

SYLLABUS FOR Ph.D IN PERIODONTICS AND IMPLANTOLOGY

APPLIED ANATOMY

1. Development of the periodontium
2. Micro and macro structural anatomy and biology of the periodontal tissues
3. Age changes in the periodontal tissues
4. Anatomy of the periodontium
 - Microscopic and macroscopic anatomy
 - Blood supply of the periodontium
 - Lymphatic system of the periodontium
 - Nerves of the periodontium
5. TMJ, maxillae, mandible
6. Nerves of periodontics
7. Tongue, oropharynx
8. Muscles of mastication

PHYSIOLOGY

1. Blood
2. Respiratory system- respiratory disease which are a cause of periodontal disease. (periodontal medicine)
3. Cardiovascular system
 - a. Blood pressure
 - b. Normal ECG
 - c. Shock
4. Endocrinology hormonal influence on periodontium
5. Gastrointestinal system
 - a. Salivary secretion –composition, function, regulation
 - b. Reproductive physiology
 - c. Hormones
 - d. Family planning methods
6. Nervous system
 - a. Pain pathways
 - b. Taste – taste buds, primary taste sensation, pathways of sensation

BIOCHEMISTRY

1. Basics of carbohydrates, proteins, vitamins, proteins, enzymes, minerals
2. Diet, nutrition and periodontium
3. Biochemical tests and significance
4. Calcium, phosphorus

PATHOLOGY

1. Cell structure and metabolism
2. Inflammation and repair necrosis, degeneration
3. Immunity and hypersensitivity
4. Circulatory disturbance – oedema, hemorrhage, shock, thrombosis, embolism
5. Disturbances of nutrition
6. Diabetes mellitus
7. Cellular growth and differentiation, regulation
8. Lab investigations Blood

MICROBIOLOGY

1. General Bacteria
 - a. Identification of bacteria
 - b. Culture media and methods
 - c. Sterilization and disinfection
2. Immunology and infection
3. Systemic bacteriology with special emphasis on oral microbiology
4. Virology
 - a. General properties of viruses
 - b. Herpes, hepatitis, HIV virus
5. Mycology
 - a. Candidiasis
6. Applied microbiology
7. Diagnostic microbiology and immunology, hospital management

PHARMACOLOGY

1. General pharmacology
 - a. Definitions – pharmacokinetics with clinical applications, routes of administration including local drug delivery in periodontics
 - b. Adverse drug reactions and drug interactions
2. Detailed pharmacology of
 - a. Analgesics – opioid and nonopioid
 - b. Local anesthetics
 - c. Haematics and coagulants, anticoagulants
 - d. Vitamin D and calcium preparations
 - e. Antidiabetic drugs
 - f. Steroids
 - g. Antibiotics
 - h. Antihypertensives
 - i. Immunosuppressive drugs
 - j. Antiepileptic drugs
3. Brief pharmacology, dental use, adverse effects of
 - a. General anesthetics
 - b. Antipsychotics
 - c. Antidepressants

- d. Anxiolytic drugs
- e. Sedatives
- f. Antiepileptics
- g. Antihypertensives
- h. Antianginal drugs
- i. Diuretics
- j. Hormones
- k. Pre anethetics medications
- 4. Drugs used in bronchial asthma cough
- 5. Drug therapy of
 - a. Emergencies
 - b. Seizures
 - c. Anaphylaxis
 - d. Bleeding
 - e. Shock
 - f. Diabetic ketoacidosis
 - g. Acute addisonnian crisis
- 6. Dental pharmacology
 - a. Antiseptics
 - b. Astringents
 - c. Sialogogues
 - d. Disclosing agents
 - e. Antiplaque agents
- 7. Fluoride pharmacology

BIOSTATISTICS

- Introduction definition and branches of biostatistics
- Collection of data, sampling, types, bias, and errors
- Compiling of data – graphs, charts
- Measures of central tendency (mean, median and mode) standard deviation and variability
- Tests of significance (chi square test , t test , Z test)
- Null hypothesis

ETIOPATHOGENESIS

1. Classification of periodontal disease and conditions
2. Epidemiology of gingival and periodontal diseases
3. Defense mechanisms of gingiva
4. Periodontal microbiology
5. Basic concepts of immunity and inflammation
6. Microbial interactions with the host in periodontal diseases
7. Pathogenesis of plaque associated periodontal diseases
8. Dental calculus
9. Role of iatrogenic and other local factors
10. Genetic factors associated with periodontal diseases
11. Influence of systemic diseases and disorders of periodontium.

12. Role of environmental factors in the etiology of periodontal diseases
13. Stress and periodontal disease
14. Occlusion and periodontal disease
15. Smoking and tobacco in the etiology of periodontal diseases
16. AIDS and periodontium
17. Periodontal medicine
18. Dentinal hypersensitivity

CLINICAL AND THERAPEUTIC PERIODONTOLOGY AND ORAL IMPLANTOLOGY

I. GINGIVAL DISEASES

1. Gingival inflammation
2. Clinical features of gingivitis
3. Gingival enlargement
4. Acute gingival infections
5. Desquamative gingivitis and OMM diseases
6. Gingival Diseases in childhood

II. PERIODONTAL DISEASES

1. Periodontal pocket
2. Bone loss and patterns of bone destruction
3. Periodontal response to external forces
4. Masticatory system disorders
5. Chronic periodontitis
6. Aggressive periodontitis
7. Necrotizing ulcerative Periodontitis
8. Interdisciplinary approaches
 - a. Orthodontic
 - b. Endodontic
9. Periodontics considerations in periodontal therapy

III. TREATMENT OF PERIODONTAL DISEASES

A. History, examination, diagnosis. Prognosis, and treatment planning

1. Clinical diagnosis
2. Radiographic and other aids in the diagnosis of periodontal diseases
3. Advanced diagnostic techniques
4. Risk assessment
5. Determination of prognosis
6. Treatment plan
7. Rationale for periodontal treatment
8. General principles of anti- infective therapy with special emphasis on infection control in periodontal practice
9. Halitosis and its treatment
10. Bruxism and its treatment

B. Periodontal Instrumentation

1. Instrumentation
2. Principles of Periodontal instrumentation
3. Instruments used in different parts of mouth

C. Periodontal Therapy

1. Preparation of tooth surface
2. Plaque control
3. Antimicrobial and other drugs used in periodontal therapy and wasting diseases of the teeth
4. Periodontal management of HIV patients
5. Occlusion evaluation and therapy in the management of periodontal diseases
6. Role of orthodontics as an adjunct to periodontal therapy
7. Special emphasis on precautions and treatment for medically compromised patients
8. Periodontal splints
9. Management of dentinal hypersensitivity
10. Role of herbal medicines in preventive Periodontics and Periodontal therapeutics

D. Periodontal surgical phase – special on drug prescription

1. General principles of periodontal surgery
2. Surgical anatomy of periodontium and related structures
3. Gingival curettage
4. Gingivectomy technique
5. Treatment of gingival enlargements
6. Periodontal flap
7. Osseous surgery (resective and regenerative)
8. Furcation problem and its management
9. The periodontic endodontic continuum
10. Periodontic plastic and aesthetic surgery
11. Recent advances in surgical techniques

E. Future directions and controversial questions in periodontal therapy

1. Future directions for infection control
2. Research directions in regenerative therapy
3. Research directions in anti- inflammatory therapy
4. Future directions in measurement of periodontal diseases

F. Periodontal maintenance phase

1. Supportive periodontal treatment
2. Result of periodontal treatment

ORAL IMPLANTOLOGY

1. Introduction and historical review
2. Biological, clinical and surgical aspects of dental implants
3. Diagnosis and treatment planning
4. Implant surgery
5. Prosthetic aspects of implants
6. Diagnosis and treatment of peri-implant complication
7. Special emphasis on plaque control measures implant patients
8. Maintenance phase.

LIST OF RECOMMENDED TEXT BOOKS FOR REFERENCE SECTION

1. Carranza's Clinical Periodontology - 8th, 9th, 10th, 12th editions
2. Jan Lindhe – Clinical Periodontology and Implant Dentistry – 6th edition
3. Carl Misch – Contemporary Implant Dentistry – 3rd edition
4. Schroeder - Periodontium
5. Genco and Cohen - Contemporary Periodontics
6. Grant, Stern and Listgarten – Periodontics
7. Polson – Periodontal Regeneration current concepts
8. Page and Schroeder – Periodontal diseases
9. Kenneth Kornman – Fundamentals of Periodontics
10. Wilson and Kornman – Advances in Periodontics