

Back to Basics Overviews – Hematology



1 – *White Blood Cells*, by Dr. Sigurdson

This session focuses on the origin, maturation and function of the myeloid and lymphoid white blood cells. Normal and reactive morphology as well as leukemias are examined. There is a review of the principles involved in the automated differential.

2 – *Red Blood Cells*, by Dr. Scott

Red blood cells play a vital role in the transport of oxygen. Disease states such as anemia and genetic abnormalities of hemoglobin may affect this function and result in distinct morphological changes. Normal and abnormal morphology will be examined and related to abnormalities in the red cell indices.

3 - *Hemostasis*, by Dr. Krisinger

Hemostasis is a perfect balance between blood clot formation and fibrinolysis. This session describes the biochemical interplay required to protect the body from catastrophic blood loss upon injury while maintaining the fluidity of blood at sites remote from injury. Imbalances can lead to thrombosis or bleeding. Techniques for the investigation of routine coagulation tests will be covered as well.

4- *Blood Platelets and Transfusion Science*, by Dr. Schubert

Platelets play an important role in blood clotting and wound repair. This session covers basic platelet biology as well as highlights of recent scientific discoveries. Platelet functions and their analyses will be discussed especially in the light of platelet disorders.



Scientific approaches will be introduced to address current challenges in blood banking affecting transfusion medicine.

5 – Fluid Morphology, by Dr. Manna

This session will review various fluids which are analyzed in the hematology lab and these include CSF, peritoneal, pericardial, pleural and synovial fluids. The focus will be on cell counts and morphology and the two main objectives are: to be able to identify and differentiate among benign cells; and be able to screen for infections as well as hematologic and non-hematologic malignancies.

6 – Quality Assurance in the Hematology Lab, by Kin Cheng / Jim Yakimec

To ensure quality of the service provided by the laboratory, it must satisfy the needs of the ordering physicians, patients and the regulatory agency. Clinical Laboratory Standards Institute (CLSI) defined twelve building blocks that are essential for a quality management system. These essential building blocks must be applied across the path of workflow, from pre-examination, examination to post-examination.

Before a new instrument or methodology is introduced in the laboratory, it must be properly evaluated to validate its performance specifications. Once it is placed into clinical use, quality control tools are applied to ensure accuracy and precision of the reported results. The final piece in a quality assurance scheme is to ensure the clients receive the results in a timely fashion.

