The thirteenth Experiment :

SERUM GLUTAMIC-OXALOACETIC TRANSAMINASE (SGOT)

The GOT is an enzyme present in tissues of high metabolic activity; decreasing concentrations of GOT are found in the heart, liver, skeletal muscle, kidney, brain, pancreas, spleen, and lungs.
The enzyme is released into the circulation following the injury or death of cells. Any disease that causes change in these highly metabolic tissues will result in a rise in GOT levels.

- This test is used to evaluate liver and heart disease. The GOT is usually ordered along with the GPT.
- This enzyme is called too, Aspartate Transaminase (Aminotransferase, AST) .

Reference Values
Men: 14-20 U/L
Women: 10-36 U/L

Clinical significance:

a) *Increased AST levels* occur in :
   1. In MI.
   2. liver diseases (Acute hepatitis, chronic hepatitis, Active cirrhosis, Alcoholic hepatitis …)
   3. Hypothyroidism.
   4. Gangrene.
   5. Polymyositis.
   6. Trauma and irradiation of skeletal muscle.
   7. Shock.
   8. Hemolytic anemia, exhaustion, heat stroke
   9. Others.

b) *Decreased AST levels* occur in the following conditions:
   1. Azotemia
   2. Chronic renal dialysis
   3. Vitamin B6 deficiency

Serum Glutamic-Pyruvic Transaminase (SGPT) or Alanine Aminotransferase (ALT)

It is an enzyme. High concentrations occur in the liver, and relatively low concentrations are found in the heart, muscle, and kidney.

- This test is primarily used to diagnose liver disease and to monitor the course of treatment for hepatitis, active post necrotic cirrhosis, and the effects of later drug therapy.

- The ALT is more specific than AST for liver disease, but the AST is more sensitive to alcoholic liver disease.
- ALT also differentiates between hemolytic jaundice and jaundice due to liver disease.

Reference Values

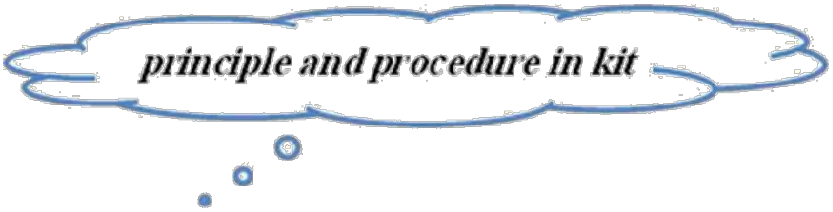
Adults:

Males: 10-40 U/L

Females: 7-35 U/L

Newborns: 13-45 U/L

Clinical significance:

Increased ALT levels are found in the following conditions:

1. Hepatocellular disease
2. Alcoholic cirrhosis
3. Obstructive jaundice or biliary obstruction
4. Viral, infectious, or toxic hepatitis
5. Myocardial infarction, heart failure
6. Severe burns
7. Polymyositis
8. Obesity