Prime Scholars Library

Commentary

Available online at https://primescholarslibrary.org/

Advances in Life sciences and Biotechnology

Vol. 9 (3), pp.01 - 02, September, 2021

Short commentary on clinical biochemistry

Galila Agam*

Department of Clinical Biochemistry and Pharmacology, Ben-Gurion University, Negev, Israel.

ABOUT THE STUDY

Clinical Biochemistry is commonly concerned with evaluation of body fluids for diagnostic and healing purposes. It is an important part of biochemistry. Clinical biochemistry involves technique and application of biochemical tests conducted on body fluids and tissues, to aid prognosis, remedy and tracking of ailment.

This subject was originated in the past late nineteenth century with help of simple and easy chemical reactions tests for identifying various desirable components of blood and urine. Many years ago, different implications were applied technologically and a new generation have advanced, consisting of the usage of enzyme activities, spectrophotometry, electrophoresis, and immunoassay. There are actually many blood checks and medical urine checks with giant diagnostic capabilities.

Most contemporary laboratories are actually pretty computerized to house the excessive workload normal of a medical institution laboratory. Tests finished are carefully monitored and nice controlled.

All biochemical tests fall under the category of chemical pathology. These are conducted on body fluids like on serum or plasma. Serum is the yellow watery part of blood which is left after blood has been allowed to clot and all blood cells were removed. This is done without difficulty accomplished with the aid of using centrifugation, which filters the denser blood cells and platelets to the lowest of the centrifuge tube, leaving the liquid serum fraction resting above the filtered cells. This preliminary steps before evaluation has been done in respective equipment's' and principles. Plasma is similar to serum, however is acquired with the help of using centrifuging the blood without clotting. Plasma is acquired with the help of using centrifugation before clotting.

A clinical laboratory will be given samples for as much as approximately seven hundred distinct types of tests. Even the biggest of laboratories hardly ever do a majority of these tests themselves, and a few need to be cited different labs.

This big array of tests may be classified into sub-categories as follows:

- General or ordinary chemistry: typically ordered blood chemistries (e.g., liver and kidney characteristic checks).
- Special chemistry: tricky strategies including electrophoresis, and guide trying out strategies.
- Clinical endocrinology: the observation of hormones, and prognosis of endocrine disorders.
- Toxicology: the observation of medicine of abuse and different chemicals.
- Therapeutic Drug Monitoring: size of healing remedy stages to optimize dosage.
- Urinalysis: chemical evaluation of urine for a big range of diseases, together with different fluids including CSF and effusions
- Faecal evaluation: normally for detection of gastrointestinal disorders.

Types of methods utilized in clinical biochemistry:

- Spectrophotometry
- Fluorimetry
- Enzymology
- Atomic Emission and Absorption
- Ion Selective Electrodes
- Oxygen and Carbon Dioxide Electrodes
- Chromatography
- Thin Layer Chromatography and Extraction Techniques
- Gas Chromatography
- High Performance Liquid Chromatography
- Electrophoresis
- Molecular Diagnostics
- Immunological and Radioisotope Techniques
- Coulometry, Osmometry and Refractometry

Clinical Biochemistry tests comprise over 1/3rd of all medical institution laboratory investigation. Clinical Biochemistry is that department of laboratory medicinal drug wherein chemical and biomedical methods are carried out to observe the abnormality occurred in the body which embraces all non-morphological research, in practice it is usually, though not exclusively, confined to studies on blood and urine because of the relative ease obtaining such specimens although analysis are made on other body fluids such as gastric aspirate and cerebrospinal fluid.

- **Uses of biochemical tests:**

1) The knowledge of biochemistry is essential to Clinical Medicine.
2) Biochemical investigations are involved in various degrees, in each department of clinical medicine.
3) Biochemical evaluations will also be used in screening for sickness or in assessing the abnormality, as soon as a diagnosis is made.
4) The biochemical tests are also utilized in pre-formulation studies and in clinical trials.
5) The outcomes of biochemical exams can be of use in diagnosis and in tracking of treatment.
6) Biochemical exams will also be of value in screening for disease or in assessing the pathological condition as soon as a prognosis has been made.