PERIODONTOLOGY

INTRODUCTION

Periodontics is the clinical specialty of dentistry that is concerned with the prevention, diagnosis, and treatment of functional and structural diseases of supporting tissues of teeth. The supporting tissues are known as the periodontium, which includes the gingiva, alveolar bone, cementum, and the periodontal ligament.

Upon completion of this subject, student should be able to:

* Conduct a complete extra-oral and intraoral soft tissue examination and differentiate normal from pathological gingival and periodontal conditions. (P4,C3)
* Apply the knowledge of diseases of periodontium, identify actual and potential problems along with etiological and contributing factors and arrive at an appropriate diagnosis for the complaint. (C3)
* Outline proper treatment plan and assess the status of periodontal health of a patient during all phases of treatment and make appropriate changes as and when needed for good oral hygiene maintenance. (C4,C6)
* Carry out current treatment modalities for the periodontal patient and formulate individualized treatment planning based on patient needs. (C3,A4)
* Demonstrate proper use of instruments and materials required for periodontal treatment and maintenance. (P4)
* Show continual desire to update and follow the recent trends in periodontal disease and their management. (A3)
Syllabus

• **The Normal Periodontium**
  Gingiva – Macroscopic, microscopic features & clinical relationships – PDL, Cementum, alveolar bone – microscopic features, Aging

• **Classification and Epidemiology of Periodontal Diseases**
  Classification of Diseases and Conditions Affecting the Periodontium - Epidemiology of Gingival and Periodontal Diseases – Indices – Prevalence & Incidence of periodontal diseases

• **Periodontal Pathology**
  – Periodontal Diseases - The Periodontal Pocket - Bone Loss and Patterns of Bone Destruction -Periodontal Response to External Forces - Chronic Periodontitis - Necrotizing Ulcerative Periodontitis - Aggressive Periodontitis - Pathology and Management of Periodontal Problems in Patients with HIV Infection

• **Etiology of Periodontal Diseases**
  Periodontal Pathogenesis - The Role of Dental Calculus and Other Predisposing Factors - Microbiology of Periodontal Disease - Genetic Factors and Periodontal Disease - Smoking and Periodontal Disease

• **Relationship between Periodontal Diseases and Systemic Health**
  Influence of Systemic Disorders on the Periodontium& Impact of Periodontal Infection on Systemic Health - Oral Malodor

• **Treatment of Periodontal Diseases**
  Diagnosis, Prognosis and Treatment Plan - Clinical Diagnosis - Radiographic Aids in the Diagnosis of Periodontal Diseases - Clinical Risk Assessment - Determination of Prognosis - Treatment Plan - Rationale for Periodontal Treatment - Periodontal Treatment of Medically Compromised Patients - Periodontal Treatment of the Female Patient - Periodontal Treatment of Older Adults - Treatment of Aggressive and Atypical Forms of Periodontitis - Treatment of Periodontal Emergencies - Treatment of Acute Gingival Diseases - Treatment of the Periodontal Abscess
• **Nonsurgical Therapy**
  Phase 1 Periodontal Therapy - Plaque Control for the Periodontal Patient – Oral physiotherapy - Scaling and Root Planing - Sonic and Ultrasonic Instrumentation and Irrigation – Antimicrobial Agents - Adjunctive Role of Orthodontic Therapy - The Periodontic-Endodontic Continuum

• **Surgical Therapy**

• **Oral Implantology**

• **Supportive Treatment and Results of Treatment**
  Supportive Periodontal Therapy - Results of Periodontal Treatment - Results of Implant Treatment
Learning outcomes for each Topic:

1. Normal Periodontium
   - List 4 normal structures of periodontium (C1)
   - Recall 6 clinical characteristics of normal gingiva (C1)
   - Discuss the relation between microscopic and macroscopic features (C2)
   - Describe the various age changes in periodontal structures (C2)

2. Classification and clinical characteristics of gingival & periodontal diseases
   - Classify gingival & periodontal diseases (A4)
   - Describe various characteristics of gingival diseases (C2)
   - Apply clinically the various characteristics features pertaining to gingival disease (C3)
   - Recognize atleast 5 clinical features of periodontal diseases (P1)
   - Differentiate gingival and periodontal disease (C4)

3. Plaque and microorganisms in periodontal diseases
   - Define plaque (C1)
   - Describe the theories of plaque formation (C2)
   - Explain the mechanism of plaque maturation (C2)
   - List 5 microorganisms pertaining to periodontal disease (C1)
   - Classify microorganism based on Socransky classification (A4)
   - Explain the virulence factors of each microorganism (C2)

4. Calculus and other predisposing factors in periodontal disease
   - Define calculus (C1)
   - Describe the mechanism of calculus formation (C2)
   - List 6 predisposing factors for periodontal diseases (C1)
   - Recognize calculus and other predisposing factors clinically (P1)

5. Mechanical and chemical plaque control
   - List any 5 mechanical and chemical plaque control measures (C1)
   - Explain the mechanism of mechanical & Chemical plaque control (C2)
   - Demonstrate 3 brushing techniques (P4)
   - Execute proper interdental cleansing method based on patient requirements (P4)
   - Advocate correct mechanical & plaque control measures to the patient (A5)

6. Basic instruments & instrumentation in periodontics
   - Identify various instruments used in periodontics (C1)
   - Explain different operator positions, grips and grasp in periodontal instrumentations (C2)
   - Demonstrate various operatory positions along with proper finger rests (P4)
   - List 3 hand instruments used in periodontics (C1)
   - Execute scaling procedures during patient treatment (P4)
7. **Periodontal case sheet**
   Communicate with the patient and write a detailed case history (A1)
   Respond positively to the patient’s complain (A2)
   Listen carefully and record all the relevant history (A1)
   Recognize various clinical features and record it in the case sheet (P1)
   Outline the various reasons for the diagnosis (C4)
   Formulate proper diagnosis and treatment plan (A4)

8. **Prognosis & treatment plan**
   List 5 types of prognosis (C1)
   Explain the reason for proposed prognosis (C2)
   Develop exact treatment plan (C5)
   Rank various treatment options based on prognosis (A4)
   Adjust treatment plans based on patient requirements (A4)

9. **Clinical & radiographic diagnostic procedures**
   Identify all the relevant clinical findings (C1)
   Demonstrate various clinical evaluation procedures (P4)
   Explain the pathogenesis of various disease progression (C2)
   Evaluate radiographic findings (C6)

10. **Advanced diagnostic techniques in periodontics**
    Identify various advanced diagnostic methods (C1)
    Describe the principles behind various advanced diagnostic techniques (C2)
    List 7 recent advanced chair side diagnostic techniques (C1)
    Explain the frequently used chair side diagnostic techniques (C1)

11. **Risk assessment**
    Categorize various risk assessments (C4)
    List 3 risk factors (C1)
    Explain in detail about various risk assessments (C2)
    Use these assessments during the treatment (C3)

12. **Gingival enlargement**
    Define gingival enlargement (C1)
    List 5 major reasons for gingival enlargements (C1)
    Explain in detail about the pathogenesis in gingival enlargement (C2)
    Differentiate various types of gingival enlargements (C4)

13. **Gingival diseases in childhood**
    List 3 common gingival diseases in children (C1)
    Explain the various gingival diseases in children (C2)
    Differentiate normal gingiva from gingival diseases in children (C4)
    Recognize various clinical features of gingivitis (P1)

14. **Acute gingival diseases**
    Name 5 acute conditions of gingival and periodontal diseases (C1)
    Identify the etiology for each acute gingival diseases (C1)
    Describe the clinical features of acute gingival diseases (C2)
    Categorize different treatment procedures for all acute conditions of gingival (C4)
15. **Chronic Periodontitis**
   - Identify the etiological factors for chronic Periodontitis (C1)
   - List 3 microorganism concerned with chronic Periodontitis (C1)
   - Describe various clinical & radiographic features of chronic Periodontitis (C2)
   - Outline various treatment plan for chronic Periodontitis (C4)

16. **Aggressive Periodontitis**
   - Classify aggressive Periodontitis (A4)
   - Explain the microbial etiology of aggressive Periodontitis (C2)
   - Discuss the clinical and radiographic features of aggressive Periodontitis (C2)
   - Outline the treatment modalities (C4)

17. **Periodontal pockets**
   - Classify periodontal pockets (A4)
   - Explain the pathogenesis of periodontal pockets (C2)
   - Describe the contents and wall of periodontal pockets (C2)
   - Demonstrate the clinical presence of periodontal pocket (P4)
   - Outline all possible treatment modalities of periodontal pocket (C4)

18. **Bone loss and patterns of bone destruction**
   - Define various bone loss patterns (C1)
   - List 5 different bone changes in periodontal diseases (C1)
   - Classify 3 different intrabony defects (A4)
   - Differentiate various bone loss patterns radiographically (C4)

19. **Periodontal response to external forces**
   - Classify trauma from occlusion (A4)
   - Differentiate traumatic occlusion from trauma from occlusion (C4)
   - Explain different stages of trauma from occlusion (C2)
   - Illustrate primary and secondary trauma from occlusion (C3)

20. **Periodontal management of medically compromised patients & Older adults**
   - List 5 major systemic disease that has its impact on periodontium (C1)
   - Explain the management of patients with cardiovascular problems (C2)
   - Discuss about pregnancy and its implications (C2)
   - Describe other potential systemic diseases and its effective management (C2)
   - Name 5 changes in periodontium of older adults along with their management (C1)

21. **Smoking and periodontal disease**
   - Classify smokers (A4)
   - Explain the effects of smoking on periodontal structures (C2)
   - Communicate with patients about the ill effects of smoking (A2)
   - Plan smoking cessation programs based on the accepted guidelines (C5)

22. **Halitosis**
   - Identify the etiology for halitosis (C1)
   - List 5 compounds involved in halitosis (C1)
Discuss the pathogenesis of halitosis (C2)
Demonstrate various methods to manage halitosis (P4)

23. **Periodontal treatment of female patients**
Describe the different stages and changes in female patients (C2)
Outline the periodontal manifestations and their management (C4)
Explain the drawbacks in use of oral contraceptives and its management (C2)
Differentiate clinically all the gingival changes in the female patients (C4)

24. **Impact of periodontal disease on systemic health**
Explain the pathobiology of Periodontitis (C2)
Recall the focal infection theory (C1)
Outline the effects of periodontal disease on various systemic conditions (C4)
Describe about periodontal disease and systemic health in clinical practice (C2)

25. **Periodontal surgery – basic principles**
Define flaps (C1)
Classify flaps (A4)
List 3 major incision used in flap elevation (C1)
Explain the rationale for periodontal surgery (C2)
Describe various suturing materials and methods (C2)

26. **Periodontal surgery: Gingival surgical procedures**
Name 5 gingival surgeries (C1)
Explain all gingival procedures (C2)
Apply various surgical techniques (C3)
Compare all the surgical techniques pertaining to gingival tissues (C4)

Complete curettage procedure under guidance (P4)

27. **Periodontal surgery: Pocket treatment procedures**
Outline various pocket treatment surgeries (C4)
Explain in detail about various pocket treatment procedures (C2)
Differentiate pocket reduction from pocket elimination procedures (C4)
Apply the knowledge of periodontal pocket surgery clinically (C3)

28. **Periodontal surgery: Osseous resectivesurgical procedures**
Classify osseous surgery (A4)
Explain the various terminologies used in resective surgery (C2)
List 4 steps in osseous respective surgery (C1)
Describe the indications and outcomes of resective osseous surgery (C2)
Give examples for the modifications in resective osseous surgery (C2)

29. **Periodontal surgery: Osseous reconstructive procedures**
Classify materials used in reconstructive surgery (A4)
Explain the role of different techniques in reconstructive surgery (C2)
Apply the knowledge during the treatment plan using advanced surgical procedures (C3)
Outline the effectiveness of osseous reconstructive surgeries (C4)

30. **Periodontal surgery: Perio-plastic surgical procedures**
Define mucogingival and periplastic surgery (C1)
Outline all the peri-plastic procedures (C4)
Classify recession (A4)
Discuss the various perioplastic procedures followed in periodontics (C2)
Use the basic knowledge of perioplastic surgeries while drafting treatment plan (C3)
Explain the indications, outcomes and complications of perioplastic procedures (C2)

31. Periodontal surgery: Furcation involvement and its management
Classify furcation involvement (A4)
Differentiate furcation defect from furcation involvement (C4)
Outline different treatment possibilities for furcation involvement (C4)
Propose proper treatment plan based on the knowledge of furcation involvement (C5)

32. Implants
Differentiate peri-implant structure from natural periodontal structures (C4)
List 2 methods of implant placement surgeries (C1)
Explain osseointegration (C2)
Categorize various treatment possibilities using implants (C4)
Execute basic skills in managing peri-implant mucositis (P4)
Design an effective maintenance strategy for implant patients (C5)

33. Inter-disciplinary periodontics
Describe the role of periodontist in various interdisciplinary procedures (C2)
Explain the effectiveness of periodontal therapy during orthodontic treatment. (C2)
Outline the role of periodontist in prosthodontics treatment sequence (C4)
Define the periodontal treatment outcome in an endoperio lesions (C1)
Name 3 possible inter-relationship treatment possibilities (C1)

34. Periodontal maintenance & supportive therapy
Classify post treatment patients (A4)
Design a flowchart for maintenance therapy (C5)
Practice proper post treatment management (P3)
Group patients based on post treatment classification (A4)