

SYSTEMIC PATHOLOGY

GOAL OF THE SYSTEMIC PATHOLOGY MODULE

To equip the student with a broad understanding of disease and a basis for rational medical practice.

GENERAL OBJECTIVES

This module aims to provide:

- The relation between general pathology and the dynamic basic sciences; and between systemic/organ pathology and clinical aspects of disease
- The ability to deduce tissue and organ changes from the basic principles of pathological processes
- The ability to recognize certain common types of morphological abnormality by naked eye examination
- The understanding of how a diagnosis is formulated by giving practice in deducing a diagnosis from a description of the morphology
- The ability to work out the clinical symptoms and signs produced by pathological abnormalities
- Some appreciation of the extent and limits of information which can be derived from examination of tissue

THEMES

Some of the sub-themes should be considered in conjunction with corresponding modules as indicated in *italics*.

1. Overview to Systemic Pathology: A Clinical Perspective
2. Cardiovascular System
3. White Cells, Lymph Nodes, Spleen and Thymus
4. Respiratory System
5. Gastrointestinal System
6. Liver, Biliary Tract and Pancreas
7. Urinary System; Male Reproductive System
8. Female Reproductive System
9. Endocrine System
10. Bones, Joints and Soft Tissue
11. *Nervous System*

SPECIFIC OBJECTIVES

At the end of this module, the student will be able:

THEME 1: OVERVIEW TO SYSTEMIC PATHOLOGY: A CLINICAL PERSPECTIVE

PA/sys/L1

- 1.1 to appreciate the central role of Pathology in clinical medicine
- 1.2 to conceptualize disease as disordered physiology (pathophysiology) as an approach to understanding the pathological mechanisms underlying disease and its clinical manifestations
- 1.3 to appreciate how clinical symptoms and signs provide clues to the underlying structural and functional abnormalities which in turn provide a rational basis for treatment

THEME 2: CARDIOVASCULAR SYSTEM

- 2.1 to appreciate the concept of cardiac failure and peripheral vascular failure (shock) contributing to circulatory failure
- 2.2 to discuss the causes, pathogenesis and outcome of cardiac failure
- 2.3 to describe the pathology of common cardiac diseases
- 2.4 to describe the pathology of common peripheral vascular diseases
- 2.5 to discuss the epidemiological aspects (frequency, trends, risk factors) and control (primary, secondary and tertiary prevention) of hypertension, coronary heart disease and cerebrovascular disease

**PA/sys/L2-6; P1;
T1 (2hr)**

Cross refer
PHA/sys/L1-5

THEME 3: WHITE CELLS, LYMPH NODES, SPLEEN & THYMUS

- 3.1 to appreciate that disorders of white cells may be classified into:
 - (a) proliferations (reactive or neoplastic) and
 - (b) leukopenias
- 3.2 to discuss briefly the reactive (inflammatory) proliferations of white cells and lymph nodes: leukocytosis and acute and chronic non-specific lymphadenitis
- 3.3 to explain the relationship and to compare and contrast between the various forms of neoplastic proliferations of white cells:
 - (a) lymphoid neoplasms (leukaemias, lymphomas);
 - (b) myeloid neoplasms (acute myelogenous leukaemia, myeloproliferative syndromes, chronic myeloproliferative disorders);
 - (c) histiocytoses (Langerhans Cell Histiocytosis)

**PA/sys/L7-8; P2;
T2 (2 hr)**

Cross refer
**Haematopathology
module (M3-M4)**

- 3.4 to describe the basic pathology of Hodgkin's disease and non- Hodgkin's lymphoma
- 3.5 to list the common causes of splenomegaly
- 3.6 to list the common tumours that can occur in the thymus; and to appreciate the clinicopathological significance of thymomas

THEME 4: RESPIRATORY SYSTEM

PA/sys/L9-12; P3;
T3 (2 hr)

- 4.1 to explain the pathophysiology of respiratory failure in terms of alveolar hypoventilation and ventilation-perfusion mismatch
- 4.2 to describe the pathology of common diseases that may affect the airways
- 4.3 to describe the pathology of common diseases that may cause impaired diffusion/parenchymal restriction
- 4.4 to name the common tumours arising in the lung and to describe the pathology of primary lung cancer
- 4.5 to list the common conditions of the pleura and describe their key pathological features

Cross refer
PHA/sys/L

THEME 5: GASTROINTESTINAL SYSTEM

PA/sys/L13-16;P4;
T4 (2 hr)

- 5.1 to appreciate the common clinical presentations of gastrointestinal disease with respect to selected common conditions
- 5.2 to describe the pathology of common diseases of the oral cavity and salivary glands
- 5.3 to describe the pathology of common diseases of the oesophagus
- 5.4 to describe the pathology of common diseases of the stomach
- 5.5 to describe the pathology of common diseases of the small and large intestines

Cross refer
PHA/sys/L

THEME 6: LIVER, BILIARY TRACT AND PANCREAS

PA/sys/L17-20;P5;
T5 (2 hr)

- 6.1 to appreciate the pathophysiology of syndromes of aberrant function in liver disease in terms of hepatocyte dysfunction, portal-to-systemic shunting or both
- 6.2 to describe the pathology of common diseases causing cholestasis
- 6.3 to describe the pathology of common diseases causing acute hepatitis and fulminant hepatic failure
- 6.4 to describe the pathology of common diseases causing chronic hepatitis and cirrhosis
- 6.5 to describe the pathology of focal or extrinsic diseases with variable manifestations in the liver
- 6.6 to distinguish the pathology of space-occupying lesions in the liver
- 6.7 to describe the pathology of common diseases of the pancreas (excluding diabetes mellitus)

<p>THEME 7: URINARY SYSTEM; MALE REPRODUCTIVE SYSTEM</p> <p>7.1 to discuss the pathophysiology of renal disease in terms of site of lesion and nature of pathogenetic mechanism</p> <p>7.2 to describe the pathology of common prerenal causes of renal disease</p> <p>7.3 to describe the pathology of common intrarenal conditions</p> <p>7.4 to describe the pathology of common postrenal causes of renal disease</p> <p>7.5 to describe the pathology of common diseases of the male reproductive system with particular reference to the prostate</p>	<p>PA/sys/L21-24; P6; T6 (2 hr)</p>
<p>THEME 8: BREAST; FEMALE REPRODUCTIVE SYSTEM</p> <p>8.1 to distinguish the pathology of non-neoplastic breast conditions in terms of their possible confusion clinically with cancer</p> <p>8.2 to describe the pathology of breast cancer</p> <p>8.3 to discuss the pathophysiology of common female reproductive tract disorder in terms of menstrual disorders and infertility</p> <p>8.4 to describe the pathology of common diseases of the female genital tract</p> <p>8.5 to describe the pathology of gestational trophoblastic disease</p>	<p>PA/sys/L25-27; P7-8; T7 (2 hr)</p> <p><i>Cross refer</i> PHA/sys/L</p>
<p>THEME 9: ENDOCRINE SYSTEM</p> <p>9.1 to discuss the pathophysiology of thyroid dysfunction in terms of hyperthyroidism, hypothyroidism, goitre, thyroid nodule, and abnormal thyroid function tests in a clinically euthyroid patient</p> <p>9.2 to describe the pathology of common diseases causing the various states of thyroid dysfunction listed in 9.1</p> <p>9.3 to describe the pathology of common diseases of the hypothalamus-pituitary gland</p> <p>9.4 to describe the pathology of common diseases of the parathyroid glands; and calcium metabolism</p> <p>9.5 to describe the pathology of common diseases of the adrenal glands</p> <p>9.6 to discuss diabetes mellitus in terms of</p> <ol style="list-style-type: none"> (i) the basic pathophysiological and clinical concept as a chronic metabolic disease (ii) pathogenesis and chronic complications (iii) epidemiology (iv) treatment 	<p>PA/sys/L28-32; P9; T8 (2 hr)</p> <p><i>Cross refer</i> PHA/sys/L</p>

THEME 10: BONES, JOINTS AND SOFT TISSUE

- 10.1 to categorize the spectrum of bone disorders according to their perceived biologic effects
- 10.2 to describe the pathology of common diseases associated with abnormal matrix, osteoclastic dysfunction and abnormal mineral homeostasis
- 10.3 to describe the pathology of fractures
- 10.4 to describe the pathology of osteonecrosis (avascular necrosis)
- 10.5 to describe the pathology of infections
- 10.6 to describe the pathology of common diseases of the joints
- 10.7 to describe the pathology of common tumours and tumour-like lesions of bone, joints and soft tissue

THEME 11: *NERVOUS SYSTEM*

PA/sys/L33-34;
T9 (2 hr)

Cross refer
NS module

IMPORTANT NOTE

Students should refer to the MEDnet for details on the following:

- (a) Overviews
- (b) Content
- (c) Lecture outlines
- (d) Practical classes
- (e) Tutorials
- (f) Study aids (review questions)