Examination Clinical Laboratory

1. Test selection. Patient preparation. Specimen acquisition. Laboratory analysis. Reporting of results. Interpretation of results. Reference range of laboratory tests.
2. Urine in laboratory diagnostics. Characteristics of the urine: Quantity, Colours, pH, Specific Gravity, Osmolarity.
3. Routine chemistry Urinanalysis: Protein, Blood, Glucose. Test principles of measurement. Sources of errors. Clinical aspects.
4. Routine chemistry Urinanalysis: Ketone Bodies, Bilirubin, Urobilinogen, Nitrite. Test principles of measurement. Sources of errors. Clinical aspects.
5. Microscopic examination of urine: cells, casts, crystals.
6. Laboratory Determination of the hematological parameters. Counting of Blood Cells: manual and automatic. Calculated Parameters.
7. Differential Blood Count of WBC. Preparation of Blood Smears. Reference Ranges. ESR. Reference Range.
8. Normal and pathology Morphology of Red Blood Cells, White Blood cells and Platelets. Clinical Interpretation.
9. Laboratory diagnostics of Anemias.
10. Conventional Coagulation Laboratory Parameters. Prothrombin Time. Activated Partial Thromboplastin Time. Thrombin Time. Fibrinogen. D Dimmer. Antithrombin III. Protein C. Protein S.
11. Laboratory Monitoring of Anticoagulant Therapy.
12. Laboratory Diagnosis of Diabetes Mellitus.
13. Laboratory Monitoring of Patients with Diabetes Mellitus.
14. Laboratory tests for assessing Lipid and Protein Metabolism .
15. Laboratory Diagnosis of Acute coronary syndrome.
16. Laboratory Diagnosis of an Inflammation.
17. Laboratory diagnosis of neoplasia. Toumor Markers. General characteristic and use of the Toumor Markers.
18. Most important Toumor Markers.
19. Laboratory tests for assessing Acid-Base and Electrolytes Balance.
20. Interpretation of Disturbances in Acid-Base Balance.
21. Laboratory diagnostics of renal diseases. Laboratory parameters for estimating renal function: Creatinin, BUN, Uric acid. Reference Ranges.
22. Laboratory diagnostics of renal diseases. Functional Tests.
23. Laboratory diagnostics of liver diseases. Laboratory parameters: ALAT, ASAT, GGT, AP, CHE, TBIL, DBIL. Reference Ranges.
24. Laboratory diagnostics of thyroid diseases.

Sources:

1. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. Carl A. Burits, E. Ashwood, D. Bruns. Elsevier
2. Abnormal Laboratory Results. G. Kellerman. Australian Prescriber.
3. A Concise review of clinical laboratory science. L. Hubbard. Lippincott Williams and Wilkins