

PATHOLOGY

Instructions:

I (a) Pathology and microbiology shall be taught in relation to the concept of miasms as evolved by Samuel Hahnemann and further developed by JT Kent, H.A. Robert, J.H. Allen and other stalwarts, with due reference to Koch's postulate, correlation with immunity, susceptibility and thereby emphasizing homoeopathic concept of evolution of disease and cure;

(b) Focus will be given on the following points, namely:-

- (1) Pathology in relation with Homoeopathic Materia Medica.
- (2) Correlation of miasms and pathology.
- (3) Characteristic expressions of each miasm.
- (4) Classification of symptoms and diseases according to pathology.
- (5) Pathological findings of diseases; their interpretation, correlation and usage in the management of patients under homoeopathic treatment.

(c) To summarise, all the topics in the general and systemic pathology and microbiology should be correlated, at each juncture, with homoeopathic principles so that the importance of pathology in Homoeopathic system could be understood by the students.

A. Theory:

(a). General Pathology

1. Cell Injury and cellular adaptation
2. Inflammation and repair (Healing).
3. Immunity
4. Degeneration
5. Thrombosis and embolism
6. Oedema
7. Disorders of metabolism
8. Hyperplasia and hypertrophy
9. Anaplasia
10. Metaplasia
11. Ischaemia
12. Haemorrhage
13. Shock
14. Atrophy
15. Regeneration
16. Hyperemia
17. Infection
18. Pyrexia
19. Necrosis
20. Gangrene
21. Infarction
22. Amyloidosis
23. Hyperlipidaemia and lipidosi
24. Disorders of pigmentation
25. Neoplasia (Definition, variation in cell growth, nomenclature and taxonomy, characteristics of neoplastic cells, aetiology and pathogenesis, grading and staging, diagnostic approaches, interrelationship of tumor and host, course and management).
26. Calcification
27. Effects of radiation
28. Hospital infection

(b) Systemic pathology

In each system, the important and common diseases should be taught, keeping in view their evolution, aetio-pathogenesis, mode of presentation, progress and prognosis, namely:-

1. Mal-nutrition and deficiency diseases.
2. Diseases of Cardiovascular system
3. Diseases of blood vessels and lymphatics
4. Diseases of kidney and lower urinary tract
5. Diseases of male reproductive system and prostate

6. Diseases of the female genitalia and breast.
7. Diseases of eye, ENT and neck
8. Diseases of the respiratory system.
9. Diseases of the oral cavity and salivary glands.
10. Diseases of the G.I. system
11. Diseases of liver, gall bladder, and biliary ducts
12. Diseases of the pancreas (including diabetes mellitus)
13. Diseases of the haemopoetic system, bone marrow and blood
14. Diseases of glands-thymus, pituitary, thyroid, and parathyroid, adrenals, parotid.
15. Diseases of the skin and soft tissue.
16. Diseases of the musculo-skeletal system.
17. Diseases of the nervous system.
18. Leprosy

(c) Microbiology

(I) General Topics:

1. Introduction
2. History and scope of medical microbiology
3. Normal bacterial flora
4. Pathogenicity of micro-organisms
5. Diagnostic microbiology

(II) Immunology:

1. Development of immune system
2. The innate immune system
3. Non-specific defense of the host
4. Acquired immunity
5. Cells of immune system; T cells and Cell mediated immunity; B cells and Humoral immunity
6. The compliment system
7. Antigen; Antibody; Antigen – Antibody reactions (Anaphylactic and Atopic); Drug Allergies
8. Hypersensitivity
9. Immuno-deficiency
10. Auto-immunity
11. Transplantation
12. Blood group antigens
13. Clinical aspect of immuno-pathology.

(III) Bacteriology:

1. Bacterial structure, growth and metabolism
2. Bacterial genetics and bacteriophage
3. Identification and cultivation of bacteria
4. Gram positive aerobic and facultative anaerobic cocci, eg. Streptococci, Pneumococci.
5. Gram positive anaerobic cocci, e.g. peptostreptococci

6. Gram negative aerobic cocci, eg. neisseria, moraxella, kingella.
7. Gram positive aerobic bacilli, eg. corynebacterium, bacillus anthrax, cereus subtilis, mycobacterium tuberculosis, M. leprae, actinomycetes; nocardia, organism of enterobacteriac group.
8. Gram positive anaerobic bacilli, eg. genus clostridium, lactobacillus.
9. Gram negative anaerobic bacilli, eg. bacteroides, fragilus, fusobacterium.
10. Others like- cholerae vibrio, spirochaetes, leptospirae, mycoplasma, chlamydiae, rickettsiae, yersinia and pasturella.

(IV) Fungi and Parasites:

1. Fungi – (1) True pathogens (cutaneous, sub-cutaneous and systemic infective agents), (2) Opportunistic pathogens.
2. Protozoa – (1) Intestinal (Entamoeba histolytica, Giardia lamblia, Cryptosporidium parvum), (2) Urogenital (Trichomonas vaginalis) 3) Blood and Tissues (Plasmodium-species, Toxoplasma gondii, Trypanosoma species, leishmania species).
3. Helminths – (1) Cestodes (tapeworms)- Echinococcus granulosus, Taenia solium, Taenia saginata, (2) Trematodes (Flukes): Paragonimus westermani, Schistosoma mansoni, Schistosoma haematobium (3) Nematodes– Ancylostoma duodenale, Ascaris lumbricoides, Enterobius vermicularis, Strongyloides, Stercoralis, Trichuris trichiura, Brugia malayi, Draconculus medinensis, Loa loa, Onchocerca volvulus, Wuchereria bancroftii).

(V) Virology:

1. Introduction

2. Nature and classification of viruses

3. Morphology and replication of viruses

4. DNA viruses:

- (i) parvo virus
- (ii) herpes virus, varicella virus, CMV, EBV.
- (iii) hepadna virus (hepatitis virus)
- (iv) papova virus
- (v) adeno virus
- (vi) pox virus- variola virus, vaccinia virus, molluscum contagiosum etc.

5. RNA viruses:

(a) orthomyxo virus:

- (i) entero virus
- (ii) rhino virus
- (iii) hepato virus

(b) paramyxo virus- rubeola virus, mumps virus, Influenza virus etc.

(c) phabdo virus

(d) rubella virus (german measles)

(e) corona virus

(f) retro virus

(g) yellow fever virus

(h) dengue, chikungunya virus

(i) Miscellaneous virus:

- (i) arena virus

- (ii) corona virus
- (iii) rota virus
- (iv) bacteriophages

(VI) Clinical microbiology: (1) Clinically important micro organisms (2) Immunoprophylaxis, (3) Antibiotic Sensitivity Test (ABST)

(VII) Diagnostic procedures in microbiology: (1) Examination of blood and stool (2) Immunological examinations (3) Culture methods (4) Animal inoculation.

(VIII) Infection and Disease: (1) Pathogenicity, mechanism and control (2) Disinfection and sterilisation (3) Antimicrobial chemotherapy (4) Microbial pathogenicity

(d) Histopathology:

1. Teaching of histopathological features with the help of slides of common pathological conditions from each system.
1. Teaching of gross pathological specimens for each system.
2. Histopathological techniques, e.g. fixation, embedding, sectioning and staining by common dyes and stains.
3. Frozen sections and its importance.
4. Electron microscopy; phase contrast microscopy.

B. Practical or clinical:

- (1) Clinical and Chemical Pathology: estimation of haemoglobin (by acidometer) count of Red Blood Cells and White Blood Cells, bleeding time, clotting time, blood grouping, staining of thin and thick films, differential counts. blood examination for parasites. erythrocyte sedimentation rate.
- (2) Urine examination, physical, chemical microscopical, quantity of albumin and sugar.
- (3) Examination of Faeces: physical, chemical (occult blood) and microscopical for ova and protozoa.
- (4) Methods of sterilisation, preparation of a media, use of microscope. gram and acid fast stains. motility preparation. gram positive and negative cocci and bacilli. special stains for corynebacterium gram and acid fast stains of pus and sputum.
- (5) Preparation of common culture medias, e.g. nutrient agar, blood agar, Robertson's Cooked Meal media (RCM) and Mac conkey's media.
- (6) Widal test demonstration.
- (7) Exposure to latest equipment, viz. auto-analyzer, cell counter, glucometer.
- (8) Histopathology
 - (a) Demonstration of common slides from each system.
 - (b) Demonstration of gross pathological specimens.
 - (c) Practical or clinical demonstration of histopathological techniques, i.e. fixation, embedding.
 - (d) Sectioning, staining by common dyes and stain. frozen section and its importance.
 - (e) Electron microscopy, phase contrast microscopy.

C. Examination:

1. Theory:

1.1 Number of papers - 02

1.2 Marks: Paper I-100; Paper II-100

1.3 Contents:

1.3.1 Paper-I: Section A- General Pathology

Section B- Systemic Pathology

- 50 marks

1.3.2. Paper- II: Section A-

- 50 marks

• Bacteriology

- 25 marks

- Fungi and Parasites - 25 marks

Section B-

- Virology - 20 marks
- Clinical Microbiology and Diagnostic procedures - 10 marks
- Microbiological control and mechanism of pathogenicity - 10 marks
- General Topics
Immuno-pathology - 10 marks

2. Practical including viva voce or oral:

2.1. Marks: 100

2.2. Distribution of marks;

	<u>Marks</u>
2.2.1. Practicals	- 15
2.2.2. Spotting	- 20 (4 spottings)
2.2.3. Histopathological slides	- 10 (2 slides)
2.2.4. Journal or practical record	- 05
2.2.5. Viva voce (oral)	- 50

(Including 5 marks for interpretation of routine pathological reports)

Total

100

FORENSIC MEDICINE AND TOXICOLOGY