YENEPOYA UNIVERSITY

Deralakatte, Mangaluru -575018

REGULATIONS AND CURRICULUM GOVERNING POSTGRADUATE PROGRAM (MDS) IN PERIODONTOLOGY

(CURRICULUM – EFFECTIVE FROM 2008-09)

ATTESTED
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Ref: No.YU/REG/ACA/1-ACM/2008 10.07.2008

NOTIFICATION

Sub: Syllabus for the BDS and MDS

Ref: Resolution of the Academic Council at its 1st Academic Council meeting held on 10.07.2008, vide agenda - 1

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The Academic Council at its 1st meeting held on 10.07.2008 and subsequently the Board of Management at its 4th meeting held on 30.08.2008 have resolved to approve the syllabus as recommended by the DCI and followed for the BDS and MDS students admitted for the academic year 2008-2009.

This notification is issued for implementation with effect from the academic year 2008-2009.

REGISTRAR

To:

The Principal - YDC

Copy to:

1. Controller of Examinations
2. Academic Section

Contents

OBJECTIVES

The following objectives are laid out to achieve the goals of the course

KNOWLEDGE

- Discuss historical perspective to advancement in the subject proper and related topics.
- Describe etiology, pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population
- Familiarize with the biochemical, microbiologic and immunologic genetic aspects of periodontal pathology
- Describe various preventive periodontal measures.
- Describe various treatment modalities of periodontal disease from historical aspect to currently available ones.
- Describe interrelationship between periodontal disease and various systemic conditions
- Describe periodontal hazards due to iatrogenic causes and deleterious habits and prevention of it
- Identify rarities in periodontal disease and environmental/ Emotional determinates in a given case.
- Recognize conditions that may be outside the area of his specialty/ competence and refer them to an appropriate Specialist
- Decide regarding non-surgical or surgical management of the case
- Update him by attending course, conferences and seminars relevant to Periodontics or by self learning process
- Plan out/ carry out research activity both basic and clinical aspects with the aim of publishing his work in scientific journals
- Reach to the public to motivate and educate regarding periodontal disease, its prevention and consequences if not treated
- Plan out epidemiological survey to assess prevalence and incidence of early onset periodontitis in Indian population (Region Wise)

- Shall develop knowledge, skill in the science and practice of Oral Implantlogy
- Shall develop teaching skill in the field of Periodontology and Oral Implantlogy.

SKILLS

- Take a proper clinical history, thorough examination of intra orally, extra orall, medical history evaluation, advice essential diagnostic procedures and interpret them to come to a reasonable diagnosis.
- Effective motivation and education regarding periodontal disease and maintenance after the treatment
- Perform both non- surgical and education regarding periodontal disease and maintenance after the treatment
- Perform both non-surgical and surgical procedures independently
- Provide basic life support service (BLS), recognize the need for advance life support and the immediate need for that.
- Human values, Ethical practice to communication abilities
- Adopt ethical principles in all aspects of treatment modalities; Professional honesty & integrity are to be fostered. Develop Communication skills to make awareness regarding periodontal disease. Apply high moral and ethical standards while carrying out human or animal research. Be humble, accept the limitations in his knowledge and skill and ask for help from colleagues when needed. Respect patient's rights and privileges, including patient's right to information and right to seek a second opinion.

COURSE CONTENTS:

PAPER I: 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
    - Macroscopic and microscopic anatomy
    - Blood supply of the Periodontium
    - Lymphatic system of the periodontium
    - Nerves of the periodontium
5. Temporomandibular joint, Maxillae and Mandible
6. Nerves of Periodontics
7. Tongue, oropharynx
8. Muscles of mastication

PHYSIOLOGY

1. Blood
2. Respiratory system – A knowledge of the respiratory diseases which are a cause of periodontal disease (Periodontal medicine)
3. Cardiovascular system
    - Blood pressure
    - Normal ECG
    - Shock
4. Endocrinology- hormonal influences on the Periodontium
5. Gastrointestinal system
    - Salivary secretion – composition, function and regulation
    - Reproductive physiology
    - Hormones- Actions and regulations, role in periodontal disease
    - Family planning methods

6. Nervous system
    - Pain pathways
    - Taste – taste buds, primary taste sensation & pathways for sensation

BIOCHEMISTRY

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

PATHOLOGY

Cell structure and metabolism

1. Inflammation and repair, necrosis and degeneration
2. Immunity and hypersensitivity
3. Circulatory disturbances – edema, hemorrhage, shock , thrombosis, embolism, infarction and hypertension
4. Disturbances of nutrition
5. Diabetes Mellitus
6. Cellular growth and differentiation, regulation
7. Lab investigations
8. Blood

MICROBIOLOGY

1. General bacteriology
    - Identification of bacteria
    - Culture media and methods
    - Sterilization and disinfection
2. Immunology and Infection

3. Systemic bacteriology with special emphasis on oral microbiology – staphylococci, genus actinomyces and filamentous bacteria and actinobacillus actinomycetum comitans
4. Virology
    - General properties of viruses
    - Herpes, Hepatitis virus, HIV virus
5. Mycology
    - Candidasis
6. Applied microbiology
7. Diagnostic microbiology and immunology, hospital infections and management

PHARMACOLOGY

1. General pharmacology

- Definitions – Pharmacokinetics with clinical applications, routes of administration including local drug delivery in Periodontics
- Adverse drug reactions and drug interactions

2. Detailed pharmacology

- Analgesics – Opoid and Non- opoid
- Local anesthetics
- Haematinics and coagulants, Anti coagulants
- Vit D and Calcium preparations
- Antidiabetic drugs
- Steroids
- Antibiotics
- Antihypertensive
- Immunosuppressive drugs and their effects on Oral tissues
- Antiepileptic drugs

3. Brief pharmacology, Dental use and adverse effects of

- General anesthetics
- Antipyschotics

- Antidepressants
- Anxiolytic drugs
- Sedatives
- Antiepileptic drugs
- Antihypertensives
- Antianginal drugs
- Diuretics
- Hormones
- Pre- anesthetic medication

4. Drugs used in Bronchial Asthma
5. Drug therapy of
- Emergencies
- Seizures
- Anaphylaxis
- Bleeding
- Shock
- Diabetic ketoacidosis
- Acute addisonian crisis
6. Dental pharmacology
- Antiseptics
- Astringents
- Sialogogues
- Disclosing agents
- Antiplaque agents

7. Fluoride pharmacology

BIOSTATICS

1. Introduction, definition and branches of biostatics
2. Collection of data, sampling, types, bias and errors
3. Compiling data-graphs and charts
4. Measures of central tendency (mean, median, mode), standard deviation and variability
5. Tests of significance (chi square test and Z-test)
6. Null hypothesis

PAPER II

ETIOPATHOGENESIS

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

PAPER III

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 Oral mucous membrane 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

- orthodontic
- Endodontic

9. Periodontic 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 aids
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 pockets
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 the mouth

C. Periodontal therapy

1. Preparation of tooth surface
2. Plaque control
3. Anti- microbial and other drugs used in periodontal therapy and wasdting diseases of teeth
4. Periodontal management of HIV infected patients
5. Occlusal 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

D. Periodontal surgical phase – special emphasis 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 esthetic 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. Future in anti- inflammatory therapy
4. Future directions in measurement of periodontal diseases

F. Periodontal maintenance phase

1. Supportive periodontal treatment
2. Results of periodontal treatment

IV 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 dental implants
6. Diagnosis and treatment of Peri-implant complications
7. Special emphasis on plaque control measures
8. Maintenance phase

V. MANAGEMENT OF MEDICAL EMERGENCIES IN PERIODONTAL PRACTICE

Teaching/ learning Activities

- **Seminars :** A minimum of 15 seminars to be presented by each student during the P.G course (atleast 5 seminars per year)
- **Journal Clubs:** A minimum of 25 journal articles to be reviewed by each student during the P.G course
- **Interdepartmental Seminars:** Each P.G student should present atleast 1 seminar in an Interdepartmental meeting during the P.G course. Such meetings may be held atleast once every month
- **Library Assignment:** one to be presented at the end of 18 months of the course

ACADEMIC ACTIVITIES:

I YEAR

Submission of synopsis for Dissertation – within 6 months from the start of the course

Library Assignment – to be submitted at the end of 1 year

II YEAR

Scientific paper presentation at the conferences

III YEAR

Scientific paper/ poster presentation at the conferences

Submission of Dissertation – 6 months before completion of III year

SKILLS:

First year

Pre- clinical work

Dental

1. Practice of Incisions and suturing techniques on the typhodont models
2. Fabrication of Bite guards and splints
3. Occlusal adjustments on the casts mounted on the articulator
4. X- ray techniques and interpretation
5. Local anesthetic techniques

Medical

1. Basic diagnostic microbiology and immunology, collection and handling of sample, culture techniques
2. Basic understanding of immunological diseases
3. Interpretation of various biochemical investigations
4. practical training and handling medical emergencies and basic life support devices
5. Basic biostatistics – Surveying and Data analysis

Clinical work

1. Applied periodontal indices- 10 CASES
2. Scaling and Root planing (SRP)
    a. Hand- 40 CASES
    b. Ultrasonic – 40 CASES
3. Curettage – 10 CASES
4. Gingivectomy – 20 CASES
5. Gingivoplasty – 10 CASES

Second year

1. Clinical work – 10 CASES

2. Case history and treatment planning – 10 CASES
3. Local drug delivery techniques
4. Periodontal surgical procedures:
    - Pocket therapy
    - Muco- gingival surgeries
    - Implants (2 implants)
    - Management of perio endo problems
5. Occlusal adjustments – 10 CASES
6. Perio splints – 10 CASES

Third year

Clinical work

1. Regenerative techniques
   - using various graft and barrier membranes
2. Record, maintenance and follow up of all treated cases including implants

Assessment Examinations: - In addition to the regular evaluation, Log book etc., Assessment examination should be conducted once every 6 months & progress of the student monitored

Note:

Submission of Synopsis for Dissertation should be done within 6 months of the commencement of the course. Submission of 2 copies of Library Assignment at the end of 1 and 2nd year. Submission of pre- clinical work as scheduled Submission of Dissertation – 6 months before completion of 3 year Maintenance of Work Diary/ Log book as prescribed by RGUHS.

MONITORING OF LEARNING PROCESS

It is essential to monitor the learning progress to each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring to be done by the staff of the department based on the participation of students in various teaching/ learning activities. It may be structured and assessment be done using checklists that assess various aspects.

SCHEME OF EXAMINATION

A. Theory : 300 Marks

Written examination shall consist of 4 question papers each of 3 hours duration. Total marks for each paper will be 100. Paper I, II, III shall consist of 2 long questions carrying 20 marks each and 6 short essay questions each carrying 10 marks. Paper IV will be on essay. Questions on recent advances may be asked in any or all papers. Distribution of topics for each paper will be as follows.

Paper I (75 marks): Applied Basic Sciences: Applied Anatomy, Physiology, & Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics.

Paper II (75 marks): Normal Periodontal structure , Etiology & pathogenesis of periodontal diseases, epidemiology as related to Periodontics

Paper III (75 marks): Periodontal diagnosis, therapy & Oral Implantlogy

Paper IV (75 marks): Essay (with emphasis on recent advances in Periodontics)

B. Practical / Clinical Examination: 200 Marks

The clinical examination shall be of 2 days duration

1st day

Case discussion

- Long case – 1

- Short case – 1

Periodontal surgery- Periodontal Flap surgery on a previously prepared case in one quadrant of the mouth after getting approval from the examiners

2nd day

Post surgical review and discussion of the case treated on the 1st day Presentation of Dissertation and discussion. All the examiners shall participate in all the aspects of clinical examinations/ Viva Voce.

Distribution of marks for clinical examinations (recommended)

a) Long case discussion -	50
b) Short cases -	50
c) Periodontal surgery-	75
d) Post- operative review-	25
TOTAL	**200**

C. VIVA VOCE: - 100 MARKS

i. Viva –voce examination: 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of the course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy/ Thesis Presentation: 20 marks

A topic is given to each candidate in the beginning of clinical examination. He/ she is asked to make a presentation on the topic for 8-10 minutes.