Catecholamines (Adrenaline + Noradrenaline) – [Urine, 24 Hours] Analysis

Objective

The objective of this test is to measure 24-hour urine levels of catecholamines, specifically adrenaline (epinephrine) and noradrenaline (norepinephrine). This test is used for diagnosing pheochromocytoma and other neuroendocrine tumors.

Materials and Methods

Materials:
- 24-hour urine collection from patient
- High-performance liquid chromatography (HPLC) or immunoassay kits
- Automated analyzers or HPLC equipment
- Standard laboratory equipment (pipettes, centrifuge)

Methods:
1. Sample Collection: Collect 24-hour urine sample in appropriate container.
2. Measurement: Quantify adrenaline and noradrenaline levels using HPLC with electrochemical detection or immunoassays.
3. Calibration: Use calibrators for accurate quantification.
4. Interpretation: Compare levels to reference ranges; elevated levels suggest catecholamine-secreting tumors.
5. Quality Control: Employ controls to validate assay performance.

Results

- Normal adrenaline: < 20 µg/24 hrs (varies by lab)
- Normal noradrenaline: < 90 µg/24 hrs (varies by lab)
- Elevated levels: May indicate pheochromocytoma, neuroblastoma, or other neuroendocrine tumors
- Low levels: May be due to improper collection or certain medications

Conclusion

Measurement of catecholamines in 24-hour urine is important for diagnosing catecholamine-secreting tumors and monitoring treatment. Results should be interpreted with clinical and imaging findings.