AST – SGOT – [Serum] Analysis

Objective

The objective of this test is to measure serum aspartate aminotransferase (AST), also known as serum glutamate oxaloacetate transaminase (SGOT). This enzyme is a marker for liver and heart health and helps in diagnosing conditions such as hepatitis, liver cirrhosis, and myocardial infarction.

Materials and Methods

Materials:
- Serum sample from patient
- AST assay reagents (enzymatic colorimetric kits)
- Automated biochemical analyzer or spectrophotometer
- Standard laboratory equipment (pipettes, centrifuge)

Methods:
1. Sample Collection: Collect venous blood and separate serum by centrifugation.
2. Enzyme Activity Measurement: Perform AST assay using kinetic enzymatic method with L-aspartate and α-ketoglutarate substrates.
3. Calibration: Use control standards for assay accuracy.
4. Interpretation: Compare AST levels to reference ranges; correlate with ALT for liver-specific diagnosis.
5. Quality Control: Include positive and negative controls during testing.

Results

- Normal range: 8–40 U/L (varies by laboratory)
- Elevated AST: Suggests liver disease, myocardial infarction, or muscle injury
- Very high levels: Seen in acute hepatitis, severe muscle trauma, or myocardial infarction

Conclusion

AST (SGOT) testing is a key biomarker for liver and heart health. Interpretation should be performed alongside ALT and other liver function tests, as well as clinical findings, to determine the source of enzyme elevation and guide management.