

Objectives

- Outline the developmental process of hematopoiesis and recall the stages involved in hemostasis
- Relate the pathophysiology, diagnosis and management of common neonatal hematologic disorders including hyperbilirubinemia, anemia and polcythemia
- Describe the pathophysiology and collaborative management associated with common neonatal coagulopathies including the use of blood component replacement

Content Outline

1. Overview of Hematopoiesis
 - 1.1 Red blood cells
 - 1.2 Hemoglobin
 - 1.3 Erythropoietin
 - 1.4 White blood cells
 - 1.5 Platelets
2. Blood Group Types
3. Overview of Hemostasis
 - 3.1 Vascular spasm
 - 3.2 Platelet plug formation
 - 3.3 Coagulation
 - 3.3.1 Formation of prothrombin activator
 - 3.3.2 Formation of thrombin
 - 3.3.3 Fibrin clot formation
 - 3.4 Fibrinolysis
4. Assessment of Hematologic Function
5. Blood group incompatibilities
 - 5.1. ABO incompatibility
 - 5.2 Rh incompatibility
6. Pathophysiology of Hyperbilirubinemia
7. Treatment of Hyperbilirubinemia
 - 7.1 Phototherapy
 - 7.2 Pharmacologic agents
 - 7.3 Exchange transfusion
8. Pathophysiology, Differential Diagnosis and Management of Anemia
 - 8.1 Acute anemia
 - 8.2 Chronic anemia
 - 8.3 Physiologic anemia of the newborn
 - 8.4 Anemia of the premature infant

continued on next page

Neonatal Hematology: Physiology & Complications

Content Outline *continued*

9. Pathophysiology and Collaborative Management of Polycythemia
10. Coagulation Disorders in the Newborn
 - 10.1 Hemorrhagic disease of the newborn
 - 10.2 Hemophilia
 - 10.3 Thrombocytopenia
 - 10.4 Disseminated intravascular coagulopathy
11. Overview of Blood Component Replacement Therapy

Reading Material Resources

This self assessment module is based on the resources listed below.

The reading materials are in the form of a PDF file and can be accessed from the online testing center once the module is purchased.

Chapter 10 Hematologic System, Comprehensive Neonatal Care: An Interdisciplinary Approach, Kenner, et al., Saunders, 2007, pages 221-253.