

Unit 7: Hematology
Chapter 33 & 34
ONLINE CONTENT (2H)

Complete the worksheet and submit in the Unit 7: Hematology dropbox by March 18, 2024 at 0800. Please be sure to bring a copy to class on March 18, 2024.

Table 1	Iron Deficiency Anemia	Thalassemia	Cobalamin (Vitamin B₁₂) Deficiency	Folic Acid Deficiency
Etiology	May develop from inadequate diet intake, malabsorption, blood loss, or hemolysis.	Inadequate production of normal Hgb, which decreases RBC production, is due to an absent or reduced globulin protein.	An absence of intrinsic factor (IF), usually begins middle age or later, the gastric mucosa doesn't secrete IF due to gastric mucosal atrophy.	Folic acid is needed for DNA synthesis leading to RBC formation and maturation.
Clinical Manifestations	Early – may be asymptomatic. Chronic – pallor, glossitis, cheilitis, headache, paresthesia, and a burning sensation of the tongue.	Minor – asymptomatic. Mild-moderate – mild splenomegaly, bronzed skin color, bone marrow hyperplasia. Can have cardiac and growth and development defects.	Develop due to tissue hypoxia, sore red beefy shiny tongue, anorexia, N/V, and abdominal pain, weakness, ataxia, muscle weakness, and impaired cognition	Stomatitis, cheilosis, dysphagia, flatulence, and diarrhea, neuro symptoms.
Diagnostic Studies	Labs, Endoscopy, colonoscopy, bone marrow biopsy if tests are inconclusive	Labs and blood tests	Labs (The RBCs appear large and have abnormal shapes), upper GI endoscopy and biopsy of gastric mucosa.	Labs, Serum folate level is low, with a normal serum cobalamin level
Drug Therapy	Iron supplement, vitamin C,	Blood transfusions, oral deferasirox or deferiprone, deferoxamine, luspatercept-aamt	Parenteral vitamin B12, or intranasal cyanocobalamin	Folic acid replacement therapy
Nursing Management	Assess Hgb and RBC to evaluate response to therapy, stress adherence with diet and drug therapy	Monitor labs, monitor and treat symptoms.	Assess for neuro problems, protect patient from falls, burns, and trauma, physical therapy.	Encourage patient to eat foods high in folic acid

Table 2	Anemia of Chronic	Aplastic Anemia	Acute Anemia due	Chronic Anemia
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	Disease		to Blood Loss	due to Blood Loss
Etiology	Occurs after a chronic disease such as cancer autoimmune or infectious diseases, is associated with an underproduction of RBCs and mild shortening of RBC survival.	Due to autoimmune activity by T lymphocytes, the cytotoxic T cells target and destroy the pts. Own hematopoietic stem cells.	Sudden blood loss due to trauma, surgery complications, can lead to hypovolemic shock.	Due to depleted iron stores, causes can be bleeding ulcer, hemorrhoids, menstrual and postmenopausal blood loss.
Clinical Manifestations	Tiredness, weakness, SOB, irregular heartbeat, cold hands and feet	Fatigue, dyspnea, cardiovascular and cerebral responses, petechiae, bruising, nosebleeds.	Hematemesis, hypotension, internal bleeding, abdominal pain,	Increased bilirubin levels (jaundice), spleen and liver enlargement
Diagnostic Studies	Labs, high serum ferritin and increased iron stores, normal folate and cobalamin levels	Labs, Hgb, WBC, and platelet values are decreased, reticulocyte count is low, serum iron is high, increased yellow marrow	Lab values	Lab values
Drug Therapy	Blood transfusions, EPO therapy	hematopoietic stem cell transplantation	Blood transfusions,	Blood transfusions
Nursing Management	Monitor labs, monitor for bleeding, VS, ECG	Monitor labs, monitor for bleeding, VS, ECG	Find the source/cause of bleeding, stop the bleeding, prevent shock	Maintain renal function, and monitor bleeding

Table 3	Acquired Hemolytic Anemia	Hemochromatosis	Polycythemia
Etiology	Results from hemolysis of RBCs from extrinsic factors	Iron overload disorder, increased intestinal iron absorption, genetic defect is most common cause	The production and presence of increased RBCs. There is primary and secondary.
Clinical Manifestations	Pallor, Jaundice, dark urine, confusion, can't handle activities, Rapid heartrate, SOB	Fatigue, arthralgia, impotence, abdominal pain, weight loss, liver enlargement, cirrhosis, skin pigment changes, arthritis.	Headache, vertigo, dizziness, tinnitus, visual changes, generalized itching, erythromelalgia, impaired blood flow
Diagnostic Studies	Labs, RBC, TPP, DIC	Labs, High serum iron, high TIBC, high serum ferritin, testing for genetic mutations, MRI to measure liver and cardiac iron, liver biopsy	Labs, High Hgb, High hematocrit, high RBC mass, bone marrow biopsy, high WBC
Drug Therapy	Aggressive hydration and electrolyte replacement, folate replacement	Removing 500mL of blood each week until the iron stores are depleted, iron-chelating drugs may be used, deferoxamine and deferiprone	Phlebotomy – removing 300-500 mL of blood every few days until the hematocrit is at an acceptable level , myelosuppressive drugs
Nursing Management	Monitor labs, ECG, VS, monitor for bleeding.	Manage organ involvement and signs and symptoms, make sure to teach patients to avoid vitamin c and iron supplements, uncooked seafood, and iron-rich foods.	Assess I&O, monitor nutritional status, inadequate intake can cause pain and dyspnea

In order to receive full credit (2H class time) for this assignment, it must be completed in its entirety by the due date/time assigned. Any assignment not completed in its entirety by the due date and time will result in missed class time and must be completed by the end of the semester to pass the course.