

Name of the block	Block 1
Name of the Elective	Immunological assays for Endocrinology
Location of Hospital lab or research facility	Clinical Biochemistry, DMCH
Name of internal preceptor(s)	Dr Nandita Maini Jindal
Name of external preceptor (if applicable)	None
Learning objectives	At the end of two weeks, the student should be able to:- • Describe commonly used laboratory apparatus and equipment. • Elaborate precautions to be taken in Endocrinology Lab and principles of Good Lab Practices (GLP). • Describe the pre analytical, analytical and post analytical processes involved in biochemistry lab. • Explain the basis and rationale of biochemical tests done in different endocrinological disorders. • Correlate altered biochemical values with health and disease. • Explain the quality control process of the tests done in endocrinology lab. • Describe the errors (pre analytical, analytical and post analytical) which can occur in lab. • Describe the steps of spill management and different types of code used. • Describe biohazardous and non-biohazardous waste and their management in endocrinology lab.
Number of students that can be accommodated	4
Prerequisites for elective	Understanding and knowledge of: • Principles of photometric technique • Basic idea of different biochemical parameters used in endocrinological disorders
Learning resources for students	• Practical Handbook of Biochemistry • Textbook of Medical Laboratory Technology by Godkar • Harrison's Principles of Internal Medicine
List of activities of student participants	• Work daily with a supervisor to observe

	commonly used laboratory apparatus and equipment. • Learn about importance of safe lab practices and precautions to be taken in lab. • Describe the pre analytical, analytical and post analytical processes involved in biochemistry lab. • Learn about the working principles of the autoanalyzer. • Work daily with a supervisor to observe the basis and rationale of biochemical tests done in different endocrinological disorders. • Work daily with a supervisor for correlation of altered biochemical values with health and disease. • Observe the supervisor putting internal and external quality control. • Learn about different types of errors occur in clinical biochemistry lab and their corrective measure. • Learn the importance of quality control and Westgard rules. • Learn about Waste management in biochemistry lab. • Present case work up.
Portfolio entries required	• Documentation of worked up cases • Documentation of presentation done
Log book entry required	• Completion of posting signed by preceptor with a “meets expectation (M) grade”
Assessment	• Attendance • Performance of assigned tasks. • Pre and post-test on the assigned elective • Performance in mock up drill in spill management, waste management and different activities on good lab practices. • Presentation of worked up case in department.

Immunological assays for Endocrinology

Immunological assays are laboratory techniques that use antibodies and antigens to detect and measure various substances in biological samples. In endocrinology, immunological assays are used to measure the concentration of hormones in blood or urine samples, which can provide valuable information about the functioning of the endocrine system.

There are several types of immunological assays used in endocrinology, including:

- Radioimmunoassay (RIA)
- Enzyme-linked immunosorbent assay (ELISA), and
- Chemiluminescent immunoassay (CLIA).

RIA uses radioactive labels to detect the presence of a hormone, while ELISA and CLIA use enzyme or light-based labels, respectively.

Immunological assays have many applications in endocrinology, including the diagnosis and monitoring of endocrine disorders, such as diabetes, thyroid disease, and adrenal disorders. These assays can also be used to monitor hormone replacement therapy and to measure hormone levels in research studies and clinical trials.

As an undergraduate medical student, learning about immunological assays for endocrinology can provide you with a better understanding of the principles behind hormone measurement and the techniques used in clinical practice. You will also learn about the limitations and potential sources of error associated with these assays. This knowledge can help you interpret laboratory results and make informed decisions in patient care. Additionally, understanding the principles behind these assays can be valuable for future research and drug development in endocrinology.

