

# DM Endocrinology

## **SYLLABUS:**

A three years training period designed to meet the minimum requirements for training in Endocrinology prior to certification.

## **Course and Curriculum of DM Endocrinology & Metabolism:**

1. Basic Sciences as related to Clinical Endocrinology:
  - a. Hormone receptors / receptor biology
  - b. Genetics in Endocrinology
  - c. Molecular biology
  - d. Hormonal assays
2. Disorder of growth and sexual differentiation
3. Endocrine disorders in childhood and adolescence
4. Diabetes Mellitus
5. Hypothalamo – pituitary disorders
6. Thyroid disorders
7. Reproductive disorders and problems of menopause
8. Bone and mineral metabolism
9. Adreno-cortical and adreno-medullary disorders
10. Metabolic disorders (lipids, carbohydrates and protein metabolism related disorders, including inborn errors of metabolism).

All the candidates should be involved full-time in the direct care of the patients admitted to the endocrine services as resident staff. This will include taking a complete history, performing a comprehensive examination, ordering appropriate investigations and interpreting results. Additionally residents will be required to attend outpatient endocrine clinics where consultants will be available for on spot consultations. The OPD should be at least three times a week. The residents will be expected to maintain a log book of seminars and journal clubs presented by them, and interesting cases (at least 20) which they have worked up in detail, and procedures performed during their tenure of 3 years. 1

## **Clinical / Laboratory Research:**

Residents should be provided a 3 month exposure to hormone assays and clinical biochemistry lab in the Department of Endocrinology or in the central laboratory facilities in the institution so as to provide insight and hands on training in hormone assays and other laboratory techniques. The candidate should author 1 research paper and at least 2 case reports in indexed publications, ideally as a first author.

## **Seminars / Journal clubs / Endocrine grand rounds:**

Once a week journal club in the department Once a week seminar in the department Divide the entire course into 6 semesters: diabetes, thyroid metabolic bone disease, reproductive endocrinology and pediatric endocrinology, adrenal pituitary and emergencies. Dedicate the seminars in each semester

exclusively to one area. Hence, in three years all the major topics will be covered. There can be a six-monthly assessment to assess theoretical knowledge in the topics covered in this area. All effort must be made by departments to ensure that each resident attends at least 1 national conference each in endocrinology and diabetes.

#### **Training in allied specialities:**

**Endocrine Radiology:** At least fortnightly meetings with Department of Radiology. These meetings will be conducted to discuss imaging, conventional and CT, MRI, or patients seen in the OPD and in-patient service.

#### **Nuclear Medicine:**

The residents will be given training in the principles of scanning of various endocrine organs and interpretation of isotope scans. Additionally, regular weekly conferences should be scheduled with the nuclear medicine department where faculty and the resident staff should discuss interesting scans of the previous week.

#### **Training in pathology:**

It is primarily aimed at providing trainee insight into the area of endocrine-pathology such that the trainee will keep himself updated on emerging methods and trends in endocrine pathology.

#### **Molecular biology courses:**

It would be appropriate to provide the resident a one week exposure to molecular techniques as relevant to endocrinology. Procedures such as DNA extraction, PCR, RFLP, Southern blots and chromatography should be explained to the candidates.

#### **Medical statistics and research methodology:**

A 2-week course (15 hours) in medical statistics is mandatory. This is to acquaint student with the principles of statistics and analysis of data in currently accepted scientific way. The course should be organized in collaboration with department of biostatistics.

#### **DISSERTATION:**

The candidates registered for D.M. would be required to prepare a dissertation after undertaking original investigation (clinical or experimental) work, under the supervision of a senior faculty member (Associate Professor, Professors). The progress of this work, which is an important pre-requisite for completion of DM course, will be reviewed at regular intervals and results published at appropriate time based on progress of the work. Satisfactory completion of such work is a pre-requisite for candidates to appear for DM examination.

Each candidate should have three presentations for the dissertation: namely departmental presentation, protocol presentation, follow-up reviews final presentation at the time of the final DM practical and oral examinations. The dissertation should be submitted not later than 6 months prior to the final examination.

#### **EXAMINATION:**

There will be 3 theory papers of 3 hours each; maximum 100 marks

- I. Basic science relevant to the discipline of endocrinology and metabolism
- II. Clinical and therapeutic aspects of endocrinology and metabolism
- III. Recent advances in endocrinology and metabolism

**Clinical examination:**

The clinical acumen of the candidates is objectively evaluated by testing their ability to arrive at a diagnosis and suggest methods of management. This examination will be conducted over 2 days, even if there is a single candidate:

**Day 1:** A carefully selected group of patients from the entire specialty will be given as cases for this examination [2 long cases (one of the long cases must be diabetes); 4 short cases; 4 spotters].

**Day 2:** Knowledge of evaluating the laboratory data in clinical situation and the knowledge of laboratory techniques used in clinical endocrinology and metabolism will also be assessed. Clinical slides, imaging, emergencies, and viva voce will be conducted on the second day. Internal assessment should be taken into account so that examination is not a single day performance. Department should have 6 monthly internal assessment for each candidate, and this should be taken into account before finalizing the results.

**Suggested Reading:**

1. Williams Text book of Endocrinology
2. Joslin Diabetes Mellitus
3. Textbook of Diabetes (Holt's)
4. Metabolic basis of inherited disease (Stanbury)
5. The Thyroid (Ingbar)
6. RIA – Principles and practices (Pillai and Bhandarkar)
7. Reproductive Endocrinology (Speroff)
8. Textbook of Clinical Chemistry (Tietz)
9. Nutritive value of Indian Foods (Gopalan, ICMR)
10. Endocrinology (Leslie J DeGroot)
11. Pediatric Endocrinology (Hindmarsh and CGD Brook)

**JOURNALS**

1. Journal of Clinical Endocrinology & Metabolism
2. European Journal of Endocrinology
3. Diabetes
4. Diabetes Care
5. Diabetologia
6. Fertility and sterility
7. Nature
8. Science
9. New England Journal of Medicine

10. The Lancet
11. Annals of Internal Medicine
12. Hormone and Metabolic Research
13. American Journal of Clinical Nutrition
14. British Medical Journal
15. Journal of Bone and Mineral Research
16. Clinical Endocrinology
17. Endocrine and Metabolic Clinics of North America
18. Endocrine Reviews
19. Endocrine Practice

**Training Programme:**

**I. Postings:** a. General ward – 12 months

- b. Private ward – 12 months
- c. Consults for admitted patients – 10 months Interdepartmental posting
- d. Biochemistry -2 weeks
- e. Reproductive Medicine Unit – 1 week
- f. Pediatric Endocrinology – 4 weeks
- g. Statistics – 2 weeks
- h. Molecular biology- 1 week
- i. Thyroid USG – 1 day
- j. FNAC – 4 days (2 hours each day)

**II. Speciality Clinics:**

- a. Foot clinic once a week 50 weeks
- b. Adult Young diabetes clinic once a week 20 weeks
- c. Menopause clinic once a week 50 weeks
- d. Ophthalmology clinic once a week 4 weeks
- e. Metabolic bone clinic once a week 8 weeks
- f. Thyroid clinic once a week 8 weeks

**II. Multi-departmental meetings:**

- a Nuclear Medicine – Endocrine surgery- Endocrinology meeting once a week --50 weeks
- b Pathology- Endocrine surgery- Endocrinology meeting once in 2 weeks --20 weeks
- c Neurosurgery- Endocrinology meeting once a week --50 weeks