exodontias, extraction technique.

5. Dental implant.

6. Dental implant is a surgical component that interfaces with the bone of the jaw or skull to support a dental prosthesis such as a crown, bridge, denture, facial prosthesis or to act as an orthodontic anchor.

(1) History and background.

(2) Osseo integration and its biological fundamentals.

(3) Classifications of dental implant system: root form implant and classification, selection of implant system and restorative management of dental implants.

(4) Indication for implant treatment.

(5) Assessment for dental implant surgery.

(6) Clinical examinations and treatment planning: presurgical investigations, imaging, surgical guide.

(7) Principles and procedure of implant surgery.

(8) Surgical techniques: bone augmentation, grafting techniques, sinus lift,

(9) Complications of dental implant surgery: hemorrhage, nerve injury, perforation of sinus membrane, adjacent teeth injury, mandible fracture, swallow of instrument, dehiscence, hematoma, infection, and implant loosening.

Chapter 12 Infection in Oral and Maxillofacial Region

1. Introduction to infection in oral and maxillofacial region.

2. The trait of infection in oral and maxillofacial region: trait of Anatomy, spreading route of infection, trait of pathogenic bacterium.

3. Diagnosis principles of infection in oral and maxillofacial region.

4. Treatment principles of infection in oral and maxillofacial region: rest, oral hygiene, pain relief (analgesics), supportive therapy, antibiotic therapy.

5. Surgical treatment incision and drainage.

6. Pericoronitis: definition, clinical features, diagnosis, principles, treatment principles.

7. Facial Space (or tissue space) infection: definition, clinical features, diagnosis principles, treatment principles.

Chapter 13 Injury of Oral and Maxillofacial Region

1. Causation for injury of oral and maxillofacial region.

2. The clinical features of injury in oral and maxillofacial region: rich blood circulation, teeth in oral cavity, prone to head injury, prone to neck injury, prone to asphyxia, interference with eating, prone to infection, special tissues injuries, deformity in the oral and maxillofacial region.

3. First aids for injury in the oral and maxillofacial region: asphyxia, hemorrhage, shock, head injury.

4. Soft tissue injury: abrasion wound, contused wound, punctured wound, incised wound, lacerated wound, bite wound.

5. The key points of treatment for different site wounds: lingual injury, buccal injury, palatal injury, lip injury.

6. Injury on the teeth and alveolar bones: tooth contusion, tooth dislocation, fracture of teeth, fracture of alveolar process.

7. Fractures of the jaws.

Chapter 14 Salivary Gland Diseases

1. The position of the salivary glands and the associated structure:

(1) Parotid gland.

(2) Submandibular gland.

(3) Sublingual gland.

(4) Minor salivary glands: labial gland, buccal gland, palatine gland, lingual gland.

2. Clinical features of salivary gland disease: swelling, facial nerve palsy, hyper salivation, dry mouth.

3. Investigation: history and clinical examination, sialometry, Sialochemistry, Salivary 4. Gland Imaging, Biopsy, Serologic Evaluation.

5. Salivary gland disorders.

(1) Obstructive salivary disorders: extraductal obstruction, duct wall thickening, intraductal obstruction.

(2) Acute sialadenitis: viral sialadenitis, bacterial sialadenitis.

(3) Chronic sialadenitis: bacterial sialadenitis, relapsing parotitis, radiation sialadenitis.

(4) Sjogren's syndrome: diagnosis, management.

(5) Sialolithiasis (Salivary Stones).

(6) Salivary gland tumors: benign tumors, malignant tumors, salivary gland cysts.

6. Surgery in: minor salivary glands, submandibular salivary gland, parotid salivary gland.

Chapter 15 Odontogenic Tumor

1. General features: cyst growth, classification of cysts, other cysts, odontogenic cysts.

2. Examination.

3. Specific cysts: radicular cyst, residual cyst, odontogenic keratocyst, dentigerous cyst, eruption cyst, gingival cysts, nasopalatine cyst, nasolabial cyst, solitary bone cyst, aneurismal bone cyst.

4. Surgical management of cysts: enucleation, marsupialization.

5. Odontogenic tumors: origin, behavior and classification.

6. Specific odontogenic tumors: odontogenic epithelial tumors, mixed epithelial, ectomesenchymal odontogenic tumors, mesenchymal odontogenic tumors, malignant, odontogenic tumors.

7. Surgical management of odontogenic tumors.

Chapter 16 Oral Cancer and Precancerous Lesions

1. Oral cancer: a type of head and neck cancer or any cancerous tissue growth located in the oral cavity.

(1) Introduction to oral cancer.

(2) Squamous Cell Carcinoma.

(3) Signs and symptoms.

(4) Causes: premalignant lesions, tobacco, alcohol, human papillomavirus, hematopoietic stem cell transplantation.

(5) Staging of Oral Cancer-TNM system.

(6) Diagnosis.

(7) Management.

(8) Prognosis.

(9) Prevention.

2. Precancerous lesions: a benign, morphologically altered tissue that has a potential rise of malignant transformation.

(1) Introduction to precancerous lesions.

(2) Red and white Precancerous lesions.

(3) Types (leukoplakia, erythroplakia, erythroleukoplakia, oral lichen planus, oral submucous fibrosis, and actinic cheilitis).

(4) Signs and symptoms.

(5) Causes.

(6) Diagnosis.

(7) Management.

(8) Prognosis.

3. Infectious Diseases.

(1) Oral Candidiasis.

(2) Hairy Leukoplakia.

Chapter 17 Prosthodontics

1. Introduction to prosthodontics.

2. History taking and examinations for patients with tooth defects and missing teeth.

3. Veneers: A layer of material placed over a tooth, either to improve the aesthetics of a tooth or to protect the tooth's surface from damage.

4. Inlays and onlays: An inlay is usually an indirect restoration (filling) consisting of a solid substance (as gold, porcelain or less often a cured composite resin) fitted to a cavity in a tooth and cemented into place; and an onlay is the same as an inlay, except that it incorporates a replacement for a tooth cusp by covering the area where the missing cusp would be.

5. Crowns: A type of dental restoration which completely caps or encircles a tooth or dental implant.

6. Fixed bridges: A replacement for missing teeth, and consists of an attachment of one or more false teeth attached to the teeth next to the space. This type of prosthesis is referred to as a fixed bridge because patients can not remove or reinsert it by them.

7. Removable partial dentures: A denture for a partially edentulous patient who desires to have replacement teeth for functional or aesthetic reasons and who cannot have a bridge (a fixed partial denture) for any reason, such as a lack of required teeth to serve as support for a bridge (i. e. distal abutments) or financial limitations. This type of prosthesis is referred

to as a removable partial denture because patients can remove and reinsert it when required without professional help.

8. Complete dentures: A replacement for all the teeth in either the upper jaw or the lower jaw, or both. And the only reason one would need them is because all his/her teeth are missing there. Patients can remove and reinsert it when required without professional help.

9. Dental implant: A surgical component that interfaces with the bone of the jaw or skull to support a dental prosthesis such as a crown, bridge, denture, facial prosthesis or to act as an orthodontic anchor.

Chapter 18 Oral manifestations of Systematic Diseases

1. Oral manifestation of AIDS: oral candidiasis, hairy leukoplakia, Kaposi's sarcoma, gum diseases, hepatic infections, others (numb).

2. Immunologic Diseases: allergy, serum sickness, generalized anaphylaxis, primary immune deficiencies, secondary immune deficiencies, connective-tissue diseases (systemic lupus erythematosus, discoid lupus erythematosus, systemic sclerosis, dermatomyositis, rheumatoid arthritis, Sjogren syndrome).

3. Disorders of endocrine system: pituitary gland, thyroid gland, pancreas, parathyroid gland, adrenal gland, pregnancy.

4. Gastrointestinal diseases: melanoplakia, Crohn's disease.

5. Hemorrhagic disorders: leukemia, lymphoma.

6. lacking of vitamins: angular stomatitis, burning pain of the oral mucosa.

7. Oral exam and dental managements of pre-head & neck radiation patient.

(1) Radiation damage to the oral cavity: loss of salivary gland function, radionecrosis of jaws, pulp injury, periodontal tissue injury.

(2) Oral exam dental managements of pre-head & neck radiation patient: periodontal scaling, treatment of dental caries and periodontal disease, extraction of teeth.

Chapter 19 Disorders of the Temporomandibular Joint and Trismus

1. Normal anatomy: components (the mandibular condyle, the mandibular fossa, interarticular disc, capsule, ligaments, ligaments), joint movement.

2. Classification of disorders of the TMJ.

3. Examination of articulatory system: visual examination, range of movement, joint and muscle palpation for tenderness, TMJ sounds, TMJ locking, tooth contact relationship and occlusion, signs of bruxism, other diagnostic aids (electromyography, ultrasound, mandibular tracking devices, pantomographic techniques to determine condylar movement, thermography).

4. Etiology of TMJ disorders: genetic, development, physiological, traumatic, pathological, environmental, mental and behavioral factors.

5. Generative joint disease: etiology, clinical features, management.

6. Rheumatoid arthritis: clinical features, management.

7. Developmental defects: trauma, dislocation, ankyloses, neoplasm.

8. Trismus: classification (congenital, traumatic, neoplastic tumors involving TMJ

and surrounding structures, neuromuscular disorders, reactive, psychogenic, drug-induced).

Chapter 20 Facial Nerve Disorders

1. Trigeminal neuralgia: a severe neuropathic chronic pain disorder affecting the trigeminal nerve (also known as the fifth cranial nerve: a three-branched nerve that carries sensations from the face to the brain and controls facial motor functions such as biting and chewing).

(1) Causes.

(2) Pathology.

(3) Signs and symptoms.

(4) Investigation.

(5) Diagnosis.

(6) Treatment: medication and surgery.

2. Glossopharyngeal neuralgia: a syndrome that consists of episodic ear and throat pain in the distribution of the ninth cranial nerve (AKA Glossopharyngeal nerve).

(1) Causes.

(2) Pathology.

(3) Signs and symptoms.

(4) Investigation.

(5) Diagnosis.

(6) Treatment: medication and surgery.

3. Facial paralysis: a common problem that involves the paralysis of any structures innervated by the facial nerve.

(1) Supranuclear and nuclear lesions: Central facial palsy can be caused by a lacunar infarct affecting fibers in the internal capsule going to the nucleus. The facial nucleus itself can be affected by infarcts of the pontine arteries. (Signs and symptoms, causes, investigation and diagnosis, treatment).

(2) Infranuclear lesions: Infranuclear lesions refer to the majority of causes of facial palsy. (Signs and symptoms, causes, investigation and diagnosis, treatment).

Chapter 21 Oral and Maxillofacial Images and Digital Dentistry

1. Evaluation of dental caries in X-ray images.

2. Evaluation of periodontitis in X-ray images.

3. Evaluation of impacted teeth in X-ray images.

4. Evaluation of dental trauma in X-ray images.

5. Evaluation of jaw bone fractures in X-ray images.

6. Evaluation of obstructive salivary disorders in X-ray images.

7. Evaluation of oral and maxillofacial tumors in X-ray images.

8. Introduction to cone beam computed tomography, ultrasonic inspection.

9. Introduction to Digital Dentistry.

(1) Background of Digital Dentistry.

(2) Introduction to digital Dental medical equipment: X-ray equipment, digital

impression instrument, Automatic root filling instrument, digital implant system, CAD/CAM, digital dynamic system.

Chapter 22 Emergencies in Dental Practical

1. Introduction to emergencies in dental practice.
2. ASA physical classification system.
3. Unconsciousness.
4. Vasodepressor syncope.
5. Postural hypotension.
6. Acute adrenal insufficiency.
7. Airway obstruction.
8. Hyperventilation.
9. Asthma.
10. Heart failure and acute pulmonary edema.
11. Cerebrovascular accident.
12. Seizures.
13. Allergy.
14. Chest pain.
15. Cardiac arrest.
16. Hemorrhage.

PRACTICAL

1. History taking.
History taking of the patient with caries.
History taking of the patient with periodontitis.
History taking of the patient with oral mucosa diseases.
History taking of the patient with injury of oral and maxillofacial region.
History taking of the patient with oral and maxillofacial tumors.
History taking of the patient with temporal-mandibular joint diseases.
History taking of the patient with tooth defect...
History taking of the partially edentulous patient.
History taking of the edentulous patient.
2. Physical examination of oral and maxillofacial region.
Intraoral examination.
(1) Examination for oral vestibule.
(2) Examination for dentitions.
(3) Examination for cavum oral cavity and partes oralis.
Maxillofacial examination.
(1) Examination for expression.
(2) Examination for maxillofacial appearance.

(3) Examination for facial organs.

(4) Examination for the location and nature of a lesion.

(5) Voice and auscultation.

Neck examination.

(1) General examination.

(2) Examination for lymph nodes.

Other examinations.

(1) Examination for temporal-mandibular joint.

(2) Examination for salivary glands.

3. X-ray examination of teeth and alveolar bone.

Introduction to maxillofacial imaging modalities: routine radiography, panoramic radiography, digital imaging, conventional tomography, computed tomography, cone beam computed tomography, magnetic resonance imaging, ultrasonography, nuclear medicine.

Plain radiography: intraoral radiography (periapical radiograph, occlusal radiograph), extra oral radiography (lateral radiogram of mandible, postero-anterior radiogram of mandible, roentgenography of zygomatic arch, radiogram of Water's position, panoramic radiographs).

Evaluation of dental caries in X-ray images.

Evaluation of periodontitis in X-ray images.

Evaluation of jaw bone fractures in X-ray images.

Evaluation of oral and maxillofacial tumors in X-ray images.

4. Dental health promotion and education skill.

Write an article for oral health education.

Practice a speech for oral health education in public.

Give a speech for oral health education in schools and kindergartens.

Teaching the children how to brush their teeth in schools and kindergartens.

5. Tooth brushing and plaque control.

Procedure of tooth brushing.

Sequence of tooth brushing.

Frequency of tooth brushing.

Methods of tooth brushing.

Evaluation of results of tooth brushing.

DERMATOLOGY AND VENEREOLOGY

皮肤性病学

Chief Editors（主编）

Zhang Anping（张安平） Anhui Medical University（安徽医科大学）
Liu Quanzhong（刘全忠） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）

Gao Min（高敏） Anhui Medical University（安徽医科大学）
Deng Danqi（邓丹琪） Kunming Medical University（昆明医科大学）
Wang Huiping（王惠平） Tianjin Medical University（天津医科大学）

Editors（编委）（按姓氏拼音排序）

Deng Danqi（邓丹琪） Kunming Medical University（昆明医科大学）
Gao Min（高敏） Anhui Medical University（安徽医科大学）
Liu Quanzhong（刘全忠） Tianjin Medical University（天津医科大学）
Ren Yunqing（任韵清） Zhejiang University（浙江大学）
Shi Yuling（史玉玲） Tongji University（同济大学）
Wang Huiping（王惠平） Tianjin Medical University（天津医科大学）
Zhang Anping（张安平） Anhui Medical University（安徽医科大学）

Course Description

The subject of Dermatology and Venerology is very important and one of the basic lessons for the clinical medicine students. The aim of this subject is to make the students know the etiology, clinical features, diagnosis and treatment of some common dermatoses and venereal diseases. The contents of this subject include viral and bacterial dermatoses, eczema and dermatitis, urticaria, drug eruption, erythematous and papulosqumous dermatoses, connect tissue diseases, bullous dermatoses, skin appendages disorders, pigmentation diseases, skin tumors and sexually transmitted diseases. The total teaching courses are about 36 hours, including 27 lecture hours and 9 practical hours. It is an important for students to master the basic knowledge on the Dermatology and Venerology and have a certain practice experience of the out-patients and in-patients. The teachers should use the various teaching methods in the class and make the students understand fully the basic knowledge of this subject. At the same time, we hope the patients could have a good treatment effect.

Objectives

KNOWLEDGE

At the end of the course, the MBBS students shall be able to:

1. To grasp the basic knowledge of Dermatology and Venerology.

2. To master the symptoms and signs of the dermatoses, especially the primary and secondary skin lesions.

3. To be familial with the common laboratory tests and their indications of the dermatoses and venereal diseases.

4. To master the nature, form, indication, application method and therapeutic principle of the external agents.

5. To understand the diagnosis methods of the common dermatoses and venereal diseases.

6. To be familial with the different therapeutic types of the common dermatoses and venereal diseases.

SKILLS

At the end of the course, the students shall be able to practice the following experiments:

1. To describe the primary and secondary skin lesions, and distinguish from them.

2. To know how to use the external agents according to the different skin lesions.

3. To be familial with the common laboratory examinations: diascopy, dermographic test, patch test, fungal examination, tests of sarcoptes scabie, skin biopsy.

4. To read the laboratory tests of the sexually transmitted diseases: the tests of neisseria gonorrhoeae, chlamydia, urealytium, syphilis.

5. To perform the simple physical treatment methods for the common dermatoses and venereal diseases.

Teaching and Learning Methods

Theory: Teaching Dermatology and Venerology to medical students is provided with the help of lectures and tutorials that deal with the principles of various dermatoses and venereal diseases.

Practical: Practical training for medical students is to know the etiology, diagnosis, differential diagnosis and treatment of plentiful diseases by observing the clinical

manifestation in clinic or in-patient department. The students are advised to pay attention to the extended research fields, fast-changing technologies in diagnosis and therapy.

Recommended Textbooks

Lian Shi. 2012. Dermatology and Venerology [M]. Beijing: Higher Education Press.
Verendra N Sehgal. 2004. Textbook of Clincal Dernatology [M]. 4th ed. Noida: Jaypee Brothers Medical Publishers LTD.
William D James, Timothy G Berger, Dirk M Elston. 2011. Andrews' Disease of the Skin [M]. 11 th ed. Philadelphia: Elsevier Medicine.

Schedule Table

Chapter	Contents	Hours*	Chapter	Contents	Hours*
1	General introduction	5.0	8	Connect tissue diseases	3.0
2	Viral and bacterial dermatoses	2.5	9	Bullous dermatoses	2.5
3	Fungal dermatoses	2.5	10	Disorders of skin appendages	2.5
4	Eczema and dermatitis	3.0	11	Pigmentation diseases	2.0
5	Urticaria	2.0	12	Common skin tumors	1.5
6	Drug eruption	2.5	13	Sexually transmitted diseases	4.0
7	Erythematous and papulosqumous dermatoses	3.0		Total	36

*including theory and practical hours

Course Contents

THEORY

Chapter 1 General introduction

1. Basic structure of the skin.

(1) Anatomy of the skin: the epidermis, dermis, the dermal-epidermal junction (Basement membrane zone, BMZ) and the subcutaneous tissue.

(2) Cutaneous appendages: the hairs, the sebaceous glands, the sweat glands and the nails.

(3) Others: the nerves, vessels and muscles of the skin.

2. Physiologic functions of the skin: protection, sensation, absorption, regulation of the temperature, secretion and excretion, metabolism function, as well as immune function.

3. Clinical manifestation and diagnosis of dermatosis and venereal diseases.

(1) Symptoms of the skin: itch, pain, burning, abnormal feeling, etc.

(2) Primary lesions: macules, papules, plaques, wheals, nodules, blister and bulla, pustules, nodule, cyst.

(3) Secondary lesions: erosion, ulcer, scale, maceration, fissure, excoriation, atrophy, crust, scar, lichenification.

4. Diagnosis of dermatosis and venereal diseases.

(1) Medical history.

(2) Physical examination: inspection, palpate, etc.

5. Laboratory tests.

(1) Common laboratory examinations: diascopy, dermographic test, patch testing, fungal examination, tests of sarcoptes scabie, skin biopsy.

(2) Laboratory tests of the sexually transmitted diseases: The tests of Neisseria gonorrhoeae, Chlamydia, Urealytium, Syphilis.

6. Treatment of dermatoses and venereal diseases.

(1) Systemic therapy: Antihistamine agents, Corticosteroids, Antifungal agents, Antiviral agents, Vitamins, Retinoids, Immunosuppressants, etc.

(2) Topical therapy: the nature, form, indication, and therapeutic principle of the external agents.

(3) Physical therapy: Phototherapy, Cryotherapy, Radiotherapy.

Chapter 2 Viral and bacterial dermatoses theory

1. Herpes simplex.

(1) Etiology: Herpes simplex viruses (HSV- Ⅰ and HSV-Ⅱ).

(2) Clinical features: frequently involved the skin or mucosa, painful vesicles in clusters lesions, self-limitation and recurrence.

(3) Treatment: Antiviral drugs, topical therapy.

2. Herpes zoster.

(1) Etiology: varicellazoster virus (VZV).

(2) Clinical features: unilaterally within the distribution of a cranial or spinal nerve corning from posterior ganglion; vesicles (invariably unilateral); neuralgic pain; rare recurrence.

(3) Diagnosis: typical clinical features, subjective symptoms.

(4) Treatment: Antzviral drugs, topical therapy, physical therapy and symptomatic treatment.

3. Warts.

(1) Etiology: human papilloma virus (HPV).

(2) Clinical features: Common wart: multiple, raised, hyperkeratotic lesions; Flat wart: multiple, smooth, slightly raised flat-surfaced hyperkeratotic lesions.

(3) Treatment: Anti-viral drugs, physical therapy and surgery.

4. Molluscum contagiosum.

(1) Etiology: molluscum contagiosum virus (MCV).

(2) Clinical features: discrete, slightly umbilicated, dome-shaped papules distributed

the trunk, face, extremities, conjunctiva of children or genital, perineal areas of adults.

(3) Treatment: physical therapy.

5. Impetigo.

(1) Etiology: infected by Staphylococcus aureus and/or Streptococcus hemolyticus.

(2) Clinical features: characterized by pustules and purulent crusts located on the exposed areas of the body.

(3) Treatment: Systemic antibiotics combined with topical therapy.

6. Erysipelas.

(1) Etiology: mainly infected by the beta-hemolytic group A streptococcic.

(2) Clinical features: local redness, heat, swelling and a highly characteristic raised indurate border.

(3) Treatment: Systemic antibiotics combined with topical therapy.

Chapter 3 Fungal dermatoses

1. Superficial mycoses: the mycoses caused by dermatophytes.

(1) Tinea Capitis: affected population, infectious ways, clinical types, diagnosis, prevention and treatment.

(2) Tinea manus and pedis: common pathogenic fungus, infectious ways, clinical features, clinical types, diagnosis, prevention and treatment.

(3) Tinea corporis and cruris: common pathogenic fungus, infectious ways, clinical features, diagnosis and differential diagnosis, prevention and treatment.

(4) Pityriasis versicolor: etiology, clinical features, diagnosis and treatment.

(5) Onychomycosis: common pathogenic fungus, infectious ways, clinical features, the clinical types of onycomycosis, diagnosis and differential diagnosis and treatment methods.

(6) Candidiasis: etiology, cutaneous and mucosa candidiasis, systemic candidiasis, laboratory examination and treatment.

2. Deep mycoses.

(1) Sporotrichosis: etiology, clinical features, diagnosis, and treatment.

(2) Chromoblastomycosis: etiology, clinical features, diagnosis, and treatment.

Chapter 4 Eczema and dermatitis

1. Eczema.

(1) Etiology: internal factors (genetic predisposition, neuropsychtic factors, chronic infections, etc.) and external factors (food allergens, inhalant allergens, daily objects, etc.).

(2) Clinical features: characteristics of acute, subacute and chronic eczema; other types of eczema.

(3) Diagnosis and differential diagnosis: According to the polymorphous lesions, occurring symmetrically, relapsing often and irresistible pruritus, to make the differential diagnosis from contact dermatitis, seborrheic dermatitis, atopic dermatitis.

(4) Treatment: systemic, topical and traditional Chinese medicine therapy.

2. Contact dermatitis.

(1) Etiology: primary irritation and allergic reaction.

(2) Clinical features: well-defined erythema, papules, vesicles, bullae in the localized area of allergic contact dermatitis.

(3) Diagnosis: the history of exposure, involved areas, characteristics of the lesions and patch test.

(4) Treatment: stopping contact allergens, anti-inflammatory and anti-allergic therapy, choosing suitable topical preparations according to the lesion types.

(5) Prevention: avoid contacting the allergen.

3. Atopic dermatitis (AD).

(1) Etiology: the interaction of genetic and environmental factors.

(2) Clinical features: the characteristic clinical features in the three phases (infant, childhood and adult).

(3) Diagnosis: history, family history, characteristics of the lesions, increasing level of IgE antibodies and eosinophilia.

(4) Treatment: basic therapy, topical therapy (emollients, topical steroids, wet dressing, etc.), systemic therapy (antihistamine, antibiotic, phototherapy, etc.).

Chapter 5 Urticaria

1. Etiology: food and food additives, drugs, infections, insect and plant factors, physiochemical factors, psychotic factors, systemic diseases, inherited factors, etc.

2. Clinical features:

(1) Skin presentations: the transient swelling (itching erythemas or wheals) of the skin and mucosa.

(2) Systemic symptoms of respiratory and digestive tracts.

(3) Characteristics of special urticaria forms: dermatographism, angioedema, cold urticaria, photosensitive and cholinergic urticaria.

3. Diagnosis: history, clinical features, differential diagnosis from erythema multiforme and acute abdomen, etc.

4. Treatment: avoiding the suspicious factors, antihistamine drugs, corticosteroids, topical drugs, traditional Chinese medicines, etc.

Chapter 6 Drug eruption

1. Etiology: individual factors (genetic idiosyncracy, enzyme deficiencies, etc.) and drug factors (antibiotics, antipyretics and analgesics, sedative hypnotics, etc.).

2. Pathogenesis: hypersensitivity and non-hypersensitivity mechanisms.

3. Clinical features: characteristics of fixed drug eruption, urticarial drug eruption, morbiliform or scarlatiniform drug erpution, erythema multiform drug eruption, Stevens-Johnoson syndrome (SJS)/toxic epidermal necrolysis (TEN), drug-induced exfoliative dermatitis, drug hypersensitivity syndrome (DHS), other types of drug eruptions.

3. Diagnosis and differential diagnosis: a positive history of drug administration, a latent period tied to the timeline for the treatment, typical clinical features of the different patterns of drug reacation, and exclusion of any other skin conditions with similar lesions or exanthematous infections.

4. Treatment:

(1) Principles: to discontinue all suspected drugs at once, to accelerate the excretion of the sensitizing drug, to quickly treat any complications.

(2) Treatment: minor types of drug eruptions (antihistamines, external agents, etc.), major type of drug eruption (glucocorticoids, preventing and treating secondary infections, strengthening supportive therapy, etc.).

Chapter 7 Erythematous and papulosqumous dermatoses

1. Psoriasis.

(1) Etiology and Pathogenesis: genetic factors, environmental factors, immune factors.

(2) Clinical features: characteristics of psoriasis vulgaris, psoriasis arthropathica, erythrodermic psoriasis, pustular psoriasis.

(3) Diagnosis and differential diagnosis: mainly based on the clinical appearances, biopsy of the skin lesions, to make the differential diagnosis from seborrheic dermatitis, tinea capitis, secondary syphilids, etc.

(4) Treatment: Topical therapy, systemic treatment, biologic agents, physical therapy, traditional Chinese therapy.

2. Erythema multiforme (EM).

(1) Etiology and Pathogenesis: infections, drug, foods, and physical factors, etc.

(2) Clinical features: characteristics of erythema-papule type, vesicle-bulla type, and severe erythema multiforme.

(3) Diagnosis and differential diagnosis: according to its clinical appearance and the patient's predilection age, to make the differential diagnosis from chilblains, lupus erythematosus, bullous pemphigoid, secondary syphilis, etc.

(4) Treatment: try to identify and remove the trigger factors (e. g. a suspected medication), topical and systemic treatment (antihistamines, glucocorticoids, etc.).

3. Lichen planus.

(1) Etiology and Pathogenesis: immunologic factors, chronic viral infections, stress, anxiety, allergic reactions to hypertension medications, coronary heart diseases, arthritis and even some autoimmune diseases, etc.

(2) Clinical features: elevated violaceousl, polygonal, flat-topped papules in the flexural surfaces of the extremities, the mouth and the genital mucous membranes with Wickham striae.

(3) Diagnosis and differential diagnosis: based on a distinct rash together with histopathological features. to make the differential diagnosis from atopic dermatitis, psoriasis, chronic eczema and leukoplakia, etc.

(4) Treatment: topical and systemic therapy, phototherapy with PUVA or UVB.

Chapter 8 Connective tissue diseases

1. The concept of connective tissue disease:

Connective tissue diseases is refers to the diseases involved of connective tissue, including lupus erythematosus, rheumatoid arthritis, scleroderma, dermatomyositis, nodular polyarteritis, wegener granulomatosis, giant cell arteritis, and sjogren's

syndrome, etc. The revision of the rheumatism category of American rheumatism association in 1982 pointed out that connective tissue diseases can also include allergic vasculitis, Behect's syndrome, nodular non suppurative febrile panniculitis, etc. Connective tissue diseases have some clinical and pathology and immunology of common characteristics, such as multiple system involvement (including skin, joints, muscles, heart, kidney, hematopoietic system, central nervous and so on), long duration and condition is complex, can be associated with fever, joint pain, vasculitis, blood sedimentation, gamma globulin heighten the rapid, etc.

2. The main features of connective tissue diseases:

(1) Autoimmune disease.

(2) With basic pathological changes of chronic inflammation of blood vessels and connective tissue.

(3) Multisystem organ involvement.

(4) Hormone and slow-acting drug are the priority therapy for them.

3. Subtypes of Lupus erythematosus:

(1) Discoid lupus erythematosus (localized).

(2) Discoid lupus erythematosus (generalized).

(3) Verrucous lupus erythematosus.

(4) Subacute cutaneous lupus erythematosus.

(5) Systemic lupus erythematosus.

(6) Lupus erythematosus profundus.

(7) Lupus erythematosus-erythema multiforme syndrome.

(8) Drug-induced lupus erythematosus.

(9) Chilblain lupus erythematosus.

(10) C2 deficiency lupus erythematosus-like syndrome.

(11) Neonatal lupus erythematosus.

4. ARA criteria of SLE: Malar Erythema, Discoid Lupus, Photosensitivity, Oral Ulcers, Arthritis, Serositis, Nephritis, Hematologic, CNS Changes, Immunologic disorder, ANA.

5. Auxiliary examination:

(1) General laboratory examination: blood, urine routine, liver and kidney function, blood sedimentation, CRP is helpful to diagnose the illness and the degree of activity analysis.

(2) The specific inspection:

① Joint fluid check: identification of inflammatory and non inflammatory.

② The autoantibodies detection: antinuclear antibody and antinuclear antibody spectrum tests are important serologic test for connective tissue disease.

(3) Imaging examination: X-ray plain film, CT, MRI, angiography, biopsy.

6. Treatments: NSAID drugs, corticosteroids, DMARD drugs (main effect mechanism, the routine use of dose, main adverse reaction), auxiliary treatment.

Chapter 9 Bullous dermatoses

1. Pemphigus.

(1) Etiology: Autoantibodies to desmogleins resulting in superficial bullae and

erosions (intra epidermal).

(2) Clinical features: Usually in elderly (40-60 years old); First present with mucosal erosions in the mouth; Flaccid blisters can occur on skin of upper trunk and back; it could be severe and increase risk of mortality; Nikolsky sign positive; Diagnose with the skin pathological characters, the direct and indirect immunofluorescence.

(3) Treatment: Managed with high dose corticosteroids or immunosuppressants/ intravenous immunoglobulin.

Note: Nikolsky sign: Apply tangential pressure with a finger or thumb to affected skin, apparently normal skin. Positive if there is extension of the blister or removal of epidermis. Underlying pathophysiology is acantholysis occuring in areas of erosions and bullae as well as in normal appearing skin.

2. Bullous pemphigoid.

(1) Etiology: Autoantibodies to hemidesmosome resulting in deep, tense bullae (subepidermal).

(2) Clinical features: Chronic autoimmune bullous disorder; Usually in elderly >65 years of age; Widespread itchy urticarial lesions, developing into tense bullae on the trunk (especially flexures and limbs); Affects mucosal surfaces only in 10% ~ 25%; Diagnose with the skin pathological characters, the direct and indirect immunofluorescence.

(3) Treatment: Mostly managed with high dose systemic corticosteroids or immunosuppressants.

Chapter 10 Disorders of skin appendages

1. Definitions: Acne is a chronic inflammatory disease hair of follicle sebaceous gland, Acne is characterized by comedones, papules, pustules, and nodules in a sebaceous gland distribution. often involving the face, back and chest and other parts of sebaceous richer-seborrhea area.

2. Etiology: The key factors are androgen, excess sebum, abnormal hair follicle sebaceous gland openings *propionibacterium acnes* infection. Several factors contribute to the development of acne.

3. Clinical features: The common form of acne seen most often in teenagers or young adults, acne vulgaris is the result of overactive oil glands that become plugged, red, and inflamed. Most outbreaks of acne can be treated by keeping the skin clear and avoiding irritating soaps, foods, drinks, and cosmetics. Severe acne and acne in those who are prone to scarring (see the article on Keloid) can be treated with topical creams and anti-inflammatory medications. Skin damaged by acne can be improved with treatment by a dermatologist or facial technologist. Techniques include dermabrasion ("sanding"), removal of scar tissue via laser, and chemical peels. Acne is also called pimples.

4. Diagnosis: According the age, location and typical lesions.

5. Treatment: Antibiotics (Minocycline), Benzoyl peroxide, Tretinoin, Tetracycline, Adapalene (Differin) and other methods.

Chapter 11 Pigmentation diseases

1. Vitiligo.

(1) Etiology: heredity, autoimmunity theory, nerve hypothesis, melanin autodestruction

theory.

(2) Clinical features: characteristics of lesions, isomorphism reaction.

(3) Diagnosis and differential diagnosis: according to the clinical features; different from pityriasis simplex, tinea versicolor.

(4) Treatment: topical therapy (psoralen, corticosteroids).

2. Chloasma.

(1) Etiology: sunlight, oral anticonceptive, cosmetics, pregnancy, endocrine, etc.

(2) Clinical features: predilection site, characteristics of lesions, aggravation after solarization.

(3) Diagnosis: according to the clinical features.

(4) Treatment: look for cause of the disease, topical depigmenting agent and traditional Chinese medicine.

Chapter 12 Common skin tumors

1. Benign tumors: clinical presentation and treatment of seborrhoeic keratoses, epidermal naevi.

2. Malignant tumor: clinical presentation and treatment of Squamous cell carcinoma, Basal cell carcinoma, malignant melanoma.

Chapter 13 Sexually transmitted diseases

1. Syphilis.

(1) Etiology: treponema palliclum.

(1) Clinical features: clinical stages, characteristics of lesions of primary, secondary stage.

(2) Diagnosis: history, clinical presentation, black visual field microscope test, serologic test.

(3) Treatment: the use of penicillin and other antibiotics, follow up.

2. Gonorrhea.

(1) Etiology: gonorrhea diplococci.

(2) Clinical features: the clinical characteristic of male, female gonorrhea and complications.

(3) Diagnosis and differential diagnosis: history, clinical symptoms, smears and culture. different from nongonococcal urethritis, and other vaginitis.

(4) Treatment: effective antibiotics.

3. Nongonoccal urethriritis.

(1) Etiology: chlamydia trachomatis and uraplasma urealyticum, etc.

(2) Clinical presentation: the characteristics of urethriritis in male and female.

(3) Diagnosis: history, clinical features, the discharge test and culture of chlamidia trcomytis and uraplasma urealyticum, etc.

(4) Treatment: effective antibiotics.

4. Condyloma acuminatum.

(1) Etiology: HPV, the high risk type relate with reproductive system tumor.

(2) Clinical feature: common site, the characteristics of lesion.

(3) Diagnosis: according to the clinical features.

(4) Treatment: topic and physical therapy.

5. Acquired Immunodeficiency Disease.

(1) Etiology: human immunodeficiency virus (HIV).

(2) Infectious ways: the three major ways.

(3) Clinical presentation: the three stages and manifestation of the skin.

(4) Diagnosis: serum HIV antibody test, clinical features, T4 cells reduce, etc.

(5) Treatment: etiology treatment, treatment the opportunistic infections.

(6) Prevention: global integrate prevention against the major three infectious ways.

PRACTICAL

1. Primary lesions and secondary lesions.

2. Laboratory examinations: Dermographic test, Patch test, Fungal examination.

3. Physical therapies: Phototherapy, cryotherapy.

4. Clinical features of Herpes simplex, Herpes zoster, common wart, flat wart and molluscum contagiosum.

5. Clinical features of impetigo and erysipelas.

6. Clinical features of tinea manus, tinea pedis, tinea corporis and tinea cruris.

7. Clinical features and the types of onycomycosis.

8. Clinical features of pityriasis versicolor.

9. Clinical features and treatment of the types of eczema.

10. Clinical features and treatment of contact dermatitis.

11. Clinical features of urticaria.

12. Typical clinical cases of drug eruptions.

13. Clinical features and treatment of the types of psoriasis.

14. Clinical features and treatment of erythema multiforme or lichen planus.

15. Manifestation and laboratory examination of lupus erythematosus.

16. The treatment of lupus erythematosus.

17. The clinical manifestation, characteristics, diagnosis, differential diagnosis and treatment of pemphigus and bullous pemphigoid.

18. The pathology and immunology of the skin of pemphigus and bullous pemphigoid.

19. The clinical features and diagnosis of acne vulgaris.

20. The treatment of acne vulgaris.

21. Vitiligo: characteristics of lesions, isomorphism reaction.

22. Chloasma: clinical features, topical therapy.

23. Characteristics of lesions in primary、secondary stage of syphilis.

24. Laboratory examination and treatment of syphilis.

25. Clinical features of condyloma acuminatum.

NUCLEAR MEDICINE

核 医 学

Chief Editors（主编）
Mao Chaoming（毛朝明） Jiangsu University（江苏大学）
Tan Jian（谭建） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）
Li Lin（李林） Jiangsu University（江苏大学）
Shi Liang（施良） Shanghai Jiaotong University（上海交通大学）

Editors（编委）（按姓氏拼音排序）
Li Lin（李林） Jiangsu University（江苏大学）
Mao Chaoming（毛朝明） Jiangsu University（江苏大学）
Mou Xiao（牟笑） Jiangsu University（江苏大学）
Shi Liang（施良） Shanghai Jiaotong University（上海交通大学）
Tan Jian（谭建） Tianjin Medical University（天津医科大学）
Wang Xuefeng（汪雪峰） Jiangsu University（江苏大学）
Zhou Jianming（周建明） Jiangsu University（江苏大学）

Course Description

Nuclear Medicine is a medical discipline which focus on the study of using radionuclide tracer technology of medical imaging in the diagnosis of disease, and explore its mechanism. It is an important visualization tool in modern analytical medicine research and an important part of clinical nuclear medicine. Through the study of this subject, nuclear medicine introduces the basic knowledge, basic theory and basic skills, also the development of modern molecular nuclear medicine. The most important task of nuclear medicine is to explain its role in the diagnosis of diseases, characteristics and clinical applications of diseases. The main parts of nuclear medicine include basis theory and clinical application. Basic theory of nuclear medicine mainly introduces the physical concepts, instruments, tracers and radiation protection related to nuclear medicine and also the future application and development of nuclear medicine in the era of molecular medicine. Clinical application of nuclear medicine reveals the imaging characteristics of various organs such as nerve, endocrine, heart, tumor and so on. And the emphasis is placed on basic principles and key points of image analysis. Nuclear Medicine is based on physiology, biochemistry and molecular biology.

The purposes of nuclear medicine learning are to master the basic theory, imaging features and clinical applications of different diseases, as well as radionuclide therapy. Through the study of this course, students can understand the advantages and values of nuclear medicine objectively.

Finally, we hope this discipline could inspire students to understand the frontiers of nuclear medicine and pay attention to new technologies in nuclear technology.

Objectives

At the end of the course, the MBBS students shall be able to:

1. To master the nuclear physics basic knowledge, types and preparations of radiopharmaceuticals, constructions of nuclear medicine instrumentations and relevant radioactive safety.

2. To master the principle and clinical applications of radionuclide imaging (SPECT, SPECT/CT, PET, PET/CT).

3. To master the mechanisms of radioactive treatment for some special diseases.

4. To know the patients'preparation and imaging acquisition of each scintigraphy.

5. To understand the principle and diagnostic criterion of ^{131}I radioiodine uptake test, bone mineral density test and Hp C-13/14 urea breath test.

6. To understand the side effects and dose calculating of radionuclide therapy.

At the end of the course, the student shall be able to practice the following experiments.

1. Make analysis for normal and abnormal nuclear medicine imaging (describe the views and diagnose).

2. Collect medical history for the patient who needs to do the radionuclide therapy, and assist the superior doctors to fulfill the treatment process.

Teaching and Learning Methods

Theory: Teaching nuclear medicine to medical students is supported by various of teaching means, such as lectures, tutorials, multimedia and clinical case discussion by which the students can master and understand the theoretical knowledge easily.

Practical: Practical training asks for medical students are to know the basic principles, imaging features and clinical application, and skills by making analysis for

normal and abnormal nuclear medicine imaging. The student is advised to understand the advantages and values of nuclear medicine objectively.

Recommended Textbooks

Kuang Anren (匡安仁), Li Lin (李林). 2013. Nuclear Medicine [M]. 5th ed. Beijing: High Education Press.

Paul E Christian. 2008. Nuclear Medicine and PET [M]. 5th ed. Oversea Publishing House.

Wang Tie (王铁). 2012. Nuclear Medicine [M]. Beijing: High Education Press.

Schedule Table

Chapter	Contents	Hours	Chapter	Contents	Hours
1	Physics in Nuclear Medicine	1	9	Respiratory System	1
2	Radiopharmaceuticals	1	10	Gastrointestinal System	1
3	Nuclear Medicine Instrumentation	1	11	Genitourinary System	2
4	Biological Effects and Safety of Radiation	1	12	Hematopoietic System & Lymphatic System	1
5	Radioimmunoassay Techniques *in vitro*	1	13	Skeletal System	2
6	Neurological System	1	14	Tumor and Inflammation Imaging	2
7	Endocrine System	2	15	Radionuclide Therapy	2
8	Cardiovascular System	4		Total	23

Course Contents

THEORY

Chapter 1 Physics in Nuclear Medicine

1. Concept of nuclide, isotope, isomer, half life, radionuclide.
2. Law and types of the decay and units of radioactivity.
(1) Nuclear decay.
(2) Law of nuclear decay.
(3) Units of radioactivity.
3. Structure of atom and the interaction of electrons with materials.
(1) Structure of the atom.
(2) Interaction of electrons with materials.
(3) Interaction of photons with matter.

Chapter 2 Radiopharmaceuticals

1. Properties of the ideal diagnostic radiopharmaceuticals.
2. Production of radionuclides and mechanisms of localization of radiopharmaceuticals.

Chapter 3 Nuclear Medicine Instrumentation

1. Structures of SPECT & PET.
(1) Detector.
(2) Type.
2. Principle to detect and measure the radiation.

Chapter 4 Biological Effects and Safety of Radiation

1. Concept of radiation safety.
2. General concept of the biological effects of radiation.
(1) Biological effects of radiation.
(2) Radiation safety.

Chapter 5 Radioimmunoassay Techniques *in vitro*

1. Principle of the radioimmunoassay techniques *in vitro* and clinical applications.
(1) The principle, classification, basic technique and method of radioimmunoassay.
2. General concept of the basic technique of the radioimmunoassay *in vitro*.
(1) Introduction of radioimmunoassay techniques *in vitro*.
(2) Immunoradiometric assay.
(3) Other *in vitro* radioimmunoassay.
(4) Nonradio nuclide labeled immun oassay.
(5) Clinical application of radioimmunoassay *in vitro*.

Chapter 6 Neurological System

1. Principle, imaging agent and clinical applications of cerebral perfusion imaging and cerebral glucose metabolic imaging.
(1) Cerebral perfusion imaging.
(2) Cerebral glucose metabolic imaging.
2. Image interpretation of cerebral perfusion imaging and cerebral glucose metabolic imaging.
3. General concept of cerebrospinal fluid imaging.
(1) Neurotransmitter and receptor imaging.
(2) Cerebrospinal fluid imaging.
4. Clinical application of cerebrospinal fluid imaging.

Chapter 7 Endocrine System

1. Types, concept and clinical meaning of thyroid nodule in thyroid imaging.
2. Principle of the thyroid imaging, the ^{131}I radioiodine uptake test and T3 suppression test, and parathyroid imaging.
3. General concept of the subacute thyroiditis in thyroid imaging.
4. General concept of parathyroid adenoma in parathyroid imaging.

5. Adrenal glands imaging.

6. Clinical application of parathyroid imaging and Adrenal glands imaging.

Chapter 8 Cardiovascular System

1. Principle, radiopharmaceuticals, image acquisition, results interpretation and clinical applications of myocardial perfusion imaging (rest/stress).

2. Principle, radiopharmaceuticals, and clinical applications of PET myocardial metabolic imaging.

3. Identification of viable myocardium.

4. General concepts of the principle and clinical application of equilibrium radionuclide ventriculography.

5. General concept of the principle of myocardial infraction imaging.

Chapter 9 Respiratory System

1. Principle and clinical applications of pulmonary ventilation/perfusion imaging.

2. Radiopharmaceuticals and method of pulmonary ventilation/perfusion imaging.

3. General concept of radionuclide venography.

4. Clinical application of pulmonary ventilation/perfusion imaging.

Chapter 10 Gastrointestinal System

1. Principles, agents, methods, clinical applications of liver colloidal imaging, liver blood pool imaging and hepatobiliary scintigraphy.

2. Clinical applications of liver colloidal imaging, liver blood pool imaging and hepatobiliary scintigraphy.

3. Clinical applications about gastrointestinal scintigraphy and salivary gland imaging.

4. Salivary gland imaging.

Chapter 11 Genitourinary System

1. Characteristic and clinical application of renography, including dieresis and captopril renography.

2. Renogram.

3. Dynamic renal imaging.

4. Principle, method and clinical application of renal dynamic imaging.

5. Vesicoureteral reflux (VUR).

Chapter 12 Hematopoietic System & Lymphatic System

1. Clinical applications of bone marrow scintigraphy.

2. Principle and method of BMS bone marrow scintigraphy and lymphoscintigraphy.

3. Hematopoietic system (blood volume measurement, RBC survival study, bone marrow scintigraphy).

4. Lymphatic system.

Chapter 13 Skeletal System

1. Principle, method, results interpretion and clinical application of bone

scintigraphy.

2. Imagine analysis and results interpretion of bone scintigraphy.

3. Bone mineral density measurement and the diagnosis of osteoporosis.

4. General concepts of the advantage and disadvantage of bone scintigraphy.

Chapter 14 Tumor and Inflammation Imaging

1. Principle and clinical application about ^{18}F-FDG tumor imaging.

2. SPECT and SPECT/CT tumor imaging.

3. Different points between tumor and infection imaging.

4. Types and principle about tumor imaging.

5. Principle, method and clinical application about infection imaging.

6. Infection and inflammation imagings.

Chapter 15 Radionuclide Therapy

1. Principles, methods, indications and clinical applications of hyperthyroidism and thyroid carcinoma.

2. Principle, method, indication and clinical application of bone metastasis.

PRACTICAL

1. Nuclear medicine imaging.

Personal radioactive protection, instrument operation, medical history-taking, imaging acquisition and processing, results interpretation, making nuclear imaging diagnosis.

2. Radionuclide therapy.

Visit the radionuclide therapeutic ward, simulate the doctor's visit and medical history collection; learn how to write radionuclide therapeutic medical record, calculate dose of radioactive drugs, and practice the process of radioactive drug administration.

EPIDEMIOLOGY
流 行 病 学

Chief Editors（主编）
Zhou Hongxia（周红霞） Guangxi Medical University（广西医科大学）
Wang Peishan（汪培山） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）
Zhong Qiuan（钟秋安） Guangxi Medical University（广西医科大学）
Su Li（苏莉） Guangxi Medical University（广西医科大学）

Editors（编委）（按姓氏拼音排序）
Huang Jiegang（黄颉刚） Guangxi Medical University（广西医科大学）
Liang Hao（梁浩） Guangxi Medical University（广西医科大学）
Liu Shun（刘顺） Guangxi Medical University（广西医科大学）
Long Jianxiong（龙建雄） Guangxi Medical University（广西医科大学）
Su Li（苏莉） Guangxi Medical University（广西医科大学）
Wang Peishan（汪培山） Tianjin Medical University（天津医科大学）
Xie Zhichun（谢志春） Guangxi Medical University（广西医科大学）
Ye Li（叶力） Guangxi Medical University（广西医科大学）
Zhong Qiuan（钟秋安） Guangxi Medical University（广西医科大学）
Zhou Hongxia（周红霞） Guangxi Medical University（广西医科大学）

Course Description

Epidemiology has been defined as "Study of the distribution and determinants of health-related states or events in specified population, and the application of this study to control of health-related problems". This emphasizes that epidemiologists are concerned not only with death, illness and disability, but also with more positive health states and with the means to improve health. It is the study and analysis of the patterns, causes, and effects of health and disease conditions in defined populations. Epidemiology is the cornerstone of public health, and shapes policy decisions and evidence-based practice by identifying risk factors for disease and targets for preventive healthcare. Epidemiologists help with study design, collection, and statistical analysis of data, amend interpretation and dissemination of results (including peer review and occasional systematic review). Epidemiology has helped developling methodology used in clinical research, public health studies, and, to a lesser extent, basic research in the biological sciences.

Major areas of epidemiological study include disease etiology, transmission, outbreak investigation, disease surveillance, screening, bio-monitoring, and comparisons of treatment effects such as in clinical trials. Epidemiologists rely on other scientific disciplines like biology to better understand disease processes, statistics to make efficient use of the data and draw appropriate conclusions, social sciences to better understand proximate and distal causes, and engineering for exposure assessment.

Objectives

KNOWLEDGE

Epidemiology course consists of lectures and practice in total 36 hours. The course objective is to cover the fundamentals of epidemiology and to provide an understanding of the subject and the particular factors which enable epidemics/outbreaks to occur. These factors include determinants of disease; characteristics of person, place and time; data handling; investigation of outbreaks; various types of studies; analytical studies and experimental study, etc. The course has entailed the application of the fundamentals to particular types of diseases, both chronic and acute; infectious and non-infectious.

SKILLS

At the end of the epidemiology study, the students shall be able to:

1. Clearly understand the definition of epidemiology and know the history of epidemiology development.

2. To know the classical methods of epidemiology study and to design a basic epidemiology study on health-related problems.

3. General measures of disease occurrence, basic measures of diseases prevention, control and interventions.

Teaching and Learning Methodology

Theory: By 24 hours lectures, let student to understand basic knowledge of epidemiology including definition of epidemiology, history and methodology of epidemiology study, general aspects of prevention and control of diseases and outbreak investigation. To know how to design a basic epidemiology study including descriptive, analysis and experimental study, and to know what is the common bias and how to avoid bias in the epidemiology study.

Practical: Practical training will be performed in 12 hours, aims to increase

understanding of knowledge taught by lectures, and to learn some basic skill of experiment in lab, and impress general theory and concept of epidemiology.

Recommended Taxtbooks

Elwood M. 2007. Critical Appraisal of Epidemiological Studies and Clinical Trials [M]. 3rd ed. New York: Oxford University Press.
Gordis L. 2009. Epidemiology [M]. 4th ed. Philadelphia: Saunders.
http://www.who.int/topics/epidemiology/en/.
http://www.who.int/global_health_histories/en/.
Raymond S Greenberg. 2002. Medical Epidemiology [M]. 3rd ed. New York: McGraw-Hill.
Rothman K J, Greenland S, Lash T L. 2008. Modern Epidemiology [M]. 3rd ed. Philadelphia. Lippincott Williams & Wilkins.
Wang Peishan. 2014. Epidemiology [M]. Beijing: Tsinghua University Press.

Schedule Table

Chapter	Contents	Presumptive hours
1	General aspects of epidemiology	2
2	Measure of disease currency or frequency	2
3	Survey and cross-sectional study of epidemiology	2
4	Case-control study	2
5	Cohort study	2
6	Experimental study: clinical trial (RCT)	2
7	Epidemiology of communicable disease	2
8	Epidemiology of Non-communicable disease	2
9	Causal inference	2
10	Screening test	2
11	Disease control and prevention	2
12	Design of epidemiology study	2
13	Practical	12
	Total	36

Course Contents

THEORY

Chapter 1 General Aspects of Epidemiology

1. Definition of epidemiology.
2. History of epidemiology.

3. Epidemiological approach.
4. Characteristics of epidemiology.
5. Applications of epidemiology.

Chapter 2 Measure of Disease Currency

1. Rate, ration, proportion.
2. Morbidity frequency measures.
(1) Incidence rate.
(2) Attack rate.
(3) Secondary attack rate.
(4) Prevalence rate.
3. Mortality frequency measures.
(1) Mortality rate.
(2) Case fatality rate.
(3) Survival rate.
4. Disease burden.
(1) Potential years of life lost.
(2) Disability adjusted life year.

Chapter 3 Survey and Cross-sectional Study of Epidemiology

1. General introduction.
2. Steps in designing and conducting a survey.
(1) Defining survey objectives.
(2) Defining survey variables.
(3) Defining study population.
(4) Data collection.
1) Interview.
2) Mail surveys.
3) Web-Based survey and electronic maild.
4) Mixed survey approach.
3. Sampling method.
(1) Random sampling.
1) Simple random sampling.
2) Systematic sampling.
3) Stratified sampling.
4) Cluster sampling.
5) Mixed sampling.
(2) Non-probability sampling (convenience, quota, purposive, snowball).
(3) Sample size (type Ⅰ error, type Ⅱ error, statistical power, degree of variability, level of precision).
4. Data gathering approaches (developing survey questionnaire).
5. Biases in health survey.
(1) Selection bias.

(2) Non-response bias.
(3) Interviewer bias.
6. Advantages and pitfalls associated with cross-sectional studies.

Chapter 4 Case–Control Study

1. General introduction to case-control study.
(1) Definition.
(2) Principles of case-control study.
(3) Characteristics of case-control study.
(4) Types of case-control study.
2. Design of case-control study.
(1) Example1.
(2) Selection of cases.
(3) Selection of controls.
(4) Determination of exposure.
(5) Sample size consideration.
(6) Data collation.
3. Data analysis.
(1) Unmatched case-control study.
1) Example2.
2) Construction a 2 × 2 table.
3) Chi-Square test.
4) Calculation of odds ratio (OR).
5) Construction 95% confidence interval (CI) for OR.
(2) Pair matched case-control study.
1) Example3.
2) Construction a 2 × 2 table.
3) Chi-Square test.
4) Calculation of OR.
5) Construction 95%CI for OR.
4. Bias in case-control study.
(1) Selection bias.
(2) Information bias.
(3) Confounding bias.
5. Advantages and limitations of case-control study.
(1) Advantages.
(2) Limitations.

Chapter 5 Cohort Study

1. Introduction of analytical epidemiology.
2. Definition of cohort study.
3. Design and conduct a cohort study.
4. Outcome measure and data analysis.

5. Types of bias.

6. Advantage and disadvantage of cohort study.

Chapter 6 Experimental Study: Clinical Trial

1. Overview of a clinical trial.

2. Phases of clinical trials.

3. Design of clinical trials.

(1) Planning.

(2) Study population.

(3) Sample size.

4. Principles of clinical trials.

(1) Randomization.

(2) Blinding.

(3) Randomization.

(4) Control group.

(5) Intervention.

5. Collecting, sorting and analyzing materials.

(1) Collecting materials.

(2) Sorting materials.

(3) Analyzing materials.

6. Bias and its control.

(1) Selection bias.

(2) Measurement bias.

(3) Interference and contamination.

(4) Compliance.

7. Advantages and disadvantages of clinical trials.

(1) Advantages.

(2) Disadvantages.

Chapter 7 Epidemiology of Communicable Disease

1. General introduction to communicable disease.

(1) Definition: communicable disease, emerging and re-emerging.

infectious disease, notifiable disease, zoonosis.

(2) History of communicable disease:

1) Burden of communicable disease.

2) Achievement in communicable disease control.

3) Problems of communicable disease in future.

2. Outbreak investigation of communicable disease.

3. Principles of communicable disease prevention and control.

(1) Three links of communicable disease epidemic process, prevention and outbreak control.

1) Source of infection.

2) Route of transmission.

3) Susceptible population.
(2) Prevention of emerging and re-emerging infectious.
1) Global health.
2) One health and zoonosis.

Chapter 8 Epidemiology of Non-communicable Disease

1. Introduction.
(1) Define the scope of non-communicable diseases epidemiology.
(2) Type of non-communicable diseases.
(3) Recent trends in mortality.
(4) Characteristics of non-communicable diseases.
2. The descriptive epidemiology of non-communicable disease.
(1) Person.
(2) Place.
(3) Time.
3. Causation framework.
(1) Modifiable risk factor.
(2) Non-modifiable risk factor.
4. Strategies and measures of prevention.
(1) Primordial prevention.
(2) Primary prevention.
1) Population strategy.
2) High-risk individual strategy.
(3) Secondary prevention.
(4) Tertiary prevention.
5. Population-based screening programmers.

Chapter 9 Causal Inference

1. Concepts of cause.
2. Sufficient causal model.
3. Process of establishing causality.
4. Criteria for causality.
(1) Mill's canons.
1) Agreement canon.
2) Difference cannon.
3) Residues cannon.
4) Concomitant variation canon.
(2) Koch's Postulates.
(3) Hill's Criteria.
1) Strength.
2) Temporality.
3) Experimental evidence.
4) Coherence.

5) Consistency.
6) Biological gradient.
7) Specificity.
8) Plausibility.
9) Analogy.
5. Non-causal associations: the role of bias and confounding.
(1) Chance.
(2) Confounding.
(3) Bias and its control (selection bias, information bias and misclassification).

Chapter 10 Screening Test

1. Definition.
2. Purpose.
3. Design of studies to evaluate test performance.
(1) Gold standard.
(2) Study subjects.
(3) Sample size.
(4) Blinding the investigators.
(5) Determination of the test cutoff score.
(6) Statistical methods for diagnostic testing.
(7) Accuracy of diagnostic test.
(8) Reliability of a diagnostic test.
(9) Effectiveness of a diagnostic test.
4. Trade-offs between sensitivity and specificity.
5. Methods to determine the cutoff value.
(1) Statistical.
(2) Clinical methods.
6. Improving the efficiency of a diagnostic test.
(1) Multiple tests.
(2) Parallel tests.
(3) Serial tests.
7. Increasing the prevalence of disease.
(1) Referral process.
(2) Selected demographic groups.
(3) Specifics of clinical situation.

Chapter 11 Disease Control and Prevention

1. Definition and classification of diseases by WHO.
2. Surveillance of disease.
(1) Surveillance of chronic disease.
(2) Surveillance of infectious disease.
3. Monitory of disease outbreak.
4. Health education, promotion and intervention.

Chapter 12 Design of Epidemiologic Study

1. Topic selection in epidemiological study.
(1) Basic principles.
1) Innovativeness.
2) Scientificity.
3) Practicability.
4) Feasibility.
(2) Source and range of topics.
2. Principle of epidemiological study.
(1) Control.
(2) Replication.
(3) Randomization.
(4) Blindness.
3. Accuracy and validity of epidemiologic study.
(1) Improve the accuracy of research.
1) Sample size.
2) Researching efficiency (composition of sample, hierarchical.
design and measurement of researching efficiency).
(2) Improve the validity of research.
4. Procedures and steps of epidemiologic study.
(1) Put forward the cause assumption (descriptive Research).
(2) Inspection the cause assumption (analytic research).
(3) Verify the cause assumption and intervention effect evaluation (experimental research).
(4) Public health policy (disease surveillance and long-term intervention).
5. Several key questions of epidemiologic research design.
(1) Make the objective clearly.
(2) Research object selection.
1) Overall requirements.
2) Inclusion and exclusion criteria.
3) Informed consent form.
(3) Research method selection.
1) Classification.
2) Select indications.
3) Comparison of different methods.
(4) Estimation of sample size.
1) Meaning.
2) Influencing factors.
3) Sample size estimation method of different types of study.
(5) Determination of research variables.
1) Exposure variable.

2) Outcome variable.

(6) Design of questionnaire.

1) Construction.

2) Basic principles.

PRACTICAL

1. Calculations of various rates.
2. Random sampling.
3. Evaluation index and computational method of screening test.
4. Data analysis of unmatched case-control study.
and data analysis of pair matched case-control study.

EMERGENCY MEDICINE

急诊医学

Chief Editors（主编）

Fang Xiangming（方向明） Zhejiang University（浙江大学）
Lu Yuanqiang（陆远强） Zhejiang University（浙江大学）
Chai Yanfen（柴艳芬） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）

Xu Jia（徐佳） Zhejiang University（浙江大学）
Pan Jian（潘建） Zhejiang University（浙江大学）
Fang Wen（方雯） Zhejiang University（浙江大学）
Cheng Baoli（程宝莉） Zhejiang University（浙江大学）
Wang Yan（王妍） Zhejiang University（浙江大学）

Editors（编委）（按姓氏拼音排序）

Chai Yanfen（柴艳芬） Tianjin Medical University（天津医科大学）
Cheng Baoli（程宝莉） Zhejiang University（浙江大学）
Fang Wen（方雯） Zhejiang University（浙江大学）
Fang Xiangming（方向明） Zhejiang University（浙江大学）
Lu Yuanqiang（陆远强） Zhejiang University（浙江大学）
Pan Jian（潘建） Zhejiang University（浙江大学）
Wang Yan（王妍） Zhejiang University（浙江大学）
Xu Jia（徐佳） Zhejiang University（浙江大学）

Course Description

The course of Emergency Medicine is committed to providing the students with the knowledge and skills required for the prevention, diagnosis and management of acute and urgent aspects of illness and injury, which are the prerequisites for success in their professional career. The Emergency Medicine course is a 2-month (32 hours) course that includes all topics covered in adult emergencies (obstetric and gynecologic emergencies, pediatric emergencies are not included in this course). Lecutres, case studies, patient assessment drills, and a final simulation will be used for teaching. Detailed information and schedules can be viewed below.

The goal of the Emergency Medicine course is to provide learning opportunities

that will enable students to develop the knowledge, skills, and attitudes necessary to:

1. Recognize, triage and provide initial management of common urgent and emergent medical/surgical problems in patients of any age or gender.

2. Acquire basic and advanced manual skills in the management of common urgent/emergent medical/surgical problems.

3. Assess patients quickly and efficiently, including the urgency of patients.

4. Work as a member of an emergency department team.

5. Understand the role of consultants within the framework of emergency department.

Objectives

KNOWLEDGE

At the end of the course, the MBBS students shall be able to:

1. Understanding of the principles of early intervention, including:

(1) Prehospital emergency care.

(2) Concepts of Emergency medicine.

2. Understanding of the principles of time management, including:.

(1) Prioritization and triage.

(2) Stabilization for transport.

(3) Simultaneous triage of multiple trauma patients or patients with serious medical illnesses.

(4) Efficient resource utilization.

(5) Access to consultants or information.

3. Understanding of the assessment and management of emergency situations, including:

(1) Trauma: primary and secondary assessment of a trauma patient with multiple injuries, by mechanism of injury (blunt vs penetrating trauma), by site of injury (head, eye, chest, spinal cord and bony spine, abdomen, extremity, urogenital system).

(2) Neurological emergencies: the comatose patient, status epilepticus, spinal cord compression, stroke, syncope.

(3) Psychiatric emergencies: acute psychiatric breaks, suicidal patients, situational crisis, psychosis, domestic abuse issues.

(4) Burns: classification, outpatient management of first and second degree burns, fluid replacement protocols, indications for hospitalization/consultation.

(5) Violent patients.

(6) Victims of violence.

4. Identifying those osteopathic clinical skills that provide an advantage in the clinical setting in differential and final diagnosis of cases including:

(1) The osteopathic structural exam.

(2) Palpatory and observation skills of structure and function.

(3) Advanced musculoskeletal examination skills.

(4) Neurologic evaluation skills.

5. Providing the appropriate osteopathic clinical skills in the treatment of:

(1) Somatic dysfunction.

(2) Sprains.

(3) Muscular strains.

(4) Dislocations.

(5) Edema reducing techniques.

6. Using the osteopathic principles and methods in the need to:

(1) Assure the patient's psychosocial needs are met.

(2) Assure the whole-person concept is realized in that injury or illness in one system may be related to or dysfunction in additional systems.

7. Understanding of the principles of management of critical care situations, including:

(1) Acute respiratory problems and airway obstruction.

(2) Arrhythmias: ventricular tachycardia, ventricular fibrillation, bradycardia, supraventricular tachycardia.

(3) Cardiac arrest.

(4) Ischemic heart disease: acute MI (thrombolysis), cardiogenic shock, unstable angina.

(5) Cardiovascular pharmacology.

(6) Resuscitation: organization (coordination, recording, communication), special circumstances (drowning/electrocution/lightning injury/hypothermia/hyperthermia), and immediate post-resuscitative care.

(7) Other cardiovascular crises: aneurysms of thoracic or abdominal aorta, traumatic diaphragmatic hernia.

(8) Acid/bases disorder.

(9) Shock: hypovolemic, restrictive, neurogenic, cardiogenic, septic shock.

(10) Infectious disease emergencies (meningitis, toxic shock).

8. Understanding of environmental exposures, including:

(1) Bites and stings.

(2) Poisonous plants.

(3) Inhalations.

(4) Hypersensitivity/anaphylaxis.

9. Understanding of toxicological emergencies, including:

(1) General clinical treatment principles of poisoned patient.

(2) Access to poison control data bases.

(3) Basic decontamination procedures.

(4) Consultation/definitive management.

10. Understanding of disease prevention, including immunization (active and passive), antibiotic prophylaxis.

11. Understanding basic therapeutic methods of fracture/dislocation, including:

(1) Simple dislocations of fingers and toes.

(2) Radial head dislocation.

(3) Anterior glenohumeral dislocation.

(4) Patellar dislocation.

(5) Simple undisplaced fractures of fingers, toes, metacarpals, metatarsals, radius, ulna, humerus, rib, and fibular.

(6) Compression fractures of thoracic and lumbar vertebrae.

(7) Undisplaced pubic rami pelvic fracture.

12. The competence required to achieve the following certifications:

(1) Basic cardiac life support (BCLS).

(2) Advanced cardiac life support (ACLS).

(3) Pediatric advanced life support (PALS).

(4) Advanced life support in obstetrics (ALSO).

SKILLS

At the end of the course, the MBBS students shall practice the following skills:

1. Understanding of the interpretation of auxiliary examination, including:

(1) EKG.

(2) Radiographs: cervical spine, chest, abdominal series, pelvis, long bones, basic unenhanced head CT.

(3) Ultrasound.

(4) Monitors (cardiac and pulse oximetry).

2. Proficiency in the following techniques:

(1) Acute MI protocol.

(2) Peripheral IV access.

(3) Lumbar puncture.

(4) Simple laceration repair.

(5) Simple splinting of fractures.

(6) Local blocks.

(7) Cast/splinting.

(8) Optimizing airway patency.

(9) Bag-mask-valve ventilation.

3. Understanding of the following procedures and techniques:

(1) Gastric lavage.

(2) Intraosseous infusion.

(3) Central lines with ultrasound guidance.

(4) Procedural Sedation.

(5) Complex lacerations.

(6) Endotracheal intubation.
(7) Regional blocks.
(8) Defibrillation/cardioversion.
(9) Pericardiocentesis.
(10) External cardiac pacing.

Teaching and Learning Methods

Theory: Emergency medicine is an interdisciplinary and professional discipline in medicine. The inculcation education is the main method of theory teaching of emergency medicine course. In addition to the knowledge received in the classroom teaching sites, students are expected to read the content of the assigned textbooks and online materials in order to complete the entire curriculum. These textbooks and required readings are listed under Recommended Textbooks. Computer-based materials may also be used to supplement their learning.

Practical: Practical training asks for medical students are to know the basic principles, methods and techniques, strategies, and skills used for diagnosis and management of the emergency patients. Instructors may use made-up victims, stage blood, simulator models and videos as means for enhanced learning.

1. Video Guided Self-study Module.

The self-study module for students includes several web-based educational modules, each based on a specific emergency medicine topic. The target audiences for these modules are students who desire a basic introduction to emergency medicine diagnosis and management.

2. Simulation-based Training Module.

The simulator model allows students to perform their first attempt on a standard patient or a model at a level closer to competence. Complex procedures may be learned more effectively if the complexity of a set of tasks or steps is increased gradually. This module is the supplement of the traditional approach.

Recommended Textbooks

Allan B Wolfson, Robert L Cloutier, Gregory W Hendey, et al. Harwood-Nuss'Clinical Practice of Emergency Medicine [M]. 6th ed. Philadelphia: LWW.

John A. Marx, Chai Yanfen (柴艳芬). 2016. Rosen's Emergency Medicine: Concepts and Clinical Practice [M]. Beijing: Tsinghua University Publishing House.

Judith Tintinalli, J Stapczynski, O John Ma, et al. 2016. Tintinalli's Emergency Medicine: A Comprehensive Study Guide [M]. 8th ed. New York: McGraw-Hill Education/Medical.

Kevin Knoop, Lawrence Stack, Alan Storrow, et al. 2016. Atlas of Emergency Medicine [M]. 4th ed. New York: McGraw-Hill Education/Medical.

Schedule Table

Chapter	Contents	Hours	Chapter	Contents	Hours
1	Emergency Medical Services	2	9	Infectious Disease	2
2	Disaster Management	2	10	Emergency Neurology	2
3	Resuscitation and Resuscitative Procedures	2	11	Toxicology	4
4	Trauma and Wound Management	2	12	Environment Injuries	2
5	Emergency Cardiovascular Disease	2	13	Endocrine Disorders	2
6	Emergency Pulmonary Disorders	2	14	Hematologic and Oncologic Disorders	2
7	Emergency Gastrointestinal Disorders	2	15	Psychiatric emergencies	2
8	Emergency Renal and Genitourinary Disorders	2		Total	32

Course Contents

THEORY

Chapter 1 Emergency Medical Services

Emergency Medical Services (EMS) is the extension of emergency medical care into the prehospital setting. This section provides insight into the current structure of EMS systems and the challenges they face. After taking this course, students must be able to:

1. Demonstrate knowledge of the fifteen key elements of Emergency Medical Services (EMS) System.

2. Answer the four basic questions regarding the efficacy of EMS systems:

(1) Does it do the job?

(2) Is it safe?

(3) Can it be applied to the field environment?

(4) Can it be used effectively by prehospital personnel?

Chapter 2 Disaster Management

Emergency physicians frequently have extensive responsibilities for community and hospital-level disaster preparedness and response. This section discusses the definition of a disaster, disaster preparedness and planning, the hospital emergency operations plan, field disaster response, emergency health disaster response and the mental health management after disaster.

Students will be able to:

1. Identify the types of disasters.

2. Plan for different types of disaster and list the common elements.

Chapter 3 Resuscitation and Resuscitative Procedures

This section, which is the core of the emergency medicine course, focuses on the epidemiology and pathophysiology of sudden cardiac death and strategies for prevention and treatment. It also reviews the basic and advanced cardiopulmonary resuscitation (CPR) for adults and children, including the approach to an unresponsive patient; the physiology and mechanics of closed chest compression techniques; and basic airway opening procedures, including initial management of an obstructed airway.

Students must be able to:

1. Demonstrate the ability to perform CPR correctly and effectively.

Chapter 4 Trauma and Wound Management

This section introduces principles of trauma assessment, including primary and secondary assessment of a trauma patient with multiple injuries from the aspects of mechanism of injury (blunt vs penetrating trauma) and site of injury (head, eye, chest, spinal cord and bony spine, abdomen, extremity, urogenital system). It also reviews the treatment, disposition and follow-up in various populations (such as adults, elderly, head trauma, spine trauma, etc.).

In wound management section, the course includes wound evaluation, preparation, and closure. It also introduces the treatments for face and scalp lacerations, arm and hand lacerations, puncture wounds, etc.

Students must be able to:

1. Perform the initial assessment, stabilization, and triaging of trauma victims [e.g., multiple trauma, conscious and unconscious victim, abdominal trauma (blunt/penetrating), thoracic trauma (blunt/penetrating), burn victims], laboratory and radiographic evaluations, recommend treatment options, and consult specialists when appropriate under the supervision of teachers.

2. Describe the indications, contraindications, risks and benefits of wound repair and management.

3. Demonstrate the ability to perform control hemorrhaging, properly assess and stabilize an injured spine, manage fractures and other musculoskeletal injuries, etc.

Chapter 5 Emergency Cardiovascular Disease

This section introduces the pathophysiology, clinical features, diagnosis, general treatment of various cardiovascular diseases, including acute heart failure, acute coronary syndromes, cardiogenic shock, cardiomyopathies and pericardial disease, etc.

Students must be able to understand the management of the following critical care situations:

1. Arrhythmias: ventricular tachycardia, ventricular fibrillation, bradycardia, supraventricular tachycardia.

2. Cardiac arrest.

3. Ischemic heart disease: acute MI (thrombolysis), unstable angina, and cardiogenic shock.

4. Cardiovascular pharmacology.

5. Other cardiovascular crises: heart failure, aneurysms of thoracic or abdominal aorta, traumatic diaphragmatic hernia.

Chapter 6 Emergency Pulmonary Disorders

This section introduces the pathophysiology, clinical features, diagnosis and general approach to various respiratory diseases, including acute asthma, chronic obstructive pulmonary disease (COPD), pneumonia, etc.

Students must be able to:

1. Diagnose the typical pulmonary disease (COPD, asthma, pneumonia, pneumothorax, etc.).

2. Understand the general therapeutic principles that are used for pulmonary disease.

Chapter 7 Emergency Gastrointestinal Disorders

This section introduces the pathophysiology, clinical features, diagnosis and general approach to various gastrointestinal (GI) diseases, including upper and lower GI bleeding, esophageal emergencies, pancreatities and cholecystitis, peptic ulcer disease, etc.

Students must be able to:

1. Diagnose the following problems:

(1) GI bleeding.

(2) Other GI pathology (pancreatitis, cholecystitis, liver disease, gastroenteritis, appendicitis.

2. Understand the general therapeutic principles of GI diseases.

Chapter 8 Emergency Renal and Genitourinary Disorders

This section introduces the pathophysiology, clinical features, diagnosis and general approach to various renal and genitourinary (GU) diseases, including acute kidney injury, rhabdomyolysis, urinary tract infections, male genital problems, etc.

Students should be able to:

1. Diagnose the following problems:

(1) Nephrolithiasis.

(2) Acute renal failure.

(3) GU infections, male (prostatitis, urethritis, epididymitis).

2. Understand the general therapeutic principles of renal and GU diseases.

Chapter 9 Infectious Disease

This section introduces the review of the clinical features and diagnosis of various critical infectious diseases which are caused by infectious agents, including viruses, viroids, bacteria, nematodes, arthropods, fungi. Specific medications used to treat infections include antibiotics, antivirals, antifungals, antiprotozoals, and antihelminthics..

Students must be able to:

1. Understand the diagnosis and treatment methods of critical infectious disease emergencies (sepsis, meningitis, toxic shock).

Chapter 10 Emergency Neurology

This section introduces the pathophysiology, clinical features, diagnosis and general approach to various neurologic diseases, including acute and chronic neurologic disorders, seizures, altered mental status and coma. This section also reviews the basic and advanced neurologic evaluation examination.

Students must be able to:

1. Understand the assessment and management methods of neurologic emergency situations: the comatose patient, status epilepticus, spinal cord compression.

2. Master of the neurologic evaluation skills.

Chapter 11 Toxicology

This section reviews the pathophysiology, clinical features, risk assessment, diagnosis and general approach to various toxins, such as pesticides, metals, alcohols, and opioids. The common antidotes used in resuscitation of the acutely poisoned patient are also introduced in this section.

Students must be able to:

1. Diagnose accurately the typical problem of noxious/toxic substance exposure (such as toxic fume, organophosphates, and opioids).

2. Understand the therapeutic principles of toxicologic emergencies, including:

(1) General clinical treatment principles of poisoned patient.

(2) Access to poison control data bases.

(3) Basic decontamination procedures.

(4) Consultation/definitive management.

Chapter 12 Environment Injuries

This section introduces the various causes of environment injuries, including extreme temperature, animal bites and stings, poisonous plants, etc. It also reviews the pathophysiology, clinical features, risk assessment, diagnosis and general approach to these environment injuries.

Students will be able to:

1. Understand environmental exposures, including:

(1) Bites and stings.

(2) Poisonous plants.

(3) Inhalations.

(4) Hypersensitivity/anaphylaxis.

Chapter 13 Endocrine Disorders

This section introduces the pathophysiology, clinical features, diagnosis, special considerations and general approach to various endocrine diseases.

Students must be able to:

1. Recognize the various endocrine diseases (differentiate type I and II diabetes mellitus).

2. Differential diagnosis of the diabetic crises (hypoglycemic coma, diabetic ketoacidosi, hyperosmolar coma) accurately.

Chapter 14 Hematologic and Oncologic Disorders

This section introduces the pathophysiology, clinical features, diagnostic testing, and treatment for hematologic illnesses such as anemia, leukemia, thrombocytopenia, von Willebrand's disease, and hemophilia (often resulting in spontaneous bleeding), etc. It also discusses the emergency complications of malignancy which are broadly categorized as: (1) those due to local physical effects, (2) those secondary to biochemical derangement, (3) those that are the result of hematologic derangement, and (4) those related to therapy.

Students should be able to:

1. Recognize the clinical symptoms of various hematologic diseases (anemia, hemophilia, etc).

2. Identify the different emergency complications of malignancy.

Chapter 15 Psychiatric emergencies

This chapter presents an overview of the care of adult patients with mental health disorders from ED entry to departure—triage, patient and staff safety, medical and psychiatric evaluation, admission and disposition decisions, and the care of patients with prolonged ED stays. Diagnostic criteria of the psychiatric disorders are summarized.

Students should be able to:

1. Recognize the typical mental health disorder patients.

2. Understand ED evaluation and disposition principles of mental health disorder patients.

PRACTICAL

1. The common used monitoring techniques and procedures of Emergency Medicine.

2. Procedures of cardiopulmonary resuscitation (CPR) and defibrillation.

3. General decontamination procedures of poisoned patients, such as gastric lavage.

4. Case analysis of coma patients and the regular assessment and examination methods.

5. Emergency trauma management: the evaluation and treatment techniques of trauma patients.

6. Case analysis of sepsis and septic shock.

7. Management of electrolyte disturbance.

8. The interpretation of EKG and acute MI protocol.

PREVENTIVE MEDICINE

预 防 医 学

Chief Editors（主编）
Ni Chunhui（倪春辉） Nanjing Medical University（南京医科大学）
Zhao Jinshun（赵进顺） Ningbo University（宁波大学）

Deputy Chief Editor（副主编）
Feng Qing（冯晴） Nanjing Medical University（南京医科大学）

Editors（编者）（按姓氏拼音排序）
Feng Qing（冯晴） Nanjing Medical University（南京医科大学）
Ni Chunhui（倪春辉） Nanjing Medical University（南京医科大学）
Wang Hui（王辉） Nanjing Medical University（南京医科大学）
Wu Dongmei（吴冬梅） Nanjing Medical University（南京医科大学）
Zhao Jinshun（赵进顺） Ningbo University（宁波大学）

Course Description

Preventive Medicine introduces the knowledge and skills in which it relates to clinical medicine. It tries to set up the principles of "prevention first" for all diseases in clinical students. It will embroider the main tread of relation between environment and health and focus on protecting human health.

The course comprises introduction to preventive medicine, environment and health which covers air, water, geol ogical and occupational environment, nutrition and food hygiene. The introduction will cover the research subjects, tasks of preventive medicine and preventive principals, and also will involve the history of preventive medicine. In the section of environment and health, the main keys comprise of why and how the different environmental factors affect peoples'health, and what kinds of measures shall be taken to control the environmental hazards. In nutrition part, nutrients needed for good health will be identified along with good sources of these nutrients. Nutritional needs are considered for all stages of the lifespan. Food pyramid and food plate will be introduced to manage balanced-diet and maintain healthy life style. Food Hygiene part will provide the foundation of how to prevent foodborne illness. It will focus on microbe-triggered food poisoning and how to prevent it. Principles of Food safety control such as HACCP will also be introduced. It will help clinical students to use preventive idea in solving clinical issues in the future.

Objectives

KNOWLEDGE

At the end of the course, the student shall be able to:

1. State the determinants of human health and describe how these determinants influence it.

2. State the types, sources and fate of environmental hazards.

3. State the composition, structure and physical properties of the atmosphere.

4. Describe the types and sources of outdoor and indoor air pollution.

5. Describe the adverse effects caused by air pollution and principles of its control.

6. State the types of fresh water and its hygienic features.

7. List the four general parts of water quality standards.

8. Explain the hygienic significance of drinking water quality standard.

9. Describe the sources of water pollution and some typical disease related to water pollutants.

10. Master the epidemiological characteristics of water-borne infectious diseases.

11. Familiarize with how to treat raw water to drinking water.

12. Master the disinfection methods for drinking water.

13. State the relationship between geological environment and health.

14. List some typical biogeochemical disease.

15. Explain the essential conditions of biogeochemical disease.

16. Describe the clinical manifestations and how to diagnose iodine deficiency disorders and endemic fluorosis.

17. Master the prevention methods of iodine deficiency disorders and endemic fluorosis.

18. Explain these terms: noise, A-weighting, temporary hearing loss, permanent hearing loss.

19. Describe the types of noise and the examples for each type.

20. Describe the main sources of noise and the examples of each source.

21. Explain noise health effects: auditory effects and non-auditory effects.

22. Explain how to control the noise in city.

23. Define those terms: occupational health, occupational hazards, and occupational diseases.

24. Describe three types of interaction in a working environment.

25. Explain types of occupational hazards, exposure ways and health effects.

26. Describe the occupational diseases due to physical, chemical and biological agents.

27. Describe the properties of lead and benzene and identified their occupational and non-occupational sources.

28. Explain clinical picture and the diagnosis of lead and benzene poisoning.

29. Describe the preventive measures of lead poisoning and benzene poisoning.

30. Define these terms: dust, pneumoconiosis, silicosis and coal miners'pneumoconiosis.

31. Describe the factors which influence the hazardous effects of dust on lung.

32. Explain the causes, pathologic types, mechanisms and control of silicosis.

33. Identify the classification of nutrients and their functions. Understand the food sources of the nutrients.

34. Explain the relationship among AI (adequate intake), DRIs (Dietary reference intake) and UI (Tolerable Upper Intake level).

35. Use Food Pyramid or Food Plate to describe the healthy life style.

36. Lean how nutritional needs change during lifespan.

37. Define food contamination and foodborn illness.

38. Describe the sources, main symptoms and prevention of food poisonings, especially bacteria caused poisoning.

39. Describe the food safety control strategies.

SKILL

At the end of the course, the student shall be able to analyze the sources of environmental hazards and its adverse effects, the causes of main environmental problems in the world and the possible courses of water-borne infectious diseases, identify types and sources of indoor and outdoor air pollution, water pollution and soil pollution, know the severity of water chemical pollutants and human health, iodine and fluoride with the endemic diseases, harmful effects caused by noise and control measures, identify the occupational hazards and possible health effects in leather shoe factories, battery plants and coal mines and know the control principals, calculate BMI and the energy of each classification of food, personalize every day's meal according to food exchange method, and know the key problems of food safety and nutrition, the properties and prevention of common food poisoning.

Teaching and Learning Methods

Theory: Teacher gives most lectures and the discussion class will be arranged for case studies (pollution events, noise induced hearing loss, acute occupational poisoning, food poisoning, and so on).

Practical: Practical training asks students to know the basic principles, methods and techniques, strategies, and skills for measuring fluoride in water and tea, detecting noise, and making a healthy dietary plan during the class and after the class. In addition, students need to collect data to show the problems in the environmental pollution, nutrition and food safety in their spare time.

Recommended Reference books

Changhao Sun, Wenhua Lin. 2012. Nutrition and Food Hygiene [M]. 7th ed. Beijing: People's Medical Publishing House.

Mary-Jane Schneider. 2014. Introduction to Public Health [M]. 3rd ed. Sudbury: Jones & Bartlett Publishers.

Zao Jinshun, Ni Chunhui. 2013. Preventive Medicine, Epidemiology and Medical Statistics [M]. Hangzhou: Zhejiang University Publishing House.

Schedule Table

Chapter	Contents	Hours	Chapter	Contents	Hours
1	Introduction of Preventive Medicine	4	12	Pneumoconiosis	3
2	Environment and Health	4	13	Nutrition and Nutrients	3
3	Air and Health	3	14	Food, nutrients and health	3
4	Water Environment and Health	4	15	Nutritional needs changes during lifespan	3
5	Geological Environment and Health	4	16	Foodborne illness	3
6	Analyses of water fluoride	4	17	Food safety	3
7	Noise	3	18	Food exchange method	1
8	Noise monitoring	4	19	Design a good diet	3
9	Occupational health	4	20	Presentation and discussion	4
10	Lead poisoning	2		Total	64
11	Benzene poisoning	2			

Course Contents

Chapter 1 Human and Environment

1. Determinants of human health.
2. Types and sources of environmental hazards.
3. Movement, distribution and fate of chemicals in the environment.
4. World status of environmental problems.
5. Principles of environmental pollution control.

Chapter 2 Atmospheric Environment and Health

1. Composition and structure of the atmosphere.
2. Physical properties of the atmosphere.
3. Types and sources of air pollution.

4. Types and sources of indoor air pollutants.
5. Adverse effects of air pollution.
6. Air pollution control.

Chapter 3 Water Environment and Health

1. Types of fresh water and its hygienic features: precipitation, surface water, ground water.
2. Water quality-criteria and standards.
3. Source of water pollution.
4. Harmful health effects of water pollution.
5. Hygienic significance of drinking water and its quality standard.
6. Selection and protection of water sources.
7. Water treatment: purification, disinfection and special treatment.

Chapter 4 Geological Environment and Health

1. Essential trace elements in the geological environment.
2. Definition and characteristics of biogeochemical diseases.
3. Iodine deficiency disorders: iodine ecology, iodine and health, epidemiology.
4. Goiter and cretinism: clinical manifestations, diagnose, prevention.
5. Endemic fluorosis: fluorine and health, prevalence and endemic area type, clinical manifestations, recommendations of water fluoride, prevention.

Chapter 5 Noise

1. Physical properties of noise.
2. Types of noise.
3. The sources of noise.
4. Effects of exposure to noise.
5. Control of noise.
6. Case of noise induced hearing loss.

Chapter 6 Introduction to occupational health

1. Introduction to occupational health.
(1) The definition of occupational health and occupational environment.
(2) Three types of interaction in a working environment.
(3) Five types of occupational hazards.
(4) Occupational diseases.
(5) Case of acute occupational disease.
2. Lead poisoning and benzene poisoning.
(1) The physical and chemical properties of lead and benzene.
(2) Occupational and non-occupational sources of lead and benzene.
(3) Clinical picture of lead poisoning and benzene poisoning.
(4) Diagnosis of lead poisoning and benzene.
(5) Preventive measures of lead poisoning and benzene.
3. Pneumoconiosis.
(1) Definition of dust and pneumoconiosis.

(2) The five factors which influence hazardous effects of dust on lung.

(3) Definition of silicosis, pathologic types of silicosis and mechanisms of silicosis.

(4) Causes and pathologic characteristics of coal miners'pneumoconiosis, asbestosis and farmer's lung.

(5) Preventive measures of pneumoconiosis.

Chapter 7 Nutrition and Health

1. Nutrition and nutrients.

(1) Six classes of nutrients and potential the 7th nutrient (phytochemicals).

(2) Nutrients and energy.

(3) Functions and food sources of carbohydrates, proteins, fats, vitamins and minerals.

(4) Definition of AI, DRIs and UI.

2. Food, nutrients and health.

(1) Food guide pyramid and my food plate.

(2) Management of balanced diet and healthy life style.

(3) Unbalanced diet and chronic diseases.

3. Nutritional needs changes during lifespan.

(1) Nutritional needs during pregnancy and infant.

(2) Importance of breast feeding.

(3) Nutritional needs during stages of toddler, adolescent and elder.

Chapter 8 Food and Health

1. Foodborne illness.

(1) Causes of foodborne illness.

(2) Bacteria food poisoning: Samonella, Camplylo-bacteria, E. coli, Listeria, Staphylococcus infection, Clostridium botulinum.

(3) Fungi contamination: aflatoxin.

(4) Prevention principles of microbe-caused food poisoning.

(5) Chemical contamination: pesticides, mercury.

(6) Toxins from food processing.

(7) Mushroom poisoning and ciguatera poisoning.

2. Food safety.

(1) Food safety program.

(2) HACCP (hazard analysis critical control point).

PRACTICAL

1. Determination of fluoride concentration in drinking water and tea.

2. Noise monitoring in public place.

3. Food exchange method and design a good diet for university student.

4. Presentation and discussion on twelve hot topics of environmental pollution (group work).

BASIC NUTRITION AND DIET THERAPY

基础营养与膳食治疗

Chief Editors（主编）

Huang Guowei（黄国伟） Tianjin Medical University（天津医科大学）
Sun Changhao（孙长颢） Harbin Medical University（哈尔滨医科大学）

Deputy Chief Editors（副主编）

Wang Xuan（王璇） Tianjin Medical University（天津医科大学）
Xiao Rong（肖荣） Capital Medical University（首都医科大学）
Liu Liegang（刘烈刚） Huazhong University of Science and Technology（华中科技大学）

Editors（编委）（按姓氏拼音排序）

Huang Guowei（黄国伟） Tianjin Medical University（天津医科大学）
Liu Liegang（刘烈刚） Huazhong University of Science and Technology（华中科技大学）
Li Wen（李文） Tianjin Medical University（天津医科大学）
Na Lixin（那立欣） Harbin Medical University（哈尔滨医科大学）
Sun Changhao（孙长颢） Harbin Medical University（哈尔滨医科大学）
Sai Na（赛娜） Tianjin Medical University（天津医科大学）
Tan Long（谭龙） Tianjin Medical University（天津医科大学）
Wang Xuan（王璇） Tianjin Medical University（天津医科大学）
Xiao Rong（肖荣） Capital Medical University（首都医科大学）
Yuan Linhong（苑林宏） Capital Medical University（首都医科大学）
Zhang Meilin（张美琳） Tianjin Medical University（天津医科大学）

Course Description

This syllabus is primarily designed for four-or five-year undergraduate students. It is also appropriate for programs in various professions related to health care. The general purpose of this course is to introduce the basic scientific principles of nutrition and their applications in person-centered care. Basic concepts are carefully explained when introduced.

The field of nutrition is a dynamic human endeavor that is continuously expanding and evolving. Three main factors continue to change the modern face of nutrition.

First, the science of nutrition continues to grow rapidly with exciting research. New knowledge in any science challenges some traditional ideas and lends to the development of new ones. Instead of primarily focusing on nutrition in the treatment of disease, we are expanding the search for disease prevention and general enhancement of life through nutrition and healthy lifestyles. Thus was the spirit during the establishment of the current Dietary Reference Intakes.

Second, the rapidly increasing multiethnic diversity of the population enriches our food patterns and presents a variety of health care opportunities and needs.

Third, the public is more aware and concerned about health promotion and the role of nutrition, largely because of the media's increasing attention. Clients and patients seek more self-directed involvement in their health care, and an integral part of that care is nutrition.

Objectives

At the end of the course, the student shall be able to:

1. State some basic knowledge of nutrition and master the classifications, functions, food sources and dietary reference intakes (DRIs) of five nutrients.

2. List some nutrition deficiency disorder and describe these diseases caused by the lack of which kind of nutrients (e. g. scurvy caused by the lack of vitamin C).

3. State the physiological characteristics and nutritional requirements of different populations, including pregnants, lactating women, infants, children, adolescents and old people.

4. Describe the optimal nutrition for pregnant, infant and child.

5. Acquire knowledge on the concept and content of community nutrition and apply the recommendation of balanced diet and physical activity to guide health care according to food habits of different population.

6. Grasp the nutritional care process and apply specific methods to collect and analyze nutrition information and to plan and carry out nutritional care.

7. Describe the common methods of clinical nutrition.

8. Apply methods of nutritional principles to treat and prevent some diseases, such as obesity, coronary heart disease, hypertension, diabetes mellitus, and some cancer.

Teaching and Learning Methods

Some basic knowledge will be introduced in Part Ⅰ. The important content which need student master or comprehend will be taught by the teacher in the class. Some pictures will be used to illustrate the function of nutrients or mechanism problem and cases analysis will be applied to explain some nutrition disorders (especially vitamin and mineral deficiency

disease). It will help the students to remember the important knowledge by applying these methods. In addition, some chapters need the students study by themselves. The teachers will tell them some key points which can help them to understand.

Nutritional demands and recommendations for different populations will be introduced in Part Ⅱ. Teaching courses to undergraduate medical student is provided with the help of lectures and tutorials that deal with the nutritional needs, food patterns and food guidelines of each age group and briefly discusses some of the more common health problems that have nutrition implications throughout the life cycle before and during pregnancy, during lactation and infancy, during childhood and adolescence. Courses on nutrition for adults in the early, middle, and later years are learnt by undergraduate medical student themselves.

The common problems of health promotion in community nutrition will be introduced in Part Ⅲ. Teaching courses to undergraduate medical student is provided with the help of lectures and tutorials that deal with the problem of weight management and seeks a more positive and realistic health model that recognizes personal needs and sound weight goals; balanced nutrition and physical fitness are essential interrelated parts of an overall healthy lifestyle. Courses on community food supply and health are learnt by undergraduate medical student themselves to deal with the factors that influence the safety of food; potential health problems related to the food supply can arise from several sources, such as the lack of sanitation, food-borne disease, and poverty.

The basic nutritional care process and nutrition support in different diseases will be introduced in Part Ⅳ. Multimedia teaching and interactive discussions will be used to enhance the learning process in the class. The theory teaching will combine with case learning to arouse the initiative of the class.

Recommended Textbooks

Aruna Thaker, Arlene Barton. 2012. Multicultural Handbook of Food, Nutrition and Dietetics [M]. Hoboken, NJ: Wiley-Blackwell.

Benjamin Caballero. 2013. Encyclopedia of Human Nutrition [M]. Philadelphia, PA: Elsevier Ltd.

Staci Nix. 2017. Williams Basic Nutrition and Diet Therapy [M]. 15th ed. St. Louis, MO: Elsevier/Mosby.

Sun Changhao (孙长颢). 2017. Nutrition and Food Hygiene [M]. 8th ed. Beijing: People's Health Publishing House.

Vishwanath Sardesai. 2011. Introduction to Clinical Nutrition [M]. 3rd ed. Boca Raton, FL: CRC Press.

Schedule Table

Part	Content	Chapter	Content	Hours
1	Introduction to Basic Principles of Nutrition Science	1	Food, Nutrition, and Health	2
		2	Carbohydrates	2
		3	Fats	1.5

Continued

Part	Contents	Chapter	Contents	Hours
1	Introduction to Basic Principles of Nutrition Science	4	Proteins	2
		5	Digestion, Absorption, and Metabolism (self-study)	0
		6	Energy Balance	0.5
		7	Vitamins	4
		8	Minerals	3
		9	Water and Electrolyte Balance	1
2	Nutrition Throughout the Life Cycle	10	Nutrition during Pregnancy and Lactation	2
		11	Nutrition during Infancy, Childhood, and Adolescence	2
		12	Nutrition for Adults: the Early, Middle, and Later Years (self-study)	0
3	Community Nutrition and Health Care	13	Community Food Supply and Health (self-study)	0
		14	Food Habits and Cultural Patterns	1
		15	Weight Management	2
		16	Nutrition and Physical Fitness	1
4	Clinical Nutrition	17	Nutrition Care	2
		18	Gastrointestinal and Accessory Organ Problems	2
		19	Coronary Heart Disease and Hypertension	3
		20	Diabetes Mellitus	2
		21	Kidney Disease	1
		22	Surgery and Nutrition Support	1
		23	Nutrition Support in Cancer and HIV	1
	Total			36

Course Contents

Part Ⅰ Introduction to Basic Principles of Nutrition Science

In Part I, some basic principles of nutrition science will be introduced to the students. Chapter 1 focuses on the directions of health care and health promotion, risk reduction for disease prevention, and community health care delivery systems, with emphasis on team care and the active role of clients in self-care. Descriptions and illustrations accompany the new Healthy People 2020 objectives, the 2015–2020 Dietary Guidelines for Americans, and MyPlate guidelines. The DRIs are incorporated

throughout chapter discussions in Part Ⅰ as well as throughout the rest of the text. Chapter 2 to Chapter 9 introduces some basic knowledge related to different nutrients in detail.

Chapter 1 Food, Nutrition, and Health

1. The concept of health promotion.

(1) Definitions of nutrition, nutrition science and dietetics; the differences between nutrition and dietetics; the differences between health and wellness.

(2) The latest health goals (eg, Healthy People 2020); the traditional and preventive approaches to health.

(3) The concept of nutrient; the types of nutrients; the six essential nutrients in human nutrition; signs of good nutrition.

2. Functions of nutrients in food.

3. The concept of optimal nutrition, malnutrition, undernutrition and overnutrition; two statuses of malnutrition; and some nutritional disorders.

4. Nutrient and food guides for health promotion.

(1) The history and definition of DRIs.

The concepts and application of four interconnected categories of nutrient recommendations: recommended dietary allowances (RDA), estimated average requirement (EAR), adequate intake (AI), and tolerable upper intake level (UL).

(2) Food guides and recommendations for different countries especially for Americans (Myplate and dietary guidelines for Americans).

Chapter 2 Carbohydrates

1. The nature of carbohydrates.

(1) Relation to energy.

1) The reasons why carbohydrates are basic fuel source.

The reasons why the human body can rapidly break down plant sources of carbohydrates through digestion and metabolism to yield our major source of energy, glucose.

2) Three things to produce energy from a fuel source that done by energy-production system.

3) The reasons for dietary importance of carbohydrates.

(2) The classes of carbohydrates.

1) The origin of the name "carbohydrate"; the structure and some sugar related knowledge of different kinds of carbohydrate.

2) The classifications of carbohydrate according to different methods.

The concepts of monosaccharides, disaccharides and polysaccharides according to the number of saccharide units.

The concepts of simple carbohydrate (monosaccharides and disaccharides) and complex carbohydrate (polysaccharides) according to whether the structure is simple or not.

3) The structures of monosaccharides, disaccharides and polysaccharides.

4) Three common types of single saccharides; three common types of disaccharides and their compositions (Sucrose = Glucose + Fructose; Lactose = Glucose + Galactose;

Maltose = Glucose + Glucose) and their food sources; three important polysaccharides in human nutrition and their food sources.

5) The definition of whole grain, unrefined grains, enriched grains, and fortified foods.

6) The basic function of glycogen and dietary fiber.

7) The concepts and classifications of insoluble dietary fiber and soluble dietary fiber; the functions and food sources of cellulose, noncellulose, hemicellulose and lignin.

8) Some kinds of sweeteners, including nutritive sweeteners and nonnutritive sweeteners; the type and usage of different sweeteners.

2. The functions of carbohydrates.

(1) The fuel factor of carbohydrate (4kcal/g).

(2) The roles of liver glycogen and muscle glycogen.

(3) Some special tissue functions of carbohydrate for liver, central nervous system and others.

The concepts of protein-sparing action and antiketogenic effect of carbohydrate.

3. The different food sources of carbohydrates (starches and sugars).

4. The digestive process of carbohydrates in the mouth, stomach and small intestine.

(1) The steps to digestion for carbohydrates.

(2) Two types of actions (muscle actions and chemical digestion) accomplished in the digestion of carbohydrate. The place for the digestion of carbohydrate foods to begin. The different places in where the different digestive process of carbohydrate is completed.

(3) The concepts of mastication, salivary amylase (ptyalin) and peristalsis.

(4) The action of hydrochloric acid.

(5) Secretions from pancreas and small intestine. The source and function of pancreatic amylase and three disaccharidases.

(6) The concept, causes and symptoms of lactose intolerance.

5. Recommendations for dietary carbohydrate.

(1) The DRIs for carbohydrate and the recommended fiber sources.

(2) The contents related to carbohydrate in the dietary guidelines for different population, especially for Americans, and in MyPlate.

Chapter 3 Fats

1. The nature of fats.

(1) The reasons for dietary importance of fats; the two forms of fats (either solid fat or liquid oil in food); the character of fat (not soluble in water).

(2) The structure and classes of fats.

1) The derivation of the name lipids.

2) The chemical composition and structure of lipids.

3) The main form of lipids in the food and in the human body (triglyceride); the structure and main functions of triglyceride (fatty acid).

4) The structure characteristics of fatty acids.

(3) The classification of fatty acids according to different methods.

1) Depending on the length of carbochain, fatty acid can be classified by their length

as short-, medium-, or long-chain fatty acids. The definitions of these fatty acids.

2) Depending on their saturation, fatty acid can be classified as saturated fatty acid (SFA) and unsaturated fatty acid (UFA).

The definitions, structures and characters of SFA and UFA. The nomenclature of UFA.

The classification of UFAs according to the location of the first double bond from the omega end (i. e., the methyl group end). The definitions and evolutions of omega-3 and omega-6 fatty acid.

The definitions and food sources of monounsaturated fatty acid (MUFA) and polyunsaturated fatty acid (PUFA).

3) According to its necessity in the diet, fatty acid can be classified as essential and nonessential fatty acid.

The definition, characters, types and functions of essential fatty acids; the synthesis process of essential fatty acids change to other PUFA in the body.

4) The definitions of cis-fatty acid and trans-fatty acids. The process that the cis-fatty acids change to the trans-fatty acids (TFA); the concept of hydrogenation and hydrogenated oil; the food source of hydrogenated oil.

(4) The concepts and types of lipoproteins. The composition and roles of different lipoproteins. The relationship between atherosclerosis and low-density lipoproteins and high-density lipoproteins (See Chapter 19).

(5) The structure and roles of phospholipids. The concepts of lecithin and eicosanoids.

(6) The types of sterols; the concepts of phytosterols and zoosterols.

1) The important roles of sterols.

2) The main food sources and recommendations of cholesterol.

2. The functions of fat in foods and in the body.

(1) The reasons that fat contributes to a feeling of satiety or satisfaction after a meal.

(2) The concept and some examples of fat substitutes.

3. The food sources of fat and different kinds of fatty acids.

(1) The special animal sources and plant sources of fat.

(2) The characteristics of food fat sources; the concepts and food sources of visible fat and invisible fat.

4. The nature and amount of dietary fat and cholesterol contribute to disease risk for some forms of non-communicable diseases.

5. The digestive process of fats in the mouth, stomach and small intestine.

(1) The steps to digestion for fats.

(2) The concept and action of lingual lipase and gastric lipase (tributyrinase).

(3) The mechanical digestive action and chemical digestive action in digestive tract.

(4) The major enzymes necessary for the chemical changes in the small intestine.

(5) Three major sources of some specific digestive agents.

1) The concept and functions of bile from the gallbladder; the concept and two important tasks of emulsification.

2) The types of some specific enzymes from the pancreas; the actions of pancreatic lipase and cholesterol esterase.

3) Specific enzymes from the small intestine; the definition and action of lecithinase.

4) The absorptive process of fats into the gastrointestinal cells and bloodstream.

The process of micelle production in the small intestine. The structure of micelle.

The formation and transportation process (lacteals → the lymphatic circulatory system → the blood stream) of chylomicrons; the structure and composition of chylomicron; the definition of enterohepatic circulation.

(6) Different digestibility of food fats according to the food source and the cooking method.

6. The recommendations for dietary fat.

(1) The relations between dietary fat and health.

1) The association between the amount of fat and the risk factors for health problems.

2) The association between the type of fat and the specific risk factor for atherosclerosis.

3) The effect of TFA on some diseases and the association between essential fatty acid deficiency and some diseases.

(2) The DRIs of fats.

1) The amount of kilocalories from fats and SFA.

2) The amount of linoleic acid and alpha-linolenic acid.

3) Dietary guidelines for different population.

Chapter 4 Protein

1. The nature of protein.

(1) The roles and the dietary importance of the basic building matter of protein, amino acid.

(2) The classes of amino acids.

The concepts and types of indispensable amino acids, dispensable amino acids and conditionally indispensable amino acids.

(3) The definitions and the effects of protein balance and nitrogen balance.

The concepts of positive nitrogen balance and negative nitrogen balance.

2. The functions of protein.

3. The food sources of protein.

(1) The types of food proteins; the definitions of complete protein and incomplete protein.

(2) The definition of complementary protein.

(3) The concepts and common foods of four vegetarian diets; the health benefits and risks of different vegetarian diets.

4. The digestive process of protein in the mouth, stomach and small intestine.

(1) The steps to digestion for protein; the mechanical digestive action and chemical digestive action in digestive tract.

(2) The concepts of zymogens.

(3) The effects of hydrochloric acid, pepsin and rennin.

(4) The effects and activative process of three enzymes (trypsin, enterokinase, chymotrypsin) secreted by pancreas.

(5) The effects and activative process of enzymes (carboxypeptidase, aminopeptidase and dipeptidase) secreted by intestine.

5. The recommendation for dietary protein.

(1) Three influential factors of protein need.

(2) Four methods to determine the quality of dietary protein; the concepts and calculation formula of chemical score, biological value, net protein utilization and protein efficiency ratio.

(3) The concepts and types of protein-energy malnutrition (PEM).

(4) The characteristics of kwashiorkor and marasmus; three problems occurred with diets that are heavily laden with protein.

(5) The DRIs of protein; the dietary guidelines for different population.

Chapter 5 Digestion, Absorption, and Metabolism

1. The process of digestion.

(1) Four foods preparing steps for the body's use; processes of wholeness digestion.

(2) The concepts of mechanical digestion and chemical digestion; the roles of muscles and nerves in mechanical digestion; the roles of hydrochloric acid, some enzymes, mucus, bile, water and electrolytes in chemical digestion.

(3) The processes of mechanical and chemical digestion in the mouth, esophagus, stomach and small intestine.

(4) The concepts and functions of some important digestive enzymes, such as salivary amylase, gastrin, pepsin, pancreatic enzymes and intestinal enzymes.

2. The process of absorption and transport.

(1) The influence factors of nutrient's bioavailability.

(2) The absorption processes in the small intestine.

1) Three important absorbing structure of intestinal; the structures and functions of mucosal folds, villi and microvilli.

2) The concepts of simple diffusion, facilitated diffusion, active transport and pinocytosis.

(3) The absorption processes of water, dietary fiber, macronutrients and micronutrients in the large intestine.

(4) The transportation processes in the vascular system and lymphatic system.

(5) The metabolic process of energy for fuel; the two types of metabolism; the concepts of catabolism and anabolism.

(6) The storing processes of energy; the concepts of glycogenesis, lipogenesis and gluconeogenesis.

3. Errors in digestion and metabolism.

(1) Three examples of genetic defects; the concepts of phenylketonuria, galactosemia, and glycogen storage diseases.

(2) The concepts of lactose intolerance and allergies.

Chapter 6 Energy Balance

1. Human energy system.

(1) Voluntary and involuntary energy needs.

(2) The measurement of energy; the definitions of energy units, such as calorie and joule; the conversion of energy units; the fuel factors of three energy-yielding nutrients and alcohol; the differences of caloric density and nutrient density.

2. Energy balance.

(1) The concepts of external energy cycle and internal energy cycle.

(2) Energy intake from three energy-yielding nutrients in food energy and stored energy.

(3) Energy output.

1) The three demands for energy; the definitions of resting energy expenditure and resting metabolic rate; the measurement and prediction of basal energy expenditure and resting energy expenditure; the influence factors of basal metabolic rate.

2) The concepts of physical activity, levels of physical activity (see Chapter 16).

3) The concepts of thermic effect of food.

4) The energy contributions of resting energy expenditure, physical activity and the thermic effect of food; the basic steps to estimate the energy expenditure.

3. The recommendations for dietary energy intake.

(1) Energy needs of growth periods and adulthood.

(2) The DRIs of energy; the dietary guidelines for different population.

Chapter 7 Vitamins

1. The nature of vitamins.

(1) The discovery and the definition of vitamin.

(2) The functions of vitamins.

(3) The classification of vitamin, and the characteristics of fat-soluble vitamins and water-soluble vitamins.

2. Fat-soluble vitamins.

(1) Vitamin A (retinol).

1) The functions of vitamin A; the effect of retinol on vision; the definition of carotenoids and retinol.

2) The DRIs and the food form of vitamin A; the definition of preformed vitamin A and provitamin A.

3) Some kinds of deficiency disease (xerosis, xerophthalmia) and the symptoms of xerosis and xerophthalmia.

4) The condition created by excessive vitamin A intake; symptoms of toxicity of vitamin A.

5) The different kinds of food sources of vitamin A.

(2) Vitamin D (calciferol).

1) The kinds and the active form of vitamin D; the definition of cholecalciferol, ergocalciferol and calcitriol.

2) The functions of vitamin D; the mechanism of vitamin D in calcium homeostasis.

3) The sources of vitamin D and the DRIs of vitamin D.

4) The disease caused by chronic deficiency of vitamin D (rickets); the definition and symptoms of rickets.

5) The UL of vitamin D and the symptoms of toxicity or hypervitaminosis D.

6) The food sources and stability of vitamin D.

(3) Vitamin E (tocopherol).

1) The definition and the functions of vitamin E; the definition of tocopherol.

2) The DRIs of vitamin E.

3) The symptoms of deficiency of vitamin E (hemolytic anemia, poor nerve conduction).

4) The toxic effect of vitamin E.

5) The food sources and stability of vitamin E.

(4) Vitamin K.

1) The definition of phylloquinone; the functions of vitamin K (blood clotting, bone development).

2) The AIs and the food sources of vitamin K.

3. Water-soluble vitamins.

(1) Vitamin C (ascorbic acid).

1) The definition and the functions of vitamin C; the effect of vitamin C on collagen synthesis.

2) The DRIs of vitamin C.

3) The deficiency disease of vitamin C (scurvy) and the symptoms of scurvy.

4) The food sources and stability of vitamin C.

(2) Thiamin (vitamin B_1).

1) The functions of thiamin (coenzyme factor).

2) The DRIs of thiamin.

3) The disease caused by chronic deficiency of thiamin (beriberi); the definition and symptoms of beriberi.

4) The food sources and stability of thiamin.

(3) Riboflavin (vitamin B_2).

1) The functions of riboflavin (coenzyme factor).

2) The DRIs of riboflavin.

3) The symptoms of riboflavin deficiency.

4) The food sources and stability of riboflavin.

(4) Niacin (vitamin B_3).

1) The functions of niacin (coenzyme).

2) The disease caused by chronic deficiency of niacin (pellagra); the definition and symptoms of pellagra.

3) The symptoms of excessive niacin.

4) The DRIs, food sources and stability of niacin.

(5) Vitamin B_6

1) The related compounds of vitamin B_6; the functions of vitamin B_6.

2) The DRIs of vitamin B_6.

3) The symptoms of vitamin B_6 deficiency, and the toxicity of high vitamin B_6.

4) The food sources and stability of vitamin B_6.

(6) Folate.

1) The functions of folate. The effect of folate on DNA synthesis and homocysteine

metabolism.

2) The definition of dietary folate equivalencies, and the DRIs of folate.

3) The disease of folate deficiency, and the kinds of neural tube defects.

4) The food sources and stability of folate.

(7) The functions, DRIs and food sources of cobalamin (Vitamin B_{12}). The symptoms of vitamin B_{12} deficiency.

(8) The functions, DRIs and food sources of pantothenic acid.

(9) The functions, DRIs and food sources of biotin.

(10) The functions, DRIs and food sources of choline. The symptoms of choline deficiency, and the toxicity of high choline.

Chapter 8 Minerals

1. Nature of minerals in human nutrition.

(1) The classes of minerals, the definition of major minerals and trace minerals. The names of seven major minerals.

(2) The function of minerals (involved in processes of building tissue).

(3) Metabolism characteristic of mineral. The factors influence minerals absorption. Two major ways of minerals transport. The two basic forms of minerals occur in the body.

2. Major minerals.

(1) Calcium.

1) The functions of calcium.

2) The DRIs of calcium.

3) The definition of different calcium deficiency diseases and the symptoms of hypocalcemia, rickets, osteomalacia and osteoporosis.

4) The toxic effect (hypercalcemia) and the symptoms of excessive calcium.

5) The natural food source of calcium and the factors of affect calcium absorption.

(2) Phosphorus.

1) The functions of phosphorus.

2) The symptoms of phosphorus deficiency.

3) The UL of phosphorus and the symptoms of excessive phosphorus.

4) The DRIs and food sources of phosphorus.

(3) Sodium.

1) The functions of sodium.

2) The symptoms of sodium deficiency, and the toxicity of high sodium. The UL of sodium.

3) The food sources and DRIs of sodium.

(4) Potassium.

1) The functions of potassium.

2) The symptoms of potassium deficiency, and the toxicity of high potassium.

3) The food sources and DRIs of potassium.

(5) Chloride.

1) Two significant functions of chloride. The effect of chloride in the process digestion and respiration.

2) The DRIs and food sources of chloride.

(6) Magnesium.

1) The functions of magnesium.

2) The DRIs and food sources of magnesium.

3) The symptoms and the reasons of magnesium deficiency.

(7) The functions of sulfur.

3. Trance minerals.

(1) Iron.

1) The functions of iron (hemoglobin synthesis, general metabolism). The definition of transferrin and ferritin. The effect of iron in hemoglobin synthesis.

2) The DRIs of iron.

3) The symptoms of iron-deficiency anemia and the factors cause iron-deficiency anemia. The characteristic of each stage of iron-deficiency anemia.

4) he symptoms of iron toxicity.

5) The forms of iron in food, and the food sources of iron. The definition of heme iron and nonheme iron. The factors affect iron absorption.

(2) Iodine.

1) The functions of iodine and the effect of iodine in formation of thyroid hormones.

2) The diseases cause by iodine deficiency. The definition and symptoms of goiter.

3) The symptoms of iodine toxicity. The UL of iodine.

4) The DRIs and food sources of iodine.

(3) Zinc.

1) The functions of zinc.

2) The DRIs and food sources of zinc.

3) The symptoms of zinc deficiency.

(4) Selenium.

1) The functions of selenium.

2) The DRIs and food sources of zinc selenium.

3) The symptoms of selenium deficiency and the symptoms of selenium excess.

(5) The functions and food sources of fluoride.

(6) The functions of copper and the disease cause by copper deficiency.

(7) The function of manganese, molybdenum, and chromium.

Chapter 9 Water and Electrolyte Balance

1. Body water function and requirements.

(1) Three basic principles of body water and the definition of homeostasis.

(2) The functions of body water (solvent, transport, thermoregulation, lubricant).

(3) The DRIs for water. The aspects in accordance with body's requirement for water.

(4) The definition of dehydration.

2. Water balance.

(1) Distribution of body water and the definition of extracellular fluid and intracellular fluid.

(2) The mechanisms of keep water balance. The main forms of water intake and water output.

(3) Two main types of particles control water balance (electrolytes, plasma proteins). Types of electrolytes. Other small organic compounds in body water.

(4) Types of membranes separate and contain water throughout the body (capillary membranes, cell membranes).

(5) Forces moving water and solutes across membranes and the definitions of osmosis, diffusion, facilitated diffusion, filtration, active transport and pinocytosis.

(6) The purpose and process of capillary fluid shift mechanism.

(7) Two other major organ systems help to protect the homeostasis of body water.

(8) Two hormonal systems maintain constant body water balance (antidiuretic hormone mechanism, renin-angiotensin-aldosterone system).

3. Acid-base balance.

(1) The mechanism of acid and bases maintain an acceptable pH in body fluids.

(2) The types of buffer systems (chemical buffer system, physiologic buffer systems).

Part Ⅱ Nutrition Throughout The Life Cycle

The tremendous growth of a baby from the moment of conception to the time of birth depends entirely on nourishment from the mother. The complex process of rapid human growth and lactation demands a significant increase in nutrients from the mother's diet. In any culture, food nurtures both the physical and the emotional process of "growing up" for each infant, child, and adolescent. Food and eating during these significant years of childhood do not exist apart from the overall process of psychosocial development and physical growth. The entire process plays a role in creating and shaping the whole person. Food and nutrition continue to provide essential support during the adult aging process. Life expectancy is increasing; thus, health promotion and disease prevention are even more important to ensure quality of life throughout these extended years.

This part explains the nutritional foundations necessary for the growth, development, and normal functioning of individuals in each stage of the life span. From preconception to the final stages of life, this part covers the nutritional needs, food patterns and food guidelines for each part of the life cycle and briefly discusses some of the more common health problems that have nutrition implications throughout the life cycle.

Chapter 10 Nutrition during Pregnancy and Lactation

1. The nutrition needs of pregnancy.

(1) The reasons for increased need of energy and the DRIs of energy for pregnant women.

(2) The reasons for increased need of protein, the DRIs of protein and the food sources of protein for pregnant women.

(3) The reasons for increased the need and the food sources of some key minerals and vitamins for pregnant women, such as calcium, iron, iodine, folate and vitamin D.

(4) The average amount and rate of weight gain during pregnancy.

(5) The general plan and alternative food patterns.

(6) The basic principles of diet and exercise.

(7) The dietary guidelines for pregnant women in China.

2. The nutrition-related risk factors and complications of pregnancy.

3. The physiologic process of lactation.

4. The nutrition demands of lactation.

(1) The diet needs during lactation: energy, nutrients, fluids.

(2) The risks of using breast milk substitutes.

(3) The advantages of breastfeeding.

(4) The dietary guidelines for lactating mothers in China.

Chapter 11 Nutrition during Infancy, Childhood, and Adolescence

1. The growth pattern during life cycle and the physical growth measurement during childhood growth.

2. The nutrition needs and food pattern during infancy.

(1) The nutritional needs of the infant.

(2) The choice of feeding methods according to several different terms depending on their maturity, gestational age, and weight.

(3) The ways of feeding for premature infants, the milk content for premature infants and the methods of milk delivery.

(4) The principles of adding solid foods to the infant.

(5) The dietary guidelines for infant in China.

3. Nutrition requirements during childhood.

(1) The nutrition requirements for toddlers (1 to 3 years old).

(2) The nutrition requirements for school-aged children (3 to 5 years old).

(3) The nutrition requirements for school-aged children (5 to 12 years old).

(4) The nutrition problems during childhood.

4. Nutrition requirements during adolescence (12 to 18 years old).

(1) Nutrition requirements for the changes of body composition and bone mineral density.

(2) The influenced factors of teenagers'eating habits and eating disorder.

Chapter 12 Nutrition for Adults: the Early, Middle, and Later Years

1. The population and age distribution, life expectancy and quality of life and impact on health care.

2. The influences on adult and adult growth: physical growth; psychosocial development; socioeconomic status; nutrition needs.

3. The aging process and nutrition needs.

(1) The general physiologic changes of aging process: metabolism and hormones.

(2) The effect of aging process on food patterns.

(3) Nutrition needs for adults.

4. The dietary guidelines for the elderly in China.

5. The clinical needs for the elderly.

(1) Health promotion and disease prevention for the elderly.

(2) Diet modifications and medications for the elderly.

6. Community resources for the elderly.

7. Alternative living arrangements for the elderly.

Part Ⅲ Community Nutrition and Health Care

The health of a community largely depends on the safety of its available food and water supply. Food is necessary to sustain life and health, but people eat certain foods for many reasons other than good health and nutrition, although these are important factors. A variety of connotations are attached to food. All food habits are intimately related to people's way of life: their values, beliefs, and situations. However, sometimes these food patterns change over time with more exposure to other cultural patterns. The broader food environment from which we have to choose is often influenced by factors such as politics and poverty, which limit personal control and choice. Currently, the obesity epidemic results in large part from poor diet, physical inactivity, and genetics. Weight-loss diets are abundant and do not lack in variety with regard to the philosophy of the methods used to shed unwanted pounds. This variety also leads to greater confusion about weight-loss methods and expectations.

This part explores the factors that influence the safety of food, the problem of weight management and seeks a more positive and realistic health model that recognizes personal needs and sound weight goals. This part also demonstrates that balanced nutrition and physical fitness are essential interrelated parts of an overall healthy lifestyle. Both reduce risks associated with chronic diseases, and both are important therapies for the treatment of chronic conditions. Health care workers should provide their patients with sound guidelines for nutrition and physical fitness while setting good examples.

Chapter 13 Community Food Supply and Health

1. The early development of food label regulations: food standards; nutrition information.

2. The background of present U. S. Food and Drug Administration label regulations.

3. The current food label format: nutrition facts label; front-of-package labeling; health claims.

4. The reasons for using agriculture pesticides.

5. The problems for using agriculture pesticides.

6. Alternative agriculture methods: organic farming, biotechnology, irradiation.

7. The examples of food additives and the purpose of using food additives.

8. Food additive laws in China.

9. The prevalence and concept of food-borne illness.

10. The control measures of the food-borne illness.

11. The etiological factors of food-borne illness.

12. The specific pathogenic bacterium of bacterial food infections (eg. salmonellosis, shigellosis, listeriosis, escherichia coli, vibrio), the clinical symptoms and common infection food.

13. Two types of bacterial food poisoning: staphylococcal food poisoning and

clostridial food poisoning.

14. The viral forms of food-borne illness: hepatitis A and rotavirus.

15. The most common form of parasitic food-borne illness: giardiasis.

16. Two types of parasitic worms in relation to food.

17. The environmental food contaminants: lead and natural toxins.

Chapter 14 Food Habits and Cultural Patterns

1. Social impact and factors that influence personal food choices.

2. Cultural development of food habits.

(1) The influences of the Spanish and Native American: Mexican, Puerto Rican, Native American.

(2) The influences of the Southern United States: Black or African American, French American.

(3) The influences of Asian food patterns: Chinese, Japanese, Southeast Asian.

(4) The influences of Mediterranean: Italian, Greek.

3. The guidelines for the general population in China.

4. Food guide pagoda and plate in China.

Chapter 15 Weight Management

1. The concept of body composition, body mass index, overweight and obesity.

2. The methods of measuring body composition.

3. The measurements of weight-maintenance goals.

(1) The standard height/weight tables.

(2) The healthy weight range: body frame, individual variation, necessity of body fat.

4. The association of obesity and health.

5. The causes of obesity.

6. Individual differences and extreme practices.

(1) Factors influence the individual energy balance levels.

(2) The extreme practices to lose weight: fad diets, fasting, specific macronutrient restrictions, clothing and body wraps, weight-loss drugs, surgery.

7. The essential characteristics of a sound weight-management program.

(1) The basic principles of weight-management and basic strategies and actions of behavior modification in a sound weight-management program.

(2) The basic principles of the dietary modification in a sound weight-management program.

8. Four types of claims: food cures, harmful foods, food combinations, natural foods.

9. The adverse effects of erroneous claims: health risk cost, lack of sound knowledge, distrust of the food market.

10. Helpful instruction of food fads, misinformation, or even outright deception.

11. The concept of underweight, the causes of underweight and the dietary treatment of underweight.

12. The concept of normal eating and disordered eating, the concept of three most common eating disorders, and the treatment of disordered eating.

Chapter 16 Nutrition and Physical Fitness

1. The guidelines and recommendations for physical activity.

2. The health benefits for physical activity.

3. The functions, forms and typical activities of the four types of physical activity (eg. resistance training, aerobic exercise, weight-bearing exercise, activities of daily living).

4. The principles of planning a personal exercise program.

5. Dietary needs and the dietary recommendations of macronutrient and micronutrient during exercise.

6. The general training diet of athletic performance.

7. The concept of the carbohydrate loading and examples of a precompetition program for carbohydrate loading.

8. The concept of the pregame meal for athletes.

9. The hydration before, during, and after exercise for athletes.

Part Ⅳ Clinical Nutriotion

In the past decades, marked advances in enteral feeding techniques, venous access, and enteral and parenteral nutrient formulations have made it possible to provide nutrition support to almost all patients. Information regarding the use of nutrition support has increased dramatically. At the beginning of development of clinical nutrition, there has been a 10-fold increase in the annual rate of enteral and parenteral nutrition-related publications, from 50 per year in the early 1970s to 525 per year in the early 1990s. The sophistication of nutrition technology has made clinical nutrition a growing medical subspecialty with its own societies and journals. Despite the abundant medical literature and widespread use of nutritional therapy, many areas of nutrition support remain controversial.

Clinicians in hospital have become increasingly aware that protein-calorie malnutrition may be a considerable problem during the management of patients with both medical and surgical disorders, and both enteral and parenteral nutrition are now widely used. Increasingly data showed that nutrition support is necessary and effective during the clinical treatment. However, few data have been available on the practice of these techniques. In this chapter, we will give a introduction on the basal concepts of clinical nutrition, and introduce the principles and methods of nutrition support to some diseases, including diabetes, hypertension, renal diseases and cancer. Some basic physiological and pathological knowledge are also required in order to master the theory of clinical nutrition. Reasonable application of the clinical nutrition can cooperate and promote the effects of medical therapy significantly. It is also can alleviate the pain and discomfort during the therapeutic process, and lighten patients' financial burden. So, nutrition support is not only a simple application of nutrition, but also can generate remarkable social and economic benefit.

Chapter 17 Nutrition care

1. The nutrition care process model. The formation of a health care team and the roles of the team members, especially the roles of nurse and clinical dietitian.

2. The four phases of the care process.

(1) The process of nutrition assessment.

1) The types, contents and methods of history information needed to collect, especially the methods of nutrition survey and their advantages and disadvantages.

2) The methods of the anthropometric measurements, such as height, weight, body mass index, body composition and waist circumference.

3) The significance of the main biochemical index, medical tests, and the procedures.

(2) The process of nutrition diagnosis from identifying the causes, signs and symptoms of nutrition problems.

(3) The process of nutrition intervention focused on personal adaptation and the mode of feeding. The concepts of enteral feeding and parenteral nutrition.

(4) The three components of nutrition monitoring and evaluation process: monitoring progress, measuring outcomes and evaluating outcomes.

3. The basic three types of drug interactions: drug-food interactions, drug-nutrient interactions, and drug-herb interactions.

Chapter 18 Gastrointestinal and Accessory Organ Problems

1. The main problems existed in upper gastrointestinal tract. Especially the causes, clinical symptoms, treatment and dietary management of peptic ulcer disease.

2. The main problems existed in lower gastrointestinal tract.

(1) The main functions and the metabolic characteristics of small intestine. The concepts of three specific malabsorption conditions, including cystic fibrosis, inflammatory bowel disease (Crohn's disease and ulcerative colitis), and diarrhea. The pathologic characters, metabolic process and the principles of nutrition therapy for the above three malabsorption conditions.

(2) The concepts of some large intestine diseases, such as diverticular disease, irritable bowel syndrome, and constipation. The principles of nutrition therapy for the above conditions.

3. The difference between food intolerance and food allergies.

(1) The common food allergens and the signs, symptoms, diagnosis and nutrition guide for food allergies.

(2) The disease process and the nutrition management of celiac disease.

4. The main problems existed in gastrointestinal accessory organs.

(1) The concepts of steatohepatitis, hepatitis, cirrhosis, cholecystitis, cholelithiasis and pancreatitis.

(2) The principles of nutrition therapy for these diseases, especially the hepatitis and cirrhosis.

Chapter 19 Coronary heart disease and hypertension

1. Coronary heart disease (CHD).

(1) The concept of coronary heart disease, atherosclerosis (AS), myocardial infarction.

1) The disease process of AS.

2) Three kinds of fat metabolism, including triglycerides, cholesterol and lipoproteins, related to AS.

3) The risk factors of AS and the dietary recommendations for reduced the risk.

(2) The objective and principles of medical nutrition therapy for acute cardiovascular disease.

(3) The basic objective of diet therapy and the principles of medical nutrition therapy for heart failure.

2. Essential hypertension.

(1) The concepts of essential hypertension and secondary hypertension.

(2) The classification of blood pressure for adults.

(3) The principles of medical nutrition therapy.

The concept, methods and application of DASH diet.

3. The practice and application of food guides and the principles of education in hypertension.

Chapter 20 Diabetes mellitus

1. The nature of diabetes: the definition, classification, and symptoms of diabetes.

2. The metabolic pattern of diabetes.

(1) The stages of normal glucose metabolism; the sources and uses of blood glucose; the metabolic actions of insulin.

(2) The abnormal metabolism of glucose, fat and protein in uncontrolled diabetes.

(3) The long-term complications associated with diabetes, such as retinopathy, nephropathy, neuropathy and heart disease.

3. The general management of diabetes, including the guiding principles for the treatment of diabetes and the basic goals of care (including glycemic control and medication, optimal nutrition, physical activity, diabetes self-management education and support, psychosocial assessment and care).

4. The goal of medical nutrition therapy for individuals with prediabetes and diabetes.

(1) The management of normal growth and weight; the maintenance of total energy balance.

(2) The nutrition recommendations for the management of diabetes.

1) The choice of carbohydrate.

2) The concept and application of glycemic index.

(3) Some factors determined the food distribution.

(4) The principle of diet management.

The concept and application of food exchange system.

(5) The content of diabetes education program.

Chapter 21 Kidney disease

1. The anatomy of kidney (especially nephron); the excretory and regulatory functions and endocrine functions of kidney.

2. Disease process and dietary considerations.

(1) General causes and risk factors of kidney disease.

(2) Medical nutrition therapy based on the severity of the disease, such as the length of disease and the degree of impaired kidney function and clinical symptoms, in kidney disease.

3. The disease process, clinical symptoms, and medical nutrition therapy of acute glomerulonephritis and nephritic syndrome.

4. Kidney failure.

(1) The disease process, clinical symptoms, and medical nutrition therapy of acute kidney injury and chronic kidney disease.

(2) End-stage renal disease.

1) Disease process of end-stage renal disease (ESRD).

2) Two forms of dialysis (hemodialysis and peritoneal dialysis) as the chief treatment for ESRD.

3) The medical nutrition therapy for hemodialysis and peritoneal dialysis.

4) Complications of dialysis.

5. Kidney stone disease.

(1) The disease process of kidney stone disease: types of kidney stones; risk factors for the development of kidney stones; the clinical symptoms of kidney stone disease.

(2) General objectives of medical nutrition therapy for kidney stone disease and objectives specific to different types of stone; dietary principles in kidney stone disease.

Chapter 22 Surgery and nutritional support

1. The nutritional needs of general surgery patients before and after surgery.

(1) The nutritional needs under different conditions in preoperative nutrition care (elective surgery, immediate preoperative period, emergency surgery).

(2) The nutrient needs for healing in postoperative nutrition care.

1) The requirement of the patients for protein, energy, vitamin and minerals.

2) The reasons for increased protein demand.

2. Three methods of nutrition support.

(1) The concepts of oral feeding, enteral feeding, and parenteral nutrition. The advantages and disadvantages of the enteral and parenteral nutrition.

(2) Different types of enteral feeding; some common formula used in enteral feeding and some problems presented in tube feedings; the complications of tube feeding.

(3) Two routes available for parenteral nutrition; the concepts of total parenteral nutrition (TPN).

(4) The administration of enteral feeding and TPN.

3. Special nutrition needs after gastrointestinal surgery.

(1) Choice of eating mode after mouth, throat, and neck surgery.

(2) Nutrition problems after gastric surgery; the effect of surgery on the function of GI tract and the basic principles of diet therapy after gastrectomy; the concept of dumping syndrome.

(3) General guideline for dietary advancement after bariatric surgery.

(4) Dietary guideline for gallbladder surgery patients.

(5) Nutrition support for intestinal surgery patients.

(6) Some basic dietary principles after rectal surgery.

4. Special nutritional needs for patients with burns.

(1) The type and extent of burns.

(2) Stages of nutritional care.

1) Principles of nutritional care in different stages of burns.

2) The reasons for increased nutrient and energy demands of patients.

3) Medical nutrition therapeutic principles and processes of burns.

Chapter 23 Nutrition support in cancer and HIV

Section 1 Cancer

1. Process of cancer development.

(1) The occurrence and development of cancer; the difference of metabolism between normal cell and cancer cell; the characteristics of cancer cell.

(2) The causes of cancer; the effects of dietary factors on cancer.

(3) The roles of defensive cells of the immune system; the relation of nutrition to immunity and healing.

2. Complications and nutritional support principles of surgery, radiotherapy and chemotherapy for cancer.

3. Some interactions between drugs and nutrients in cancer treatment.

4. Medical nutrition therapy in the patient with cancer.

(1) Three basic systemic effects caused by cancer and some specific effects related to the type of cancer.

(2) The nutritional care processes design for cancer patients; the basic objectives and principles of the nutrition intervention plan for cancer patients.

(3) The requirement and medical nutrition treatment plan for the patients; some nutrients supplementation benefit for patients; the reasons to ensure adequate fluid intake.

(4) Enteral and parenteral nutrition support in cancer nutrition management.

1) The reasons caused eating problems.

2) The indications for enteral nutrition (tube feeding) and parenteral nutrition support.

5. Some guidelines for cancer prevention.

(1) The lifestyle factors to reduce the risk of cancer.

(2) Nutrients an foods to reduced the risk of cancer.

(3) Dietary factors associated with decreased incidences and mortality rates of various cancers.

Section 2 Acquired immunodeficiency syndrome

1. Process of acquired immunodeficiency syndrome (AIDS) development.

(1) The evolution of human immunodeficiency virus (HIV).

(2) The primary mode of HIV transmission and the CDC classification system to assess HIV stages.

2. Initial evaluation and goals in medical management of the patient with HIV/AIDS; drugs and vaccine development in AIDS treatment.

3. Medical nutrition therapy processes in the patient.

(1) The comprehensive assessment and intervention in nutrition care processes of AIDS.

(2) The wasting effects of HIV infection on nutritional status; the causes of body wasting and lipodystrophy.

(3) Several aspects focused on by nutrition counseling, education, and supportive care; the important counseling principles used in person-centered care.

(4) Community programs and psychosocial support in personal food management skills.

TRADITIONAL CHINESE MEDICINE

中 医 学

Chief Editors（主编）

Li Guoxia（李国霞） Tianjin Medical University（天津医科大学）
Hu Zhen（胡臻） Wenzhou Medical University（温州医科大学）
Su Weilian（苏玮莲） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）

Liu Xinya（刘新亚） Jiangxi University of Traditional Chinese Medicine（江西中医药大学）
Wang Zheng（王铮） Tianjin Medical University（天津医科大学）
Li Chunyu（李春雨） Tianjin Medical University（天津医科大学）

Editors（编者）（按姓氏拼音排序）

Hu Zhen（胡臻） Wenzhou Medical University（温州医科大学）
Li Chunyu（李春雨） Tianjin Medical University（天津医科大学）
Li Guoxia（李国霞） Tianjin Medical University（天津医科大学）
Li Jingxiu（李经秀） Tianjin Medical University（天津医科大学）
Liu Rong（刘蓉） Tianjin Medical University（天津医科大学）
Liu Xinya（刘新亚） Jiangxi University of Traditional Chinese Medicine（江西中医药大学）
Su Weilian（苏玮莲） Tianjin Medical University（天津医科大学）
Wang Xiaohong（王晓红） Tianjin Medical University（天津医科大学）
Wang Zheng（王铮） Tianjin Medical University（天津医科大学）
Xie Yicong（谢肄聪） Tianjin Medical University（天津医科大学）
Yao Kai（姚凯） Tianjin Medical University（天津医科大学）
ZhangYong（张勇） Tianjin Medical University（天津医科大学）

Course Description

Traditional Chinese Medicine was formed and developed thousands of years ago. As a great treasure-house of Chinese culture, it has absorbed the quintessence of Chinese ancient philosophy, culture and science, and summarized the experience of Chinese people in fighting against disease. It includes integrated theory system and rich clinical experience, so TCM is being understood and adopted in more and more countries and regions in the

world. Therefore, it is necessary for international medical students to understand the basic theories and knowledge of TCM. It may also enrich the clinical techniques of diagnosis and treatment, widen visual fields, and establish foundations for the further study of TCM.

TCM is a required course for clinical medical undergraduates. The goal of this subject is to make students master the basic theories and knowledge of TCM, use TCM theory to solve the problems in clinical practice, grasp the treatment methods of TCM, such as acupuncture, massage, moxibustion, some Chinese herbs and prescriptions.

Objectives

KNOWLEDGE

At the end of the course, the MBBS students shall be able to:

1. To understand the development of Traditional Chinese Medicine (TCM) and the academic background of TCM; understand the main contents of TCM and the main features of the theoretical system of TCM.

2. To master the yin-yang and five elements doctrine.

3. To master the concept of viscera, the characteristics, the main functions of the five zang-organs and the six fu-organs and the inter-relationships among them.

4. To master the basic concept, the production and the functions of qi and blood; understand the basic concept, the production, the distribution, the excretion and the functions of body fluids.

5. To understand the pathogenic factors of TCM: external pathogenic factors including six abnormal climatic factors, improper diet, overwork and over-rest, etc., internal pathogenic factors including phlegm, stagnant blood and endogenous five evils.

6. To master the six abnormal climatic factors (wind, cold, summer-heat, dampness, dryness, fire) and the seven emotions (joy, anger, anxiety, thinking, grief, fear and scare).

7. To understand the basic principle of the pathogenesis of TCM.

8. To understand the pathogenesis of TCM including the occurring, development and prognosis of the diseases.

9. To master the basic principles and applications of the diagnostic methods in TCM, the basic contents of the four diagnostic methods in TCM.

10. To master the basic contents of differentiation of syndromes and to know how to use this method on diagnosing diseases.

11. To master the concepts and basic contents of prevention.

12. To master the definition and basic contents of therapeutic principles.

13. To understand the eight therapeutic methods.

14. To understand the basic knowledge of Chinese herbs.

15. To master the characteristics, functions and the clinical applications of Chinese herbs.

16. To understand the application of Chinese herbs according to different

syndromes in the clinical practice.

17. To understand the principles of compatibility medicines and the applications of the common prescriptions.

18. To master the basic knowledge of meridian, acupuncture and moxibustion, and the application of acupuncture and moxibustion in the clinical practice.

19. To understand the formation and development of Chinese massage and its research; master its action principles and assistant massage therapy.

20. To understand the basic theories and skills of Cupping and Scrapping.

At the end of the course, the student shall be able to practice the following contents: the four diagnostic methods, the basic manipulation techniques of acupuncture and moxibustion, the basic manipulation of Chinese massage.

Teaching and Learning Methods

Theory: Teaching TCM to medical students is provided with the help of lectures and tutorials that deal with the basic theories of TCM, diagnostic methods in TCM, treatment principles and methods in TCM.

Practical: Practical training and clinical internship ask students to know the diagnosis principles in TCM, techniques of acupuncture and moxibustion, techniques of Chinese massage.

Recommended Textbooks

Jin Hongzhu. 2002. Chinese Tuina (Massage)[M]. Shanghai: Publishing House of Shanghai University of Traditional Chinese Medicine.

Tang Decai. 2002. Science of Chinese Materia Medica [M]. Shanghai: Publishing House of Shanghai University of Traditional Chinese Medicine.

Wang Xinhua. 2002. Basic Theory of Traditional Chinese Medicine [M]. Shanghai: Publishing House of Shanghai University of Traditional Chinese Medicine.

Yang Zhaomin. 2002. Chinese Acupuncture and Moxibustion [M]. Shanghai: Publishing House of Shanghai University of Traditional Chinese Medicine.

Schedule Table

Chapter	Contents	Hours	Chapter	Contents	Hours
1	Introduction	2	5	Etiology and Pathogenesis	4
2	Theory of Yin-Yang and the Five Elements	4	6	Diagnostic Methods	6
3	The Theory of Viscera	6	7	Differentiation of Syndromes	6
4	Qi, Blood and Body Fluids	2	8	Therapeutic Principles and Methods	2

Continued

Chapter	Contents	Hours	Chapter	Contents	Hours
9	Chinese Herbs	1	12	Chinese Massage	14
10	Chinese Prescriptions	1	13	Other Therapeutic Methods	4
11	Acupuncture and Moxibustion	20		Total	72

Course Contents

THEORY

Chapter 1 Introduction

1. Overview of the main features of the academic contents and theoretical system of TCM, which are the concept of holism and theory of syndrome differentiation and treatment.

2. Cognitive methods of TCM.

3. The development of TCM in the future.

Chapter2 The Doctrine of Yin–Yang and The Five Elements

1. The basic concepts of the theory of Yin-Yang doctrine, the relevance, universality, relativity and divisibility of Yin-Yang doctrine.

2. The basic elements of Yin-Yang doctrine, the relationship between yin and yang, opposition and interdependence, wane and wax, mutual transformation of Yin-Yang doctrine.

3. The applications of Yin-Yang doctrine in TCM.

4. The concepts of five element doctrine as well as the basic contents and applications of the five elements doctrine: inter-promotion, inter-restraint, restraint and transformation.

Chapter 3 The Theory of Viscera

1. The concept and characteristics of viscera.

2. The main functions of viscera, the relationships among viscera, the five sense organs and the tissue of the body surface.

Chapter 4 Qi, Blood and Body Fluids

1. The basic concept, the production and the functions of qi.

2. The basic concept, the production and the functions of blood.

3. The relationship between qi and blood.

4. The basic concept, the production and the functions of body fluids.

Chapter 5 Etiology and Pathogenesis

1. The concept of the pathogenic factors and its relationship with diseases.

2. The concept, the properties and pathogenic characteristics of the six abnormal climatic factors (wind, cold, summer-heat, dampness, dryness, fire) and their effects on viscera.

3. The pathogenic characteristics of the seven emotions (joy, anger, anxiety, thinking, grief, fear and scare) and their relationship with viscera, qi and blood.

4. The pathogenic characteristics of other factors (improper diet, overwork and over-rest, etc.).

5. The concept of endogenous five evils.

6. The basic regularity of pathogenesis in TCM (the struggle between healthy qi and pathogenic factors, imbalance between yin and yang, the disorders of qi activities).

7. The concepts of healthy qi and pathogenic factors.

8. The five pathological states of disorders of qi activities (qi stagnation, qi upward reversal, qi sinking, qi blockage, qi prostration).

Chapter 6 Diagnostic Methods

1. Inspection: mainly introduce the inspection of tongue, the changes of the tongue texture and tongue fur and their indications.

2. Listening and olfaction: simply introduce the contents of listening and olfaction and their significance in the diagnosis of diseases.

3. Inquiry: inquiry is an important method in the diagnosis of diseases; inquiry should focus on the purpose and key point.

4. Pulse-taking and palpation: Pulse-taking is an important method in clinical diagnosis of diseases in TCM. Introduce the methods of taking pulse, common abnormal pulses and their indications.

Chapter 7 Differentiation of Syndromes

1. The concept and main contents of differentiation of syndromes, and the basic mechanism and principle of differentiation of syndromes.

2. The concept of the eight principles and their relationships; the basic methods of syndrome differentiation with the eight principles.

3. The concept and the relationships of syndrome differentiation of qi and blood; the basic methods of syndrome differentiation of qi and blood.

4. Understand the importance of syndrome differentiation of viscera of TCM in clinical practice, be familiar with the physiological function, pathological manifestation and their relationships of the five zang-organs and the six fu-organs, be familiar with the pathological manifestation of the five zang-organs and the six fu-organs, initially master syndrome differentiation and treatment of common viscera syndromes.

Chapter 8 Therapeutic Principles and Methods

1. The concepts of prevention.

2. The preventive measures before occurrence of disease.

3. The preventive measures to avoid transmission and change of disease.

4. The concepts of therapeutic principles.

5. The treatment of diseases aimed at the principal aspect.

6. The routine treatment and the contrary treatment.
7. The treating secondary symptoms for emergency.
8. The treatment of chronic disease aiming at the principal aspect.
9. The treatment of both principal and secondary aspect.
10. Strengthening the healthy qi and eliminating the pathogenic factors.
11. Regulating yin and yang.
12. The treatment related to the season, locality and individual.
13. Therapeutic methods.

Chapter 9 Chinese Herbs

1. The basic knowledge of the nature and flavors, effects of Lifting, Lowering, Floating and Sinking, meridian tropism of Chinese herbs and their clinical guiding significance.
2. The compatibility and contraindication of Chinese herbs.
3. The development of Chinese herbs, the producing area, collection, processing, dosage and the application of Chinese herbs.
4. The basic concepts, characteristics, functions, indication, application compatibility, classification and precautions of various kinds of Chinese herbs.
5. Be familiar with at least 20 Chinese herbs.

Chapter 10 Chinese Prescriptions

1. The relationship between treatment methods and prescription, the structure of prescription and the application principle of the prescription.
2. Be familiar with the indication, range of application and precautions of different kinds of prescription.

Chapter 11 Acupuncture and Moxibustion

1. The concept and the composition of meridians.
2. The running principles and the distribution of the twelve meridians.
3. The external and internal relation and the circulation of the twelve meridians.
4. The locations, the functions, the indication and the manipulations of common acupoints of each meridian.
5. The classification and the indication of acupoints.
6. The category of needles and the preparation before needling.
7. The usage of various needles, the needling methods, the manipulation, the principle of selection of acupoints, the management and prevention of possible accidents in needling.
8. The diagnosis, syndrome differentiation, treatment principles and selecting acupoints with acupuncture and moxibustion in clinical common diseases such as wind stroke, dizziness and vertigo, facial paralysis, Bi syndromes, gastric pain, common cold, etc.

Chapter 12 Chinese Massage

1. The formation and development of Chinese massage.
2. The relationship between massage therapy and the theories of yin-yang, five elements, zang-fu, qi and blood.

3. The factors which influence the curative effect of massage, indications and contraindications of massage.

4. The treatment mechanism, treatment methods, assistant methods and the possible accident of Chinese massage.

5. The operation skills of basic manual techniques of massage and their clinical application: Shaking, rubbing, vibrating, pressing, and rapping.

6. The operation skills of movement of joints and their clinical applications.

7. The treatments of common diseases with massage therapy, such as cervical spondylopathy, scapulohumeral periathritis, lumbarintervertebral disc protrusion, etc.

8. Each disease is concisely interpreted from the view of etiology and pathology of TCM and modern medicine, and all the diagnostic points, basic therapeutic manual techniques and modified techniques with syndrome differentiation are made clear.

Chapter 13 Other Therapeutic Methods

1. The basic theories and their clinical application of cupping.

2. The basic theories and their clinical application of scrapping.

PRACTICAL

1. Inspection of tongue: the methods of inspection of the tongue in clinical practice, the inspection of the tongue texture and tongue fur, the main points of inspection of tongue.

2. Pulse-taking and palpation: the methods of pulse taking in clinical practice, the manifestations of the common pulses.

3. Explain the methods of selection of common acupoints by citing examples of patients or students.

4. Demonstrate by manipulation in typical cases, insertion and common manipulation techniques.

5. Demonstrate by manipulations and clinical typical cases, the selection of acupoints in the specific cases based on syndrome differentiation and manipulation techniques.

6. Practice on sand sack: Through the practice, the technique of movement and nimbleness of the principal manipulations can be mastered and the strength of the finger and wrist can also be built up.

7. Practice on the human body: practice should be conducted on every part of the human body according to the indications of manual techniques as much as possible.

8. Demonstrate by manipulations, citing two or three clinically typical cases to demonstrate the full manipulation course with massage therapy.

9. Demonstrate by manipulations of cupping and scrapping.

REHABILITATION MEDICINE

康 复 医 学

Chief Editors（主编）
Wu Jianxian（吴建贤） Anhui Medical University（安徽医科大学）
Yan Tiebin（燕铁斌） Sun Yat-sen University（中山大学）

Deputy Chief Editors（副主编）
Wu Yi（吴毅） Fudan University（复旦大学）
Gao Xiaoping（高晓平） Anhui Medical University（安徽医科大学）

Editors（编委）（按姓氏拼音排序）
Chen Hemu（陈和木） Anhui Medical University（安徽医科大学）
Gao Xiaoping（高晓平） Anhui Medical University（安徽医科大学）
Hong Yongfeng（洪永锋） Anhui Medical University（安徽医科大学）
Wang Hongxing（王红星） Nanjing Medical University（南京医科大学）
Wu Jianxian（吴建贤） Anhui Medical University（安徽医科大学）
Wu Yi（吴毅） Fudan University（复旦大学）
Yan Tiebin（燕铁斌） Sun Yat-sen University（中山大学）
Zhou Yu（周云） Anhui Medical University（安徽医科大学）

Course Description

Rehabilitation medicine, also known as physical medicine and rehabilitation (PM&R), or physiatry, physical and rehabilitation medicine (PRM), is a branch of modern medicine that aims to enhance and restore functional ability and quality of life to those with some kinds of physical impairments or disabilities. Its emphasis is not on the full restoration to the premorbid level of function, but rather the optimization of the quality of life for those not able to achieve full restoration. Physicians well-trained in this field are referred to as rehabilitation physicians or rehabilitation therapists who specialize in dealing with patients with injuries to the muscles, bones, ligaments, or nervous system, etc. Specialists in this field provide comprehensive rehabilitation by a team approach, including physical therapists (PT), occupational therapists (OT), speech therapists (ST), prosthetists and orthotists (P&O), team leaders, and rehabilitation medical experts. With the change and development of the concept of health and the mode of medicine, rehabilitation medicine has been an important and indispensable component of modern medicine and has turned into a basic course for study.

Objectives

KNOWLEDGE

At the end of the course, the MBBS students shall be able to:

1. master the concepts of rehabilitation, organization of rehabilitation and its services;

2. understand the significance of assessment, the content and general principles of rehabilitation assessment;

3. master the muscle testing, testing the range of joint motion, assessment of gait, electrodiagnosis, assessment of the activities of daily living, assessment of pain;

4. master the definition, the clinical application and therapeutic effect of physical agent treatment;

5. understand the principles and techniques of physical agent treatment;

6. master the definition and the theory of kinesiotherapy;

7. understand the content, sort, characteristic, effect, principles, and the main treatment techniques of kinesiotherapy;

8. master the definition of occupational therapy;

9. understand the classification and effect of occupational therapy and the relation between occupational therapy and rehabilitation therapy;

10. master the definition of speech disorder;

11. understand the classification of speech disorder, the content and principles of evaluation in speech therapy, the main methods and principles of speech therapy;

12. master the definition of psychological therapy and its clinical significance;

13. understand the disability psychology and the main methods of examination & treatment in psychological therapy;

14. understand the general picture of rehabilitation engineering;

15. understand the concept and sort of Prothesis, orthosis, assistive devices and their effects, and principles of clinical application;

16. master the definition, diagnosis, essential accessory examinations of main diseases in Rehabilitation Department;

17. master the evaluation and common and serious complications of main diseases in Rehabilitation Department;

18. master treatment and rehabilitation principles for main diseases in Rehabilitation Department;

19. understand epidemiology of main diseases in Rehabilitation Department and

the important techniques used in rehabilitation and prevention of main diseases in Rehabilitation Department.

SKILL

At the end of the course, the student shall be able to practice the following skills: organization of an integrated rehabilitation team under the guide of modern rehabilitation concept, completion of some tasks (teamwork involved) including diagnosis and differential diagnosis of common diseases in Rehabilitation Department, and assessment and rehabilitation of these diseases and their complications.

Teaching and Learning Methods

Theory: Rehabilitation medicine takes some appropriate teaching methods such as lecture with multimedia, quiz and interactive discussion.

Practical: Observation in the department of rehabilitation medicine, onsite introduction and demonstration.

Recommended Reference books

Braddom RL. 2004. Handbook of Physical Medicine & Rehabilitation [M]. Philadelphia: Saunders.

De Lisa JA. 2004. Physical Medicine & Rehabilitation: Principles & Practice [M]. 4th ed. Philadelphia: Lippincott Williams &Wilkins.

Essen Frontera WR, Silver JK. 2001. Essentials of Physical Medicine& Rehabilitation [M]. Philadelphia: Hanley & Belfus.

Michelle H, Cameron MD. 2008. Physical Agents in Rehabilitation: From Research to Practice [M]. 5th ed. Philadelphia: Saunders.

Randall L Braddom, David X Cifu. 2016. Physical Medicine &Rehabilitation [M]. 5th ed. Philadelphia: Elsevier.

Schedule Table

Chapter	Contents	Hours	Chapter	Contents	Hours
1	Outline of Rehabilitation Medicine	3	4	Rehabilitation of Patients with Trauma or Disease	25
2	Assessment	3	5	Internship	2
3	Treatment Techniques	3		Total	36

Course Contents

Chapter 1 Outline of Rehabilitation Medicine

1. Epidemiology of disability.
2. The mode of modern medicine.
3. The development of rehabilitation medicine.
4. Definition of rehabilitation.
5. Definition of rehabilitation medicine.
6. General principles of rehabilitation medicine.
7. The content of rehabilitation medicine.
8. Organization of rehabilitation services.
9. The rehabilitation team.
10. The clinical therapeutic effect of rehabilitation.
11. The relation between rehabilitation medicine and clinical specialties.

Chapter 2 Assessment

1. The definition of rehabilitation assessment.
2. The contents and general principles of rehabilitation assessment.
3. Muscle testing.
4. Muscle tone testing.
5. Testing the range of joint movement.
6. Sensation test.
7. Gait assessment.
8. Balance and coordination.
9. Pain assessment.
10. Assessment of the activities of daily living.
11. Electrodiagnosis.

Chapter 3 Treatment Techniques

1. Physical Agent Treatment.

(1) Definition of physical agent treatment.
(2) The effective mode of physical agent treatment to the human body.
(3) The principles of physical stimulation and its response.
(4) Electrotherapy.
(5) Light therapy.

(6) Ultrasound therapy.
(7) Magnetotherapy.
(8) Hydrotherapy.
(9) Biofeedback therapy.
(10) Conductive heat therapy etc.
2. Kinesiotherapy.
(1) Definition of kinesiotherapy.
(2) The content of kinesiotherapy.
(3) The classification of kinesiotherapy.
(4) The characteristic of kinesiotherapy.
(5) The treatment effects of kinesiotherapy.
(6) The basic mode of kinesiotherapy.
(7) Therapeutic exercises for muscle strength.
(8) Therapeutic exercises for range of joint motion.
3. Occupational Therapy.
(1) The definition of occupational therapy.
(2) The content and characteristic of occupational therapy.
(3) The clinical effects of occupational therapy.
(4) Analysis and choice, the prescription of occupational therapy.
(5) The principles and main methods of occupational therapy.
4. Speech Therapy.
(1) The definition of speech therapy.
(2) The basic mode of speech and its obstacle.
(3) Dysphasia, assessment and treatment.
(4) Dysarthria, assessment and treatment.
(5) Apraxia of speech, assessment and treatment.
5. Psychological Therapy.
(1) The Definition of psychological therapy.
(2) Disability psychology and its characteristics.
(3) Psychological examination.
(4) The characteristics of psychological treatment.
(5) Psychological treatment.
6. Rehabilitation Engineering.
(1) The definition of rehabilitation engineering.
(2) Content, assignment, object, relationship with clinical medicine.
(3) Prothesis, the clinical application.
(4) Orthosis, the clinical application.
(5) The clinical application of walking aids, wheelchair, self-help devices etc.
(6) Principles of barrier free accessibilities.

Chapter 4 Rehabilitation of Patients with Trauma or Disease

1. Rehabilitation of Stroke.
(1) The definition, epidemiology, causes and pathology of stroke.

(2) The clinical manifestation, diagnostic criteria and differential diagnosis of stroke.

(3) The common evaluations used in assessing the stroke.

(4) Treatment principles for different types of stroke.

(5) Treatment for stroke, including medication, rehabilitation techniques for hemiplegia and common serious complications.

(6) The recovery process of hemiplegia and movement techniques commonly used in stroke treatment.

(7) The prevention and prognosis of stroke.

2. Traumatic Brain Injury.

(1) The definition and classification of TBI.

(2) Use of Glasgow Coma Scale.

(3) The management of TBI patients in the acute term.

(4) The definition of consciousness.

(5) The technique to judge different conscious states after TBI.

(6) The characteristics and management principles of cognition, memory and personality impairment for TBI patients.

(7) The behavior disturbance after TBI and the principles to deal with it.

(8) The prognosis of TBI patients.

3. Rehabilitation of Cerebral Palsy.

(1) The definition and epidemiology of cerebral palsy.

(2) The clinical manifestation and diagnostic criteria.

(3) The assessment and classification of motor development.

(4) Treatment principle for cerebral palsy.

(5) An introduction of rehabilitation methods of cerebral palsy.

(6) The measures and significance of early intervention.

(7) The family rehabilitation of cerebral palsy.

(8) The prevention methods of cerebral palsy.

4. Rehabilitation of Spinal Cord Injury.

(1) The definition and epidemiology of spinal cord injury.

(2) The clinical manifestations, and diagnostic criteria.

(3) The assessment of injury levels, key muscles and key points, ASIA Impairment Scale and prognosis.

(4) Treatment principle for spinal cord injury.

(5) An introduction of rehabilitation methods of spinal cord injury.

(6) Complications of spinal cord injury.

(7) Prevention and treatment of the complications.

5. Rehabilitation of Peripheral Nerve Injury.

(1) The definition and causes of peripheral nerve injury.

(2) The clinical manifestations and diagnostic criteria of peripheral nerve injury.

(3) Differential diagnosis of peripheral nerve injury.

(4) The assessment of degrees of peripheral nerve injury.

(5) Treatment principle for peripheral nerve injury.

(6) Introduce the prognosis of rehabilitation methods of peripheral nerve injury.

6. Rehabilitation of Back Pain.
(1) The definition and epidemiology of back pain.
(2) The clinical manifestations of back pain.
(3) Diagnostic criteria and differential diagnosis of back pain.
(4) Rehabilitation assessment of back pain.
(5) Rehabilitation principle for back pain.
(6) The rehabilitation methods of back pain.
(7) The measures and significance of early intervention.
(8) The family rehabilitation of back pain.
(9) The prevention methods of back pain.
7. Rehabilitation of Cervical Spondylosis.
(1) Cervical anatomy.
(2) The definition of cervical spondylosis.
(3) The types and clinical manifestations of cervical spondylosis.
(4) Diagnostic criteria of cervical spondylosis.
(5) Differential diagnosis of cervical spondylosis.
(6) Rehabilitation assessment of cervical spondylosis.
(7) Rehabilitation methods of cervical spondylosis.
(8) Prevention of cervical spondylosis.
8. Rehabilitation of Cumulative Trauma Disorders (CTDs).
(1) The definition and epidemiology of CTDs.
(2) The clinical manifestations of CTDs.
(3) Diagnostic criteria and differential diagnosis of CTDs.
(4) The rehabilitation assessment of CTDs.
(5) Rehabilitation treatment principle for CTDs.
(6) The rehabilitation treatment methods of CTDs.
(7) The prevention methods of CTDs.
9. Rehabilitation of Lumbar Disc Herniation.
(1) Lumbar spine anatomy.
(2) Clinical manifestations of lumbar disc herniation.
(3) Types and diagnostic criteria of lumbar disc herniation.
(4) Differential diagnosis of lumbar disc herniation.
(5) Functional assessment of lumbar disc herniation.
(6) Treatment methods of lumbar disc herniation.
(7) The prevention of lumbar disc herniation and functional training.
10. Rehabilitation of Fascitis in Waist.
(1) The definition of fascitis in waist.
(2) Epidemiology and causes of fascitis in waist.
(3) Clinical manifestations of fascitis in waist.
(4) The diagnostic criteria of fascitis in waist.
(5) The differential diagnosis of fascitis in waist.
(6) The assessment methods of fascitis in waist.
(7) The treatment methods of fascitis in waist.

(8) Health education of fascitis in waist.

11. Rehabilitation of Osteoarthritis.

(1) The definition and epidemiology of osteoarthritis.

(2) The clinical manifestations and diagnostic criteria.

(3) The assessment and classification of osteoarthritis.

(4) The treatment principle for osteoarthritis.

(5) An introduction of the medical treatment of osteoarthritis.

(6) An introduction of the rehabilitation treatment methods of osteoarthritis.

(7) The prevention methods of osteoarthritis.

12. Rehabilitation of Fracture.

(1) The overview of fracture.

(2) Clinical manifestations of fracture.

(3) Complications of fracture.

(4) Rehabilitation assessment methods of fracture in the upper limb, including shoulder fracture, humeral fracture, elbow fracture, and forearm fracture, etc.

(5) Rehabilitation treatment methods of fracture in the upper limb, including shoulder fracture, humeral fracture, elbow fracture, and forearm fracture, etc.

(6) Rehabilitation assessment methods of fracture in the lower limb, including hip fracture and dislocation, femoral shaft fracture, knee fracture and dislocation, tibiofibular fracture, anklebone fracture, foot fracture and dislocation, etc.

(7) Rehabilitation treatment methods of fracture in the lower limb, including hip fracture and dislocation, femoral shaft fracture, knee fracture and dislocation, tibiofibular fracture, anklebone fracture, foot fracture and dislocation, etc.

13. Rehabilitation of Coronary Heart Disease.

(1) The definition, classification of coronary heart disease (CHD).

(2) The epidemiology, causes, clinical features and auxiliary examination of CHD.

(3) The clinical features and auxiliary examination after operation of heart transplantation and artificial heart pacemaker.

(4) Content and program of rehabilitation assessment, electrocardiogram exercise test and behavior type assessment of CHD.

(5) Short-term target and long-term rehabilitation target and rehabilitation methods of CHD.

(6) Indication and contraindication of CHD rehabilitation.

(7) Health education of CHD.

14. Rehabilitation of Chronic Obstructive Pulmonary disease (COPD).

(1) The definition of COPD.

(2) The epidemiology, causes and mechanism of COPD.

(3) Clinical manifestation and diagnostic criteria of COPD.

(4) Dysfunction of COPD.

(5) Pulmonary function test, respiratory and motor function assessment.

(6) Therapeutic aim of COPD.

(7) Rebuilding abdominal breathing pattern, postural training, expectoration training and aerobic exercise.

(8) The occupational therapy and psychotherapy of COPD.
(9) Health education of COPD.
15. Rehabilitation of Diabetes.
(1) The definition of diabetes.
(2) The epidemiology of diabetes.
(3) The clinical manifestations and diagnostic criteria of diabetes.
(4) The main complications of diabetes.
(5) The rehabilitation assessment of diabetes.
(6) Prevention and rehabilitation of diabetes.
(7) Prevention and rehabilitation of complications of diabetes.
16. Rehabilitation of Osteoporosis.
(1) The definition and epidemiology of osteoporosis.
(2) The causes of osteoporosis.
(3) The clinical manifestations and diagnostic criteria of osteoporosis.
(4) The differential diagnosis of osteoporosis.
(5) The main complications of osteoporosis.
(6) The rehabilitation assessment of osteoporosis.
(7) Rehabilitation and prevention methods of osteoporosis.
(8) Rehabilitation and prevention methods of the main complications of osteoporosis.
17. Rehabilitation of Tumor.
(1) The definition of tumor.
(2) The epidemiology of tumor.
(3) The clinical manifestations and dysfunctions of tumor.
(4) The functional assessment of tumor.
(5) Treatment principle for tumor.
(6) Rehabilitation methods of tumor.

PRACTICAL

Chapter 5 Internship

(1) The basic setting and common devices of department of rehabilitation medicine.
(2) Clinical rehabilitation procedures.
(3) Working modalities of clinical rehabilitation, especially teamwork modality.
(4) The roles of physician and therapists.
(5) Rehabilitation assessment principles.
(6) The common rehabilitation assessment methods.
(7) PT, OT, ST, orthotics, etc.

ANESTHESIOLOGY

麻　醉　学

Chief Editors（主编）

Cao Junli（曹君利） Xuzhou Medical University（徐州医科大学）
Wang Guolin（王国林） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）

Liu Su（刘苏） Xuzhou Medical University（徐州医科大学）
Xie Keliang（谢克亮） Tianjin Medical University（天津医科大学）

Editors（编委）（按姓氏拼音排序）

Cao Junli（曹君利） Xuzhou Medical University（徐州医科大学）
Cheng Zhixiang（程志祥） Nanjing Medical University（南京医科大学）
Feng Zhiying（冯智英） Zhejiang University（浙江大学）
Huang Dong（黄东） Central South University（中南大学）
Li Shuiqing（李水清） Peking University（北京大学）
Li Yimei（李亦梅） Xinjiang Medical University（新疆医科大学）
Liu Guangzhao（刘广召） Hebei Medical University（河北医科大学）
Liu Su（刘苏） Xuzhou Medical University（徐州医科大学）
Wan Li（万丽） Guangzhou Medical University（广州医科大学）
Wang Guolin（王国林） Tianjin Medical University（天津医科大学）
Xie Keliang（谢克亮） Tianjin Medical University（天津医科大学）
Xu Guanghong（徐光红） Anhui Medical University（安徽医科大学）
Zeng Si（曾思） University of Electronic Science and Technology of China（电子科技大学）
Zhang Ruilin（张瑞林） Shanxi Medical University（山西医科大学）
Zhang Wei（张伟） Nanjing University（南京大学）
Zhao Xuli（赵序利） Shandong University（山东大学）

Course Description

Anesthesiology as the grade-2 subject and grade-1 clinical department has been independently learned by many students including foreign students. Anesthesiology is one of the indispensable and professional courses for medical students. Anesthesiology is the field of medicine specialized in the application of drugs and other agents that cause insensibility to pain. This course provides a broad orientation

to the basic principles of anesthesia practice and the perioperative setting. Focus of the course includes: preparation of the anesthetizing environment; patient assessment and physiologic monitoring; anesthetic techniques, interventions and associated equipment; pharmacologic agents; communication and documentation; anesthesia care plan construction and evaluation. The most important task of anesthsiology involves preoperative evaluation, intraoperative and postoperative care and supervision, and the management of the systems and personnel that are required to support the different activities. The subspecialties within anesthesiology include cardiothoracic anesthesiology, critical care, neuroanesthesia, obstetrical anesthesiology, pain management, pediatric anesthesiology, and ambulatory anesthesia.

The purposes of anesthesiology learning are to master the basic theory and technology of anesthesiology and ensure patients'intraoperative and postoperative safety. With the development of medicine and anesthesiology, relationship between anesthesiology and other disciplines will be more closely, promoting each other and improving together.

Objectives

KNOWLEDGE

At the end of the course, the MBBS students shall be able to:

1. Master evaluation of important organ function before anesthesia such as the classification of cardiac function and master the methods of airway assessment and mallampati criteria.

2. Master the classification before anesthesia (ASA classification) and be familiar with the risks associated with anesthesia and surgeryand.

3. Master the definition and the types of anesthesia.

4. Master the formula of tube size and inserted depth, how to confirm the position of tracheal tube and the complications of tracheal intubation.

5. Master the basic monitors and their significances during operation.

6. Master the complications of local anesthesia.

7. Master the common complications in PACU and related managements.

8. Master the principle of fluid therapy and know how to calculate the fluid requirement.

9. Master the methods of pain assessment and be familiar with the treatment of postoperative pain.

10. Know common perioperative emergencies and corresponding measures: grasp the clinical features of acute severe drug reaction, the immediate management of allergic reaction, the definition of Menderson Syndrome, the factors predisposing to aspiration

and the prevention of aspiration and e. t. c.

11. Master the definition of cardiac arrest and know how to predict cardiorespiratory arrest.

12. Master the definition of multiple organ failure syndrome (MOFS) and symptoms of SIRS.

13. Master the initial approach for a critical ill patient.

14. Master the principle of COPD treatment.

15. Master the aim of mechanical ventilation and know which kind of patients need mechanical ventilation.

16. Master the definition of acute lung injury and ARDS.

17. Master the definition, categories, assessment and measurement of pain.

18. Master the common drugs used to chronic pain treatment.

SKILL

At the end of the course, the student shall be able to perform endotracheal intubation and perform the basic monitors during operation, master the methods to open the airway and the perform of basic life support.

Teaching and Learning Methods

Theory: Teaching anesthesiology to medical students is provided with the help of lectures and tutorials that deal with the clinical effect of narcotic drugs and their principles of pharmacodynamics and pharmacokinetics. They also need to master the preanesthetic evaluation and preparation, the selection of anesthesia methods and anaesthesia management.

Practical: practical training asks for medical students to know the preanesthetic evaluation and preparation, the selection of anesthesia methods and anaesthesia management, they also be trained to learn basic anesthesia operations. The students is advised to pay attention to the regulations of anesthesia laboratories and anesthesiology operating room.

Recommended Reference books

Guo Qulian (郭曲练), Yao Shanglong (姚尚龙). 2016. Clinical Anesthesiology [M]. 3th ed. Beijing: People's Health Publishing House.

Join F Butterworth, David C Mackey, John D Wasnick. 2016. Morgan&Mikhail'Clinical Anesthesiology [M]. 5th ed. [M]. Beijing: Peking University Medical Press.

Wang Guolin (王国林), Guo Qulian (郭曲练). 2015. Naesthesology (Foreign students and Bilingual Teaching) [M]. Beijing: Tsinghua University Press.

Schedule Table

Chapter	Contents	Hours
1	Anesthetic Assessment and Preparation for Surgery	4
2	Anesthesia	8
3	Postanesthsia care	4
4	Management Perioperative Emergencies and Cardiac Arrest	8
5	Recognition and Management of the Critically Ill Patient	8
6	Anaesthetists and Chronic Pain	4
	Total	36

Course Contents

THEORY

Chapter 1 Anesthetic Assessment and Preparation for Surgery

1. The aims and process of preoperative assessment.
2. Which kind of patients do not need to attend the preoperative assessment clinic to seen an anesthetist.
3. Which kind of patients need to attend to the assessment of anesthetist preoperatively.
4. The contents of anesthetic assessment.
5. Which coexisted problems of cardiovascular systme may increase the risk in perioperative.
6. The classification of cardiac function.
7. How to assess the exercise tolerance.
8. The methods of airway assessment and what symptoms indicate difficult airway.
9. How to do the simple bedside tests.
10. ASA classification and significance.
11. The risks associated with anesthesia and surgery.
12. The risk index score and significance.
13. How to inform the patient and consent.

Chapter 2 Anesthesia

1. The aims and goals of premedication.
2. Different kinds of drugs that be used for premedication.
3. The guidelines for preoperative starvation of elective surgery.
4. The definition of anesthesia and the types of anesthesia.

5. The different kinds of anesthetics, including their characteristics, advantages and disadvantages.

6. The definitions of Blood: Gas partition co-efficient and MAC, and their significances.

7. The equipment that would be used during anesthesia induction and intubation.

8. The methods of keeping airway open and endotracheal intubation.

9. How to choose suitable size of tube and how to calculate the inserting depth of tube.

10. How to insert laryngeal mask airway.

11. How to confirm the position of tracheal tube.

12. The complications of intubation.

13. How to manage with difficult airway.

14. The different kinds of analgesic drugs and their characteristics.

15. The components of anesthetic machine.

16. How to check the anesthetic machine.

17. The measurement and monitoring during anesthesia and operation.

18. The significances of different measurements and mornitors.

19. How to perform intravenous cannulation and arterial cannulation and the complications.

20. How to choose and use intravenous fluids.

21. The different types of local anesthesia.

22. The different kinds of local anesthetics and their characteristics.

23. The complications of local anesthesia.

Chapter 3 Postanesthsia Care

1. The duty and location of PACU.

2. The history of PACU.

3. The equipments in PACU.

4. How to transported patients from OR to PACU.

5. The factors influencing stay in PACU.

6. The most common complication (N&V) in PACU and the management.

7. The respiratory complications happened in PACU and the management.

8. The circulatory complications happened in PACU and the management.

9. The fluid compartments of body and how to calculate the body water.

10. Use examples to explain the "4, 2, 1" rule and the calculation of fluid requirement.

11. The Fluid therapy principle and how to choose suitable fluid.

12. What should be evaluation before patients discharge.

13. The procedure of discharge.

14. Different types and categories of postoperative pain.

15. The pathophysiological consequences of postoperative pain.

16. The principles and methods of pain assessment.

17. The principle of postoperative pain therapy.

18. The treatments of postoperative pain.

Chapter 4 Management Perioperative Emergencies and Cardiac Arrest

1. The incidence of severe drug reactions and the clinical features.
2. Two kinds of drug reaction: anaphylactic reaction and anaphylactoid reaction.
3. The causes of allergic reaction.
4. The treatment of allergic reaction, including immediate management and subsequent management.
5. The investigation of allergic reaction.
6. The definition and symptoms of Menderson Syndrome.
7. The factors predisposing to aspiration.
8. The management of aspiration in three different situation ((i) Neuromuscular blocking drugs not given; surgery not urgent; (ii) Neuromuscular blocking drugs not given; surgery essential; and (iii) Neuromuscular blocking drugs given).
9. How to prevent aspiration happen.
10. The management of unexpected failed intubation in different situation. (in elective surgery or emergency surgery, can ventilation or failed ventilation).
11. The principle and the method of management of airway obstruction.
12. The characteristics of severe asthma.
13. The immediate and subsequent management of severe asthma.
14. The monitor of severe asthma.
15. The definition and the characteristics of tension pneumothorax.
16. The causes of tension pneumothorax.
17. The management of tension pneumothorax.
18. The definition and causes of severe hypotension.
19. The definition and symptoms of sepsis.
20. The causes of sepsis.
21. The management of sepsis.
22. The triggers and causes of MH.
23. The presentation of MH.
24. The immediate management (support manangement) and specific treatment of MH.
25. How to perform anesthesia for malignant hyperpyrexia-susceptible patients.
26. The definition and types of cardiac arrest and how to evaluation.
27. How to perform basic life support (BLS) (A, B, C).
28. The method of chest compression.
29. The differences between adult and child in BLS.
30. How to perform advanced life support.
31. How to perform defibrillation.

Chapter 5 Recognition and Management of the Critically Ill Patient

1. The organization of critical care.
2. The levels of care for critical ill patients.
3. The training and education of ward-based medical and nursing staff. (aim and methods).
4. The different types and categories of clinical scoring systems.

5. The advantages of the scoring systems.
6. What is the outreach teams and the aims of outreach teams.
7. The definition and the causes of MOFS.
8. The definition and the causes of SIRS and the treatment of SIRS.
9. The initial assessment and management of cardiorespiratory arrest.
10. How to predict cardiorespiratory arrest.
11. The action on receiving a call to a sick patient.
12. The initial approach for assessing critical ill patients (A, B, C).
13. The methods of breathing assessment and management.
14. The definition, symptoms and management of COPD.
15. The assessment of COPD.
16. The overview of ICU.
17. The monitoring on ICU.
18. The management of renal function.
19. The assessment of neurological and hepatic function.
20. The indications of mechanical ventilation.
21. Different ventilation mode and the application.
22. The common methods of sedation and analgesia in ICU.
23. The assessment of sedation and analgesia.
24. The definition of TPN and its indication.
25. The complications of TPN.
26. The definition of acute lung injury and ARDS and the management of respiratory failure.
27. The management of cardiovascular failure.
28. The treatment of acute renal failure.

Chapter 6 Anaesthetists and Chronic Pain

1. The definition and categories of pain.
2. The definition and characteristics of acute pain.
3. The definition and characteristics of chronic pain.
4. The mechanisms of pain generation, including the pathway of nociception and the chemicals that released during pain process.
5. The variability of pain.
6. The clinical assessment of chronic pain, including history, psychological and physical examination.
7. The measurement and assessment of pain.
8. The therapies of chronic pain.
9. The pharmacological and non-pharmacological treatment of chronic pain.
10. The characteristics of neuropathic pain and postherpetic neuralgia.
11. Some other specific chronic pain problems.
12. The guideline for cancer pain treatment.
13. How to prevent chronic pain.

FAMILY MEDICINE

全 科 医 学

Chief Editors（主编）
Fang Lizheng（方力争） Zhejiang University（浙江大学）
Yang Xilin（杨西林） Tianjin Medical University（天津医科大学）

Deputy Chief Editors（副主编）
Chen Liying（陈丽英） Zhejiang University（浙江大学）
Lu Xiaoqin（路孝琴） Capital Medical University（首都医科大学）

Editors（编者）（按姓氏拼音排序）
Chao Guanqun（晁冠群） Zhejiang University（浙江大学）
Chen Liying（陈丽英） Zhejiang University（浙江大学）
Dai Honglei（戴红蕾） Zhejiang University（浙江大学）
Fang Lizheng（方力争） Zhejiang University（浙江大学）
Jin Guanghui（金光辉） Capital Medical University（首都医科大学）
Lu Chongrong（卢崇蓉） Zhejiang University（浙江大学）
Lu Xiaoqin（路孝琴） Capital Medical University（首都医科大学）
Yang Xilin（杨西林） Tianjin Medical University（天津医科大学）
Zhang Jia（张佳） Zhejiang University（浙江大学）

Course Description

Family medicine is a secondary clinical discipline containing clinical medicine, preventive medicine, rehabilitation medicine, and related humanities and social science. Family medicine introduces basic principles and then applies clinically relevant chapters: preventive care, health education, the management of medically unexplained physical symptoms, and the management of common problems. With the development of family medicine, we are comuitted to help the students to develop the clinical approaches to the evaluation and initial management of common problems.

This course will focus on the principles of family medicine and the clinical management connected with family medicine, such as preventive care and health education. This course will also pay attention to the clinical applications, so as to integrate the theory and clinical knowledge. In this course, the education of principles of family medicine, the initial evaluation and management of undifferentiated symptons and common problems will be applied, and the preventive care and health education

which are the features of family medicine will also be practicecl. On the other hand, the education of the clinical practice for outpatient and inpatient will be applied. Since the medical problems are numerous, comnon medical problems are selectecl to cultivate the students, clinical thinking and let them muster the approaches to evaluate and solve various medical problems.

Objectives

KNOWLEDGE

At the end of the course, the students will be able to:

1. Describe the definition and essential feature of family medicine.
2. Understand the principles and history of family medicine.
3. State the difference between family physiciam and other specialists.
4. Master the management of preventive care.
5. Master the principles of health education.
6. State the mechanism, diagnostic criteria, therapeutic principle of common diseases.
7. Master the approach of initial evaluation and management of common symptoms.
8. Understand the principles of referral.
9. Master the initial management of common emergency problems.

SKILLS

At the end of the course, the students will be able to:

1. Develop good clinical thinking, and make diagnosis by related clinical manifestation and auxiuary examinations.
2. Develop clinical communication ability with different patients and other doctors.
3. Use correct method to examine patients and make the correct differential diagnosis.

Teaching and Learning Methods

Theory: Teaching family medicine to undergraduate medical student is provided with the help of lectures and tutorials who are the specialists of the follaing areas:

1. Principles of family medicine, preventive care, and health education.
2. Common causes, clinical evaluation, and management of unexplained medical symptoms.
3. Definition, etiology, diagnosis, and comprehensive management of common diseases in family medicine.

Practical: Practical training can be provided into wards and outpatient training. Train the students'basic clinical skills of inpatients and outpatients, history-taking and physical examination, the skills of communication and patient care.

Recommended Textbooks

John Murtagh, Jill Rosenblatt. 2011. Murtagh's General Practice [M]. 5th ed. McGraw-Hill Australia Pty Ltd.

Philip D Sloane, Lisa M Slatt, Mark H. Ebell, et al. 2012. Essential of Family Medicine [M]. 6th ed. Philadelphia: Lippincott Williams & Wilkins.

P Venugopal, Kusum Verma, T P Singh et al. 2003. Syllabus MBBS at the AIIMS. New Delhi: All India Institute of Medical Sciences.

Schedule Table

Chapter	Contents	Hours	Chapter	Contents	Hours
1	The Overview of Family Medicine	0.5	23	Ear Pain	1
2	The Management of Physician-patient Relationships	0.5	24	Common Eye Problems	1
3	Information Mastery: Evidence-based Medicine	1	25	Coronary Heart Disease	2
4	Preventive Health Care and Main Method	0.5	26	Heart Failure	2
5	Child and Adolescent Care and Screening	0.5	27	Hypertension	2
6	Adult Care and Preventive Practice	0.5	28	Asthma	2
7	Palliative and End-of-life Care	0.5	29	Chronic Obstructive Pulmonary Disease	2
8	The Concept of Health	0.5	30	Chronic Viral Hepatitis	2
9	The Influencing Factors of Health	0.5	31	Diabetes	2
10	The Connotation and Methods of Health Education	0.5	32	Hyperlipidemia	2
11	Health Education Practice	0.5	33	Thyroid Dysfunction	2
12	The Common Emergency Problems	0.5	34	Anxiety	1
13	Emergency Management and Preventive Treatment	1	35	Depression	1
14	Referral Management	0.5	36	Children's Febrile Disease	2
15	Headache	2	37	Disorders of Behavior and Development	2
16	Dizziness	2	38	Prostatic Problems	1
17	Fatigue	2	39	Contraception	1
18	Chest Pain	2	40	Breast Problems	1
19	Abdominal Pain	2	41	Menstrual Syndromes	1
20	Diarrhea	2	42	Vaginitis	1
21	Dysuria	2	43	Sexually Transmitted Infections	1
22	Low Back Pain	2		Total	56

Course Contents

THEORY

Chapter 1 The Overview of Family Medicine

1. The definition and essential feature of family medicine.
2. The history of family medicine.
3. The professional scope of family medicine.
4. The relationship between of family medicine and special department.
5. The role of family medicine practice today.

Chapter 2 The Management of Physician–patient Relationships

1. The definition of physician-patient relationships.
2. Different types of difficult relationships.
(1) For the rambling patient.
(2) For the reticent patient.
(3) For the patient seeking pain relief.
3. The management to solve the difficult relationships.

Chapter 3 Information Mastery: Evidence–based Medicine

1. The introduction to evidence-based medicine.
2. The practice of evidence-based medicine.
3. Information mastery and information sources.
(1) From original journals and translation journals.
(2) From textbooks.
(3) From lectures.
(4) From review articles or meta-analysis.
(5) From experts.
(6) From practice guidelines.
(7) From clinical experience.
4. The application of information.

Chapter 4 Preventive Health Care and Main Method

1. Definition of prevention.
2. Evidence as the foundation of prevention.
3. Role of family physicians in prevention.
4. Three precautionary principles and strategy.
5. Content and methods of preventive health services.
(1) Health counseling and patient education.

(2) Screening test and screening method.
(3) Tobacco and alcohol.
(4) Immunizations.
6. Patient education and psychosocial support.

Chapter 5 Child and Adolescent Care and Screening

1. Overview of child and adolescent care.
2. Screening of children and adolescents.
(1) Content of screening.
(2) Growth.
(3) Development.
3. Immunizations.

Chapter 6 Adult Care and Preventive Practice

1. Using evidence-based guidelines.
2. Putting prevention into practice.
(1) Risk assessment and risk reduction.
(2) Screening.
(3) Immunization.
(4) Chemoprophylaxis.
(5) The periodic health evaluation.
(6) Patient education.

Chapter 7 Palliative and End-of-life Care

1. Definition of palliative care and hospice.
2. Prevention and preparation.
(1) Advance directives.
(2) System issues.
3. Symptom management.
4. Ethical and legal issues.
5. Psychosocial issue.

Chapter 8 The Concept of Health

Chapter 9 The Influencing Factors of Health

1. Influencing factors on human health.
2. Environmental factors.
3. Biological factors.
4. Lifestyle.
5. Familial factors.

Chapter 10 The Connotation and Methods of Health Education

1. Definition and principles of health education.
2. Content of health education.

3. The art of communication in health education.
4. Skills of communication and presentation in health education.
5. Planning a health educational programme.
6. Evaluation of health educational activities.

Chapter 11 Health Education Practice

1. Preparing and delivering a health educational speech on simple issues.
2. Healthy lifestyle guidance.
3. Health education for hypertension and diabetes.

Chapter 12 The Common Emergency Problems

1. Definition of Emergency.
2. The common categories and reasons of emergency problems.

Chapter 13 Emergency Management and Preventive Treatment

1. Principles of management.
2. The common first-aid method of common emergency problems.
3. Preventive treatment of common emergency problems.

Chapter 14 Referral Management

1. The principle of referral.
2. The assessment for emergency problems.

Chapter 15 Headache

1. The common causes of headache.
2. Differential diagnosis.
3. Common headache triggers.
4. Clinical evaluation.
(1) History and physical examination.
(2) Diagnostic testing.
5. Management.
(1) Treatment of selected diagnoses.
(2) Long-term monitoring.
6. Key points.

Chapter 16 Dizziness

1. The Common causes of dizziness in primary care.
2. Differential diagnosis.
3. Clinical evaluation.
(1) History and physical examination.
(2) Diagnostic testing.
4. Management.
(1) General principles.
(2) Treatment of selected diagnoses.

5. Key points.

Chapter 17 Fatigue

1. The Common causes of fatigue in primary care and differential diagnosis.
2. Clinical evaluation.
(1) History and physical exam.
(2) Diagnostic testing.
3. Management.
4. Key points.

Chapter 18 Chest Pain

1. Definition and epidemiology of chest pain.
2. Etiology of chest pain.
3. Differential diagnosis and pathophysiology.
4. Clinical evaluation.
(1) History and physical examination.
(2) Diagnostic testing.
5. Comprehensive management.
6. Key points.

Chapter 19 Abdominal Pain

1. Common causes and pathophysiology of abdominal pain.
2. Clinical evaluation of abdominal pain.
(1) History and physical examination.
(2) Diagnostic testing.
(3) Recommended diagnostic strategy.
3. Management for abdominal pain.
4. Key points.

Chapter 20 Diarrhea

1. Acute diarrhea.
(1) Common causes of acute diarrhea.
(2) Clinical evaluation of acute diarrhea.
1) History and physical examination.
2) Diagnostic testing.
3) Recommended diagnostic strategy.
(3) Management for acute diarrhea.
2. Clinical diarrhea.
(1) Common causes of clinical diarrhea.
(2) Clinical evaluation of clinical diarrhea.
1) History and physical examination.
2) Diagnostic testing.
3) Recommended diagnostic strategy.
(3) Management for clinical diarrhea.

Chapter 21 Dysuria

1. Pathophysiology.
2. Differential diagnosis.
3. Risk factors.
4. Clinical epidemiology.
5. Clinical evaluation.
(1) History.
(2) Physical examination,
(3) Laboratory tests.
6. Management.
(1) Algorithm for the management of dysuria.
(2) Acute uncomplicated lower urinary tract i.nfection.
(3) Acute pyelonephritis in younger women.
7. Special Considerations.

Chapter 22 Low Back Pain

1. Common causes of low back pain and differential diagnosis.
2. Clinical evaluation of low back pain.
(1) History.
(2) Physical Examination.
(3) Diagnostic Testing.
(4) "Red flag" symptoms for patients with low back pain.
3. Management for low back pain.
4. Key points.

Chapter 23 Ear Pain

1. Functional anatomy of the ear.
2. Differential diagnosis of ear pain.
3. Clinical evaluation.
(1) History and physical examination.
(2) Red flags signaling problems.
(3) Diagnostic testing.
4. Management of ear pain.
(1) Initial management.
(2) Long-term monitoring and prevention.
5. Patient education.
6. Key points.

Chapter 24 Common Eye Problems

1. Functional anatomy of the eye.
2. Differential diagnosis of common eye problems.
3. Clinical evaluation.

(1) History and physical examination.
(2) Diagnostic testing.
4. Management for common eye problems.
(1) Initial management.
(2) Treatment of selected diagnoses.
5. Key points.

Chapter 25 Coronary Heart Disease

1. Definition and epidemiology of coronary heart disease.
2. Etiology of coronary heart disease.
3. Risk factors for chronic stable angina.
4. Diagnosis and differential diagnosis.
(1) History and physical examination.
(2) Diagnostic testing.
(3) Differential diagnosis.
5. Comprehensive management.
6. Patient education.
7. Key points.

Chapter 26 Heart Failure

1. Definition and epidemiology of heart failure.
2. Etiology of heart failure.
3. Risk factors for heart failure.
4. Diagnosis and differential diagnosis.
(1) History and physical examination.
(2) Diagnostic testing.
(3) Differential diagnosis.
5. Comprehensive management.
6. Patient education.
7. Key points.

Chapter 27 Hypertension

1. Definition and epidemiology of hypertension.
2. Etiology of hypertension.
3. Risk factors for hypertension.
4. Diagnosis and differential diagnosis.
(1) History and physical examination.
(2) Diagnostic testing.
(3) Differential diagnosis.
5. Complications of hypertension.
6. Comprehensive management.
7. Patient education.
8. Key points.

Chapter 28 Asthma

1. Definition and epidemiology of asthma.
2. Etiology of asthma.
3. Risk factors for asthma.
4. Diagnosis and differential diagnosis.
(1) History and physical examination.
(2) Diagnostic testing.
(3) Differential diagnosis.
5. Comprehensive management.
6. Patient education.
7. Key points.

Chapter 29 Chronic Obstructive Pulmonary Disease

1. Definition and epidemiology of chronic obstructive pulmonary disease.
2. Etiology of chronic obstructive pulmonary disease.
3. Diagnosis and differential diagnosis.
(1) History and physical examination.
(2) Diagnostic testing.
(3) Differential diagnosis.
4. Comprehensive management.
5. Patient education.
6. Key points.

Chapter 30 Chronic Viral Hepatitis

1. Hepatitis B.
(1) Epidemiology of hepatitis B.
(2) Natural history of hepatitis B.
(3) Diagnosis of hepatitis B.
(4) Treatment of hepatitis B.
(5) Screening and prevention for hepatitis B.
2. Hepatitis C.
(1) Epidemiology of hepatitis C.
(2) Natural history of hepatitis C.
(3) Diagnosis of hepatitis C.
(4) Screening and prevention for hepatitis C.
3. Key points.

Chapter 31 Diabetes

1. Definition and epidemiology.
2. Classification and etiology.
3. Clinical presentation.
4. Diagnosis and differential diagnosis.
5. Complications.

6. Comprehensive management.
7. Patient education.
8. Key points.

Chapter 32 Hyperlipidemia

1. Definition and epidemiology.
2. Screening and diagnosis.
3. Initial evaluation.
4. Comprehensive Management.
5. Long-term monitoring.
6. Patient education.
7. Key points.

Chapter 33 Thyroid Dysfunction (Hypothyroidism and Hyperthyroidism)

1. Definition and epidemiology.
2. Classification and common causes.
3. Initial evaluation.
4. Management.
5. Long-term monitoring.
6. Patient education.
7. Key points.

Chapter 34 Anxiety

1. Common anxiety disorders in primary care.
2. Differential diagnosis.
3. Screen for anxiety disorders using one or two questions.
4. Management.
(1) Medications (antidepressants、anxiolytics).
(2) Cognitive-behavioral therapy (CBT).
(3) Supportive psychotherapy.
5. Long-term monitoring.
6. Key points.

Chapter 35 Depression

1. Incidence of depression in primary care.
2. Diagnosis.
3. Differential Diagnosis.
(1) History and Physical Examination.
(2) Diagnostic Testing (PHQ-2、PHQ-9).
4. Initial evaluation and treatment.
(1) Evaluation of suicide risk.
(2) Choice of treatment modality.
(3) Antidepressant medications.
(4) Psychotherapy.

(5) Indications for referral.
5. Long-term monitoring.
6. Key points.

Chapter 36 Children's Febrile Disease

1. Definition of fever.
2. Assessment of fever.
3. Differential diagnosis.
4. Clinical evaluation and protocols.
(1) Protocols.
(2) Diagnostic testing.
5. Management.

Chapter 37 Disorders of Behavior and Development

1. Initial evaluation.
(1) Screening tools.
(2) Key recommendations.
2. Failure to thrive.
(1) Causes of failure to thrive.
(2) Initial evaluation.
(3) Management.
(4) Long-term monitoring.
3. Autistic spectrum disorder (ASD).
(1) Definition of ASD.
(2) Classification of ASD.
(3) Clinical presentation.
(4) Initial evaluation.
(5) Management.
4. Cerebral palsy (CP).
(1) Definition of CP.
(2) Etiology of CP.
(3) Initial evaluation.
(4) Management.

Chapter 38 Prostatic Problems

1. Benign prostatic hyperplasia.
(1) Definition and etiology of benign prostatic hyperplasia.
(2) Diagnosis of benign prostatic hyperplasia.
(3) Management for benign prostatic hyperplasia.
2. Prostatitis.
(1) Definition and etiology of prostatitis.
(2) Diagnosis and differential diagnosis of prostatitis.
(3) Management for prostatitis.

3. Prostate cancer.
(1) Screening for prostate cancer.
(2) Diagnosis of prostate cancer.
(3) Management for prostate cancer.
4. Key points.

Chapter 39 Contraception

1. Contraceptive methods.
2. Common side effects.
(1) Contraindications to oral contraceptive use.
(2) Clinically significant interactions with oral contraceptive.
3. Management.
(1) Missed oral contraceptive or contraceptive patch.
(2) Algorithm to guide in the selection of a contraceptive method.
(3) Managing contraceptive side effects.

Chapter 40 Breast Problems

1. Breast pain.
(1) Pathophysiology.
(2) Differential diagnosis.
(3) Clinical Evaluation.
1) History.
2) Physical Examination.
3) Laboratory tests.
(4) Management.
1) Medications.
2) Algorithm for the treatment of mastalgia.
2. Nipple discharge.
(1) Pathophysiology.
(2) Differential diagnosis.
(3) Clinical evaluation.
1) History.
2) Physical examination.
3) Laboratory tests.
(4) Management.
Algorithm for the treatment of nipple discharge.

Chapter 41 Menstrual Syndromes

1. Dysmenorhea.
(1) Definition.
(2) Classification.
(3) Pathophysiology.
(4) Differential diagnosis.

(5) Clinical evaluation.
1) History.
2) Physical examination.
3) Diagnostic testing.
4) Recommended diagnostic strategy.
(6) Management.
2. Abnormal uterine bleeding.
(1) Definition.
(2) Pathophysiology.
(3) Clinical evaluation.
1) History.
2) Physical examination.
3) Diagnostic testing.
4) Recommended diagnostic strategy.

Chapter 42 Vaginitis

1. Pathophysiology.
2. Differential diagnosis.
3. Clinical evaluation.
(1) History.
(2) Physical examination.
(3) Diagnostic Testing.
4. Management.
5. Patient education.

Chapter 43 Sexually Transmitted Infections

1. Definition of sexually transmitted infections.
2. Diagnosis and treatment of common sexually transmitted infections.
(1) Chlamydia.
(2) Pelvic inflammatory disease.
(3) Human immunodeficiency virus infection.
(4) Human papillomavirus infection.
(5) Herpes simplex virus infection.
(6) Syphilis.
3. Screening and prevention of sexually transmitted infections.
4. Key points.

PRACTICAL

I Inpatient Department

1. Be able to recognize the medical problems which require inpatient treatment.

2. Be able to take history accurately, perform comprehensive physical examination and basic clinical skills.

3. Master clinical thinking method of undifferentiated symptoms.

4. Master the diagnosis and treatment of common diseases.

5. Master the comprehensive management of patients with multiple chronic diseases.

6. Be familiar with the appropriate outpatient care following hospitalization.

II Outpatient Department

7. Be familiar with how the faculty see patients in the outpatient clinic and how to provide health care in the ambulatory setting.

8. Be able to focus on practicing communication skills.

9. Mater quick history-taking skills and physical examination of outpatients.

10. Master clinical thinking method of common symptoms, such as fatigue, chest pain, weight loss, edema, etc.

11. Be familiar with the guidelines of preventive care and chronic disease management.

MEDICAL COMMUNICATION

医学沟通学

Chief Editors（主编）

Xu Anding（徐安定） Jinan University（暨南大学）
Zhao Changying（赵长鹰） Jinan University（暨南大学）
Yang Yi（杨弋） Jilin University（吉林大学）
Huang Heqing（黄河清） Army Medical University（陆军军医大学）

Deputy Chief Editors（副主编）

Ling Qingran（林清然） Jinan University（暨南大学）
Cui Li（崔俐） Jilin University（吉林大学）
Zhou Zhenhua（周振华） Army Medical University（陆军军医大学）
Zhang Chunyang（张春阳） South China University of Technology（华南理工大学）

Editors（编委）（按姓氏拼音排序）

Cui Li（崔俐） Jilin University（吉林大学）
Huang Heqing（黄河清） Army Medical University（陆军军医大学）
Ling Qingran（林清然） Jinan University（暨南大学）
Xu Anding（徐安定） Jinan University（暨南大学）
Yang Yi（杨弋） Jilin University（吉林大学）
Zhang Chunyang（张春阳） South China University of Technology（华南理工大学）
Zhao Changying（赵长鹰） Jinan University（暨南大学）
Zhou Zhenhua（周振华） Army Medical University（陆军军医大学）

Course Description

Communication for Medicine is the study of the many factors that influence the relationship between doctors and patients. Students will explore how to establish a trusting and cooperative relationship between the two sides through the exchange of information in order to improve the body health. After their semester of learning, the students need to understand the theoretical basis for communication in medicine, as well as the laws and regulations that should be followed in doctor-patient communication, and to master the basic principles and skills of communication.

Objectives

KNOWLEDGE

At the end of the course, the MBBS students shall be able to:

1. To understand the basic theory of medical communication.
2. To master the principles of doctor-patient communication.
3. To master the laws and regulations, the rights and obligations of doctors and patients.

SKILL

At the end of the course, the MBBS students shall be able to practice the following the methods and skills of medical communication.

Teaching and Learning Methods

Theory Teaching Medical Communication to medical students is provided with the help of lectures and tutorials to understand the basic theory of medical communication, the principles of doctor-patient communication, the laws and regulations, the rights and obligations of doctors and patients.

Practicals Practical training asks for medical students are to know the methods and skills of medical communication.

Recommended Textbooks

Jonathan Silverman, Suzanne Kurtz, Juliet Draper. 2013. Skills for Communicating with Patients [M]. 3nd ed. New York: CRC Press.

Margaret Lioyd. 2009. Communication Skills for Medicine [M]. 3rd ed. (Singapore): Elsevier .

Schedule Table

Chapter	Content	Lecture Hours	Practical Hours
1	Introduction: Basic of theory medical communication The principle of communication between doctors and patients Laws and regulations for the communication between doctors and patients Rights and duties of doctors	3	

Continued

Chapter	Contents	Lecture Hours	Practical Hours
2	Watching movies: success and failure of doctor-patient communication		3
3	Basic communication skills-inquiry and medical history collection	3	
4	Role play—medical history collection		3
5	Basic communication skills—listen	3	
6	Clinical practice-to observe how to communication between the patient and senior doctors		3
7	Application of basic communication skills (communication with patients, members of patients family, children's, teenagers, old people and people with different cultural backgrounds)	3	
8	Presentation (essay): The importance of communication in patient with different cultures backgrounds		3
9	Special cases in communication Bad news telling, Reports of medical errors, complaints, adverse events	3	
10	Role play: Bad news telling		3
11	Communication with colleagues and partner	3	
12	Case Study		3
	Total	18	18

Course Contents

THEORY

Chapter 1 General Introduction

1. Definition of medical communication.
2. Basic of theory medical communication.
3. Medical communication in range and contents of study.
4. The principles of communication between doctors and patients.
5. Laws and regulations for the communication between doctors and patients.
6. Rights and duties of doctors.
7. The relationship between the clinical medicine and medical communication.
8. The methods for medical communication learning.

Chapter 2 Basic Communication Skills–Inquiry and Medical History Collection

1. Basic concepts and principles of inquiry.
2. Basic skills of inquiry:
Open questions,
Closed questions,
Focused questions,
Cross-culture inquiry.

Selective questions,
Neutral questions.
3. The step of inquiry in different medical service and environment.
Out-Patient department.
In-Patient department.
4. Attention point in inquiry.
Too much medical terminology.
The doctor's confidence and calmness.
Respect the patient's faith, culture and hobbies.
Privacy the privacy of patient.
The neutral position.

Chapter 3 Basic Communication Skills–Listening

1. Basic concepts and principles of listening.
2. Basic skill of listen: Urge, Repetition, Silence, Sun up and Confirmation, Support and Agree, Listening with body language, Arguments and Serious, Explanations.
3. Listening skills in different group of patients.
The aged who speak difficultly.
Female who speak shy.
Patient who unwilling to speak.
Patient who is silent.
Patient who talk endlessly.
Patient who mind poorly.
4. The wrong region in the listening.
Quick to judge.
Patient with contempt.
Listening skills are inappropriate.
Relying on instrument does not attach importance to inquiry.
Make moral judgments.
Doctor-patient communication is too short.

Chapter 4 Application of Basic Communication Skills

(Communication with patients, members of patient's family, children's, teenagers, old people and people with different cultural backgrounds).
1. The importance of culture in the relationship between doctors and patients.
2. The characteristics of Eastern and Western culture and their influence on communication between doctors and patients.
3. The characteristics of Chinese culture and its influence on communication between doctors and patients.
4. The importance of communication with patients from different cultures backgrounds.
5. Attention in communication with patients.
6. Principles and characteristics of communication with family members of patients.
7. Principles and characteristics of communication with children and teenagers.

8. Principles and characteristics of communication with elderly patients.

Chapter 5 Special Cases in Communication

(Telling bad news, Reports of medical errors, Complaints, Adverse events).

1. The content of the lay.
2. The skill of the telling.
3. When and who to report bad news for patient, how to prepare for telling bad news.
4. Solutions and methods of medical negligence.
5. Definition and reporting procedures of adverse events.
6. Cross-culture telling.
7. Special group patients telling.

No civil capacity patients telling.

Telling in ICU.

Use of special medicines and medical materials telling.

Patient who has special disease telling.

Change the way of patient's live telling.

Chapter 6 Communication with Colleagues and Partner

1. Factors that influence communication ability.
2. The contents of reflection on oneself in communication.
3. The content of transfer in medical work.

Doctor with doctor.

Doctor with nurse.

Doctor with medical technician personnel.

Doctor with administrative personnel.

Doctor with logistics personnel.

PRACTICAL

Chapter 1 General Introduction

Watching movies: success and failure of doctor-patient communication.

Showing the public film, to introduce the role of good communication in the medical procedures.

Chapter 2 Basic Communication Skills-Inquiry and Medical History Collection

Role play—medical history collection.

One team with 3 students, playing "Doctor", "Patient" and "Observer", the doctor conducts an inquiry with the patient and collects history from the patient.

Chapter 3 Basic Communication Skills-Listening

Clinical practice-to observe how to communicate between the patient and senior doctors.

Medical environment of a hospital to observe how to communicate with doctors and patients (Department of internal medicine, surgery, obstetrics and gynecology, oncology and other departments, for patients and doctors in each department).

Chapter 4 Application of Basic Communication Skills

Presentation (essay): The importance of communication with patients from different cultures backgrounds.

1. Student's presentation, Teacher's assessment.

2. The importance of communication for patients with different cultural backgrounds.

Chapter 5 Role Play: Telling Bad News

One team with 3 students, playing "Doctor", "Patient" and "Observer", the doctor tells the bad news to patient.

Chapter 6 Cases Study

Cases studies, the contents include: meeting patients for the first time, diagnosis process, telling bad news, communication with patients'family members, and communication with medical team, and transfer in medical work.

MEDICAL STATISTICS

医学统计学

Chief Editors（主编）

Zhao Yang（赵杨） Nanjing Medical University（南京医科大学）

Lu Wenli（芦文丽） Tianjin Medical University（天津医科大学）

Deputy Chief Editor（副主编）

Bai Jianling（柏建岭） Nanjing Medical University（南京医科大学）

Editors（编委）（按姓氏拼音排序）

Bai Jianling（柏建岭） Nanjing Medical University（南京医科大学）

Lu Wenli（芦文丽） Tianjin Medical University（天津医科大学）

Peng Zhihang（彭志行） Nanjing Medical University（南京医科大学）

Wei Yongyue（魏永越） Nanjing Medical University（南京医科大学）

Yang Sheng（杨晟） Nanjing Medical University（南京医科大学）

Yi Honggang（易洪刚） Nanjing Medical University（南京医科大学）

Zhao Yang（赵杨） Nanjing Medical University（南京医科大学）

Course Description

Medical Statistics is the science dealing with the collection, analysis, interpretation and presentation of data generated in medical research. It applies the principles and methods of probability and mathematical statistics to handle the questions raised from clinical and preventive research.

By studying Medical Statistics, students will understand the fundamental definitions, principles and methods, and develop the ability to solve practical issues in clinical and preventive work. In the teaching practice of Medical Statistics, the teachers should follow the pathway as "actual medical question-measurement-variation and distribution-sampling error-statistical inference-interpretation and presentation" to develop the students'statistical thinking. The students should also develop the skills with statistical software to handle medical data so as to have a solid foundation for future medical practice and research.

Objectives

KNOWLEDGE

At the end of the course, the student shall be able to:

1. Understand the roles of statistics in medical research.
2. Understand the source of the uncertainty in the medical research.
3. Establish statistical thinking and know how to control the risk when making statistical inference.
4. Understand how to combine statistical evidence and medical knowledge to make conclusions in research.
5. Understand the statistical principles of parameter estimation and hypothesis testing.
6. Understand the statistical principles of research design.

SKILLS

At the end of the course, the student shall be able to:

1. Know how to analyze data using statistical software.
2. Know how to describe the data using tables, figures and statistics.
3. Know how to use the sampled data to make inference about the population.
4. Know how to select appropriate methods to analyze actual data.
5. Know how to design a medical research.
6. Know how to explain and present the statistical results.

Teaching and Learning Methods

Theory: Teaching Medical Statistics to undergraduate medical student is provided with the help of lectures and tutorials.

Practical: The students will practice the procedure of statistical computation by using public available software R.

Recommended Reference books

GR Norman, DL 2014. Streiner. Biostatistics, the Bare Essential [M]. 4th ed. Shelton: People's Medical Publishing House.

Schedule Table

Chapter	Contents	Presumptive hours
1	Introduction to Medical Statistics	1
2	Important definitions of Statistics	2
3	Description of Data	3
4	Gaussian Distribution	3
5	Sampling Error	2
6	Confidence Interval	1
7	Hypothesis Test	1
8	*t*-test	2
9	Analysis of Variance	3
10	Analysis of Categorical Data	3
11	Analysis of Ordinal Data	3
12	Linear Correlation and Regression	3
13	Research Design	3
14	Software I	3
15	Software II	3
	Total	36

Course Contents

THEORY

Chapter 1 Introduction to Medical Statistics

1. Definitions of Statistics, Biostatistics and Medical Statistics.
2. History of statistics.
3. Some helpful suggestions on how to learn statistics.

Chapter 2 Important Definitions of Statistics

1. Homogeneity and Heterogeneity.
2. Population, Individual and Sample.
3. Parameter and Statistic.
4. Random.
5. Quantitative\Categorical\Ordinal Data.
6. Probability.

7. Rare Events.

Chapter 3 Description of Data

1. Frequency Table and Figure.
2. Measures on Central Location: mean, median, mode, geometric mean.
3. Measures on Degree of Dispersion: range, inter-quartile range, variance, standard deviation, correlation of variation.
4. Rate, Ratio and Proportion.

Chapter 4 the Gaussian Distribution

1. History of Gaussian Distribution.
2. Characteristics of Gaussian Distribution.
3. Area Under the Gaussian Curve.
4. Standard Gaussian Distribution.
5. Application of Gaussian Distribution: (1) using Gaussian Distribution to calculate the proportions; (2) reference range; (3) quality control.

Chapter 5 Sampling Error

1. Definition.
2. Standard Error.
3. Sampling Distribution.
4. Central Limit Thereon.
5. *t*-distribution: (1) definition; (2) characteristics; (3) area under *t* curve.

Chapter 6 Confidence Interval

1. Definitions.
2. Confidence Interval of the Mean.
3. Confidence Interval of the Proportion.
4. Confidence Interval of the Difference of the Means.
5. Some Issues of the CI.

Chapter 7 Hypothesis Test

1. Aim of the Hypothesis Test.
2. Basic Idea of the Hypothesis Test.
3. Some Important Issues of the Hypothesis Test: (1) type I and II errors; (2) relationship between α and *P*; (3) relationship between hypothesis test and confidence interval.

Chapter 8 *t*–test

1. One Sample t-test.
2. *t*-test for Two Independent Samples.
3. *t*-test for Matched Samples.
4. *u* Test for Means.
5. Some Important Issues of *t*-test: (1) assumptions for t tests; (2) tests for equality of variances; (3) *t*'test when the variances are not equal between two groups.

Chapter 9 Analysis of Variance

1. The Inflation of Type I Error Rate for t Test When There Are More Than 2 Groups.
2. One-way ANOVA.
3. Two-Way ANOVA.
4. Pairwise Comparisons.
5. Some Important Issues of ANOVA: (1) assumptions for ANOVA; (2) tests for equality of more than 2 variances; (3) transformation of variables.

Chapter 10 Analysis of Categorical Data

1. *u*-test for One Proportion.
2. *u*-test for the Difference of Two Independent Proportions.
3. Pearson Chi-Square Test for 2*2 Tables.
4. Pearson Chi-Square Test for R*C Tables.
5. McNemar Test for Matched Samples.
6. Fisher's Exact Test.
7. Some Important Issues of Chi-Square Test.

Chapter 11 Analysis of Ordinal Data

1. Definitions of Non-Parametric Tests.
2. Wilcoxon Two Sample Ranksum Test.
3. Wilcoxon Signed Rank Test.
4. Kruskal-Wallis Test for More Than Two Groups.
5. Some Important Issues of Ranksum Test.

Chapter 12 Linear Correlation and Regression

1. Definitions of Linear Correlation and Regressions.
2. Scatter plots.
3. Pearson's Correlation Coefficient: (1) Formula; (2) z transformation; (3) Confidence Interval; (4) Hypothesis Test.
4. Equations of Linear Regression Model.
5. The Least Square Method.
6. Hypothesis Test for Regression Coefficients.
7. ANOVA for Regression.
8. Confidence Intervals for Linear Regression.
9. Relationship between Regression and Correlation.
10. Assumptions for Linear Regression.

Chapter 13 Research Design

1. Elements of Research Design.
2. Three Principles of Experimental Design: control; randomization; replication.
3. Sample Size.
4. Some Important Designs: (1) completely randomization design; (2) matched design; (3) randomized block design;
5. Some Important Issues of Research Design.

PRACTICAL

Chapter 14 Statistical Software I

1. Introduction to R Software.
2. Data Manipulation of R.

Chapter 15 Statistical Software II

R Commands for t-test/ANOVA/Chi-square test/Ranksum Test/Linear Correlation and Regression.