Estimation of GOT, GPT and ALP

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Lab -6- Metabolic Disorders

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Liver functions test (LFTs):

A-Aspartate transaminase (AST) or SGOT

B-Alanine transaminase (ALT) or SGPT

C-Alkaline phosphatase (ALP)

D-Gamma-glutamyl transferase GGT

E-plasma protein

F-Prothrombin Time (PT)

G-Bilirubin

Liver: The liver is an essential organ that has many functions in the body blood clotting factors, manufacturing triglycerides and cholesterol, glycogen synthesis & storage and bile production.

Many different disease processes can occur in the liver, including infections such as hepatitis, cirrhosis , cancers.

1- Aspartate transaminase (AST) or SGOT:

Also known as (serum) glutamic oxaloacetic transaminase (SGOT). AST is found in the liver, heart, skeletal muscle, kidneys, brain, and red blood cells. Serum AST level is commonly measured clinically as biomarkers for liver health.

Normal range: (male 15–40 U/L, female 13–35 U/L)

High serum levels of AST are observed in: Chronic hepatitis, cirrhosis and liver cancer. Although an elevated level of AST in the serum is not specific of the hepatic disease, it is used to control the patients after myocardial infarction. During myocardial infarction only AST increase and ALT is normal or marginal elevated. It starts to increase 4-6h after onset of infarction peaks 16-48h then return to normal 3- 5 days later.

2- Alanine transaminase (ALT) or SGPT

It is also called serum glutamate-pyruvate transaminase (SGPT). ALT is the enzyme produced within the cells of the liver and more liver-specific than AST. Appears in plasma many days before clinical signs appear. In viral Hepatitis ALT levels are increased even before appearance of Jaundice. In Alcoholic Hepatitis there is moderate elevation.

ALT levels may be raised without elevated serum Bilirubin in condition known as Anicteric Hepatitis. Moderate increase may be seen in Cirrhosis, hepatitis and Carcinoma of liver.

Normal ranges: Female: ≤ 34 IU/L, Male: ≤ 45 IU/L

3- Alkaline phosphatase (ALP)

ALP is synthesized both by the biliary tract and by bone, and in pregnancy by the placenta, but these tissues contain different ALP isoenzymes. Elevations of ALP are of most diagnostic significance in the evaluation of hepatobiliary.

Additionally, abnormal levels of alkaline phosphatase in the blood could indicate issues relating to the gall bladder or bones as well as malnutrition have also shown abnormal level of alkaline phosphatase in blood.

Reference ranges for ALP (50–140 U/L)

Thank you for listening