Apolipoproteins AI/B – [Serum] Analysis

Objective

The objective of this test is to measure serum Apolipoprotein AI (ApoA1) and Apolipoprotein B (ApoB) levels. ApoA1 is the major protein of HDL cholesterol, while ApoB is the main protein of LDL and VLDL particles. The ApoB/ApoA1 ratio is a strong marker for cardiovascular risk assessment.

Materials and Methods

Materials:
- Serum sample from patient
- Immunoturbidimetric or nephelometric assay kits for ApoA1 and ApoB
- Automated biochemical analyzer
- Standard laboratory equipment (pipettes, centrifuge)

Methods:
1. Sample Collection: Collect venous blood and separate serum via centrifugation.
2. Measurement: Perform ApoA1 and ApoB quantification using immunoturbidimetric or nephelometric method.
3. Ratio Calculation: Determine ApoB/ApoA1 ratio to assess cardiovascular risk.
4. Calibration: Use kit-provided calibrators for accurate quantification.
5. Interpretation: Compare results with reference ranges; high ApoB and low ApoA1 indicate increased cardiovascular risk.

Results

- Normal ApoA1 (men): 110–180 mg/dL; (women): 120–200 mg/dL
- Normal ApoB: 50–150 mg/dL (varies by lab)
- ApoB/ApoA1 ratio: Higher ratios indicate greater atherogenic risk
- Low ApoA1 or high ApoB: Associated with increased cardiovascular disease risk

Conclusion

Simultaneous measurement of ApoA1 and ApoB, along with calculation of their ratio, provides valuable information for evaluating cardiovascular health and managing lipid disorders. It is a more precise marker than conventional lipid profiles for assessing atherosclerotic risk.