GENERAL PATHOLOGY

AIM:

At the end of the course, the student should be competent to:

Apply the scientific study of disease processes, which result in morphological and functional alterations in cells, tissues and organs to the study of pathology and the practice of dentistry.

OBJECTIVES:

Enabling the student

1. To demonstrate and analyze pathological changes at macroscopically and microscopically levels and explain their observations in terms of disease processes.
2. To integrate knowledge from the basic sciences, clinical medicine and dentistry, in the study of Pathology.
3. To demonstrate understanding of the capabilities and limitations of morphological pathology in its contribution to medicine, dentistry and biological research.
4. To demonstrate ability to consult resource materials outside lectures, laboratory and tutorial classes.

COURSE CONTENT

A. General Pathology

1. Introduction to Pathology
   - Terminologies
   - The cell in health
   - The normal cell structure
   - The cellular functions

2. Aetiology and Pathogenesis of Disease
   - Cell Injury
   - Types — Congenital
     - Acquired
   - Mainly Acquired causes of disease
     - (Hypoxic injury, chemical injury, physical injury, immunological injury)

3. Degenerations
   - Amyloidosis
   - Fatty change
• Cloudy swelling
• Hyaline change, mucoid degeneration

4. Cell death & Necrosis

• Apoptosis
• Def, causes, features and types of necrosis
• Gangrene - Dry, wet, gas
• Pathological Calcifications
  (Dystrophic and metastatic)

5. Inflammation

• Definition, causes types, and features
• Acute inflammation
  a) The vascular response
  b) The cellular response
  c) Chemical mediators
  d) The inflammatory cells
  e) Fate
• Chronic inflammation
• Granulomations inflammation

6. Healing

• Regeneration
• Repair
  a) Mechanisms
  b) Healing by primary intention
  c) Healing by secondary intention
  d) Fracture healing
  e) Factors influencing healing process
  f) Complications

7. Tbereulosis

• Epidemiology
• Pathogenesis
• Pathological features of Primary and secondary TB
• Complications and Pate

8. Syphilis

• Epidemiology
• Types and stages of syphilis
• Pathological features
• Diagnostic Criterion
• Oral lesions

9. Typhoid
• Epidemiology
  a) Pathogenesis
• Pathological features
• Diagnostic criterion

10. Thrombosis
• Definition, Pathophysiology
• Formation, complications & Fate of a thrombus

11. Embolism
• Definition
• Types
• Effects

12. Ischemia and Infraction
• Definition, etiology, types
• Infraction of various organs

13. Derangements of body fluids
• Odema — pathogenesis
  a) Different types

14. Disorders of circulation
• Hyperaemia
• Shock

15. Nutritional Disorders
• Common Vitamin Deficiencies

16. Immunological mechanisms in disease
• Humor & cellular immunity
• Hypersensitivity & autoimmunity
17. AIDS and Hepatitis

18. Hypertension
   - Definition, classification
   - Pathophysiology
   - Effects in various organs

19. Diabetes Mellitus
   - Def, Classification, Pathogenesis, Pathology in different organs

20. Adaptive disorders of growth
   - Atrophy & Hypertrophy, Hyperplasia, Metaplasia and Dysplasia

21. General Aspects of neoplasia
   - Definition, terminology, classification
   - Differences between benign and malignant neoplasms
   - The neoplastic cell
   - Metastasis
   - Aetiology and pathogenesis of neoplasia, Carcinogenesis
   - Tumour biology
   - Oncogenes and anti-oncogenes
   - Diagnosis
   - Precancerous lesions
   - Common specific tumours, Squamous papilloma & Carcinoma, Basal cell Carcinoma, Adenoma & Adenoca, Fibroma & Fibrosarcoma, Lipoma and liposarcoma

B. Systemic Pathology

22. Anaemias
   - Iron Deficiency anaemia, Megaloblastic anaemia

23. Leukaemias
   - Acute and chronic leukaemias, Diagnosis and clinical features

24. Diseases of Lymph nodes
   - Hodgkin’s disease, Non Hodgkins lymphoma, Metastatic carcinoma

• Lichen planus, Stomatitis, Leukoplakia, Squamous cell Carcinoma, Dental caries, dentigerous cyst, Ameloblastoma

26. Diseases of salivary glands
• Normal structure, Sialadenitis, Tumours

27. Common diseases of Bones
• Osteomyelitis, Metabolic bone diseases, Bone Tumours, Osteosarcoma, Ostiocalstoma, Giant cell Tumour, Ewing's sarcoma, Fibrous dysplasia, Aneurysmal bone cyst

28. Diseases of Cardiovascular system
• Cardiac failure
• Congenital heart disease - ASD, VSD, PDA
• Fallot's Tetrology
• Infective Endocarditis
• Atherosclerosis
• Ischaemic heart Disease

29. Haemorrhagic Disorders
• Coagulation cascade
• Coagulation disorders
  a) Platelet function
  b) Platelet disorders

Practicals
1. Urine - Abnormal constituents
• Sugar, albumin, ketone bodies

2. Urine - Abnormal constituents
• Blood, bile salts, bile pigments

3. Haemoglobin (Hb) estimation
4. Total WBC count
5. Differential WBC Count

6. Packed cell volume (PCV,) Erythrocyte Sedimentation Rate (ESR)

7. Bleeding Time & Clotting Time
8. Histopathology
   - Tissue Processing
   - Staining

9. Histopathology slides
   - Acute appendicitis, Granulation tissue, fatty liver

10. Histopathology slides
    - CVC lung, CVC liver, Kidney amyloidosis

11. Histopathology slides
    - Tuberculosis, Actinomycosis, Rhinosporidiosis

12. Histopathology slides
    - Papilloma, Basal cell Ca, Sq cell Ca

13. Histopathology slides
    - Osteosarcoma, Osteoclastoma, fibrosarcoma

14. Histopathology slides
    - Malignant melanoma, Ameloblastoma, Adenoma

15. Histopathology slides
    - Mixed parotid tumour, metastatic
    - Carcinoma Tymph Node