Bilirubin (Direct) – [Serum] Analysis

Objective

The objective of this test is to measure direct (conjugated) bilirubin levels in serum. Direct bilirubin is used to evaluate liver function and to differentiate between types of jaundice, particularly obstructive and hepatocellular causes.

Materials and Methods

Materials:
- Serum sample from patient
- Diazo reagent or automated biochemical analyzer
- Standard laboratory equipment (centrifuge, pipettes, test tubes)

Methods:
1. Sample Collection: Collect venous blood and separate serum via centrifugation.
2. Direct Bilirubin Measurement: Perform assay using diazo method or automated analyzer.
3. Calculation: Direct bilirubin is measured directly; indirect bilirubin is derived by subtracting direct from total bilirubin if needed.
4. Interpretation: Elevated direct bilirubin indicates cholestasis, biliary obstruction, or hepatocellular injury.
5. Quality Control: Utilize calibrators and quality control sera for accuracy.

Results

- Normal direct bilirubin: 0.0–0.3 mg/dL (varies by laboratory)
- Elevated direct bilirubin: Suggests obstructive jaundice or hepatocellular damage
- Significantly high levels: May be associated with severe cholestasis or advanced liver disease

Conclusion

Direct bilirubin testing is essential for evaluating liver function and diagnosing obstructive or hepatocellular jaundice. Results should be interpreted along with total bilirubin and other liver function tests (ALT, AST, ALP) for accurate clinical assessment.