

ANNUAL TRAINING COURSE ON ENDOCRINOLOGICAL TECHNIQUES AND THEIR APPLICATION

The course imparts training on practical aspects of hormone assays as well as theoretical aspects concerning the principles underlying endocrinological techniques and their application in clinical medicine. The course is useful for teachers in medical colleges in the areas of Endocrinology, Pharmacology, General Medicine, Pediatrics, Obstetrics & Gynaecology, Physiology and Biochemistry and scientists working in research organizations, university departments, and biochemists working in large hospitals.

Research in various branches of medical sciences requires the use of endocrinological techniques, which are often highly sophisticated. Such techniques are now employed increasingly for diagnostic purposes. Many of these methods including radioimmunoassay procedures have been standardized by the Endocrinology Division of the National Institute of Nutrition (ICMR), Hyderabad, India.

The course offers training in the practical aspects of hormone assays as well as theoretical background of the principles underlying various hormone assays and the significance of their estimations. Theoretical and practical aspects of radioactive isotopes and radioisotope counters will also be covered.

The training programme covers the following:

Theory

1. Principles of radioactivity and detection and measurement of radiation
2. Health hazards and safe handling of isotopes
3. Planning isotope laboratory
4. Basic endocrinology
5. Laboratory investigations for diagnosis of endocrine disorders
6. Preparation of antigen for antibody production
7. Antibody titre determination
8. Radio iodination of Peptide Hormone and Purification of labelled hormone
9. Principles of radioimmuno assay (RIA), IRMA and Quality control
10. Principles of ELISA and multiplex ELISAs
11. Principles of DEXA
12. Western blotting, PCR and RT-PCR
13. Iodine deficiency disorders
14. Insulin resistance and associated diseases

Demonstrations

1. Radial immuno diffusion technique
2. Whole body counter
3. RIA of peptide/steroid hormones and IRMA
4. ELISA and multiplex ELISAs
5. Western blotting
6. PCR and RT-PCR
7. Application of DEXA in bone density assessment
8. Measurement of insulin resistance in humans

The medium of instruction is English.