

HEMATOLOGY CONTENT SPECIFICATIONS

New Validated and Practical Knowledge

1. *Hemostasis and Thrombosis*

- Direct thrombin inhibitor drugs
- ADAMTS 13 assays in TTP
- MY4H9 myosin heavy chain abnormalities and macrothrombocytopenia
- Cytochrome P450 & VKORC1 mutations associated with warfarin dosage
- D-dimer - diagnostic cutoffs for venous thromboembolism
- INR - verifying correct INR and INR calibration
- HIT Assays (EIA, serotonin release)
- Platelet Function Instrumentation - PFA, VerifyNow, Lumiaggregation
- Whole Blood viscoelastometry
- Immunofunctional assays for von Willebrand
- Factor Xa inhibitors – fondaparinux
- Diagnosis of platelet dysfunction by platelet flow cytometry

References

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2. *Hematopoiesis*

- Stem cells

3. *Non-neoplastic Hematopathology*

Hematopoietic

- Flow cytometry for PNH
- Flow cytometry for Hgb F
- Diagnosis of cytoplasmic maturation defect anemia (anemia of chronic disease); role of hepcidin

Lymphoid

- Use of molecular studies (PCR and immunochemical) to find etiology of reactive proliferations
- Autoimmune lymphoproliferative syndrome (ALPS)

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Su HC, Lenardo MN. Genetic defects of apoptosis and primary immunodeficiency. *Immunol Allergy Clin North Am*. 2008; 28:329-51.

4. Neoplastic Hematopathology

Myeloproliferative Neoplasms

- role of JAK2 testing

- morphologic features that distinguish polycythemia vera, essential thrombocythemia, and primary myelofibrosis

- KIT* mutation in mastocytosis

Myeloid and Lymphoid Neoplasms with Eosinophilia and Abnormalities of PDBFRA, PDGFRB or FGFR1

Myelodysplastic/Myeloproliferative Neoplasms

- refractory anemia with ring sideroblasts and marked thrombocytosis

Myelodysplastic Syndromes

- refractory cytopenia with unilineage dysplasia

- childhood myelodysplastic syndromes

Acute Myeloid Leukemia (AML) and Related Precursor Neoplasms

- myeloid proliferations related to Down syndrome

- blastic plasmacytoid dendritic cell neoplasms

- criteria (expanded) for AML with myelodysplasia-related changes

- categories with new balanced translocations or inversions

- FLT-3-ITD as a prognostic marker

Acute Leukemias of Ambiguous Lineage

- classification

- criteria for lineage specificity

Precursor lymphoid neoplasms

- B lymphoblastic leukemia/lymphoma with recurrent genetic abnormalities

Mature B-Cell Neoplasms

- diagnostic criteria for CLL and concept of monoclonal B-lymphocytosis

- approach to splenic small B-cell lymphomas

- concept of "in situ" lymphomas (follicular, mantle cell)

- diagnostic criteria for plasma cell myeloma

- B-cell proliferations associated with EBV

- approach to cutaneous B-cell lymphomas

- subtypes of DLBCL recognized in the WHO classification

- "gray zone" categories

Mature T-cell and NK-Cell Neoplasms

- neoplasms of T follicular helper T-cells (including angioimmunoblastic T-cell lymphoma) including newer stains used in their diagnosis

Hodgkin Lymphoma

- Lymphocyte-rich classical Hodgkin Lymphoma

Post-Transplant Lymphoproliferative Disorders (PTLD)
Other iatrogenic immunodeficiency-associated lymphoproliferative disorders
(eg, TNF inhibitors)
Histiocytic and Dendritic Cell Neoplasms
Molecular markers
FISH
flow cytometry

References

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5. Management

Joint Commission

- critical values

- on going professional practice evaluation

- medical errors

Familiarity with current accreditation requirements

Fundamental Knowledge

Coagulation cascade

Platelet function

Coagulation inhibitors

Routine coagulation assays (PT, aPTT, fibrinogen)

Regulation of fibrinolysis

Immunophenotypic studies of molecular and cytogenetics of

Hematopoietic/lymphoid neoplasms

Interpretation of data from automated blood cell counters

Non-neoplastic bone marrow pathology and current methods of evaluation

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