Unit 7: Hematology
Chapter 29 & 30
ONLINE CONTENT (1.5 H)

Complete the worksheet and submit in the Unit 7: Hematology dropbox by March 20, 2023 at 0800. Please be sure to bring a copy to class on March 20, 2023.

Table 1	**Iron Deficiency Anemia**	**Thalassemia**	**Cobalamin (Vitamin B_{12}) Deficiency**	**Folic Acid Deficiency**
Etiology	-Low iron levels. -Caused by poor dietary intake, malabsorption, blood loss, or hemolysis.	-Group of different diseases that are characterized by poor hemoglobin production and low RBC's.	-Low B12 levels. -Due to a lack of intrinsic factor (IF), and pernicious anemia.	-Low folic acid levels. -Poor iron absorption. -Caused by chronic alcoholism, dietary deficiency, or malabsorption.
Clinical Manifestations	-Pallor, glossitis, cheilitis, headache, paresthesia's, or burning sensation of the tongue.	-Microcytosis/ hypochromia, splenomegaly, bronze coloration of the skin, or bone marrow hyperplasia.	-Sore/beefy red tongue, anorexia, N/V, abdominal pain, weakness, paresthesia of hands and feet, and ataxia.	-Chronic GI related issues such as stomatitis, cheilosis, dysphagia, or diarrhea.
Diagnostic Studies	-Stool occult blood, laboratory testing, endoscopy/colonoscopy, or bone marrow biopsy.	-Laboratory testing	-Laboratory testing, blood testing for anemia, and serum methylmalonic acid testing.	- Laboratory testing.
Drug Therapy	-Oral iron supplements, sodium ferrous gluconate, or Iron sucrose.	-Deferasirox, deferoxamine, or blood transfusions.	-Cobalamin therapy is lifelong with cyancobalamin or nascobal.	-Oral Folate (folic acid) therapy until Hg levels are normal, can be lifelong.
Nursing Management	-Treat cause of iron loss or poor iron absorption. -Educate the patient on good sources of dietary iron and oral iron therapy.	-Monitor patient for any signs of infusion reactions. -Monitor for any worsening of anemia or vitals.	-Frequent Neurological assessment, Maintain a safe environment, and educate patients on lifelong medication therapy.	-Educate patient about foods that are high in folic acid, as well as the possibility of lifelong folic acid supplements.

Table 2	Anemia of Chronic Disease	Aplastic Anemia	Acute Anemia due to blood loss	Chronic Anemia due to blood loss
Etiology	-Low RBC's. -Caused by cancer, autoimmune disorders, infectious diseases, or chronic inflammatory disorders.	-Pancytopenia and hypocellular bone marrow. -Caused by autoimmune activity by T-cells, attacking blood cells in the body.	-Low RBC's. -Caused by sudden onset hemorrhage from surgery, trauma, or other disease processes.	-Low serum iron. -Caused by chronic bleeding due to ulcers, hemorrhoids, or menstruation.
Clinical Manifestations	-Impaired real functions and normal anemia related symptoms.	-Fatigue, dyspnea, neutropenia, sepsis, or thrombocytopenia.	-Symptoms are related to blood loss such as tachycardia, hypotension, syncope, cool/clammy/pale skin, diaphoresis, and if severe S+S of shock.	-Symptoms are related to blood loss and underlying cause.
Diagnostic Studies	-Diagnosis is based upon normal findings of anemia testing and comorbidities.	-Laboratory testing. -Bone marrow biopsy.	-After blood loss there will be abnormally low blood values which can be seen through routine laboratory testing.	-Laboratory testing -Diagnosis of chronic bleeding.
Drug Therapy	-Treat underlying cause of anemia if possible. -Blood transfusions or erythropoietin therapy can be effective if renal impairment is involved.	-Immunosuppresive therapy, ATG therapy, steroids, or antibiotic therapy.	-Treat underlying cause of blood loss. -If severe IV fluids, lactated ringers, PRBC's, IV albumin can be used to replace volume loss.	-Iron supplementation, or infusion therapy may be required.
Nursing Management	-If patient is undergoing erythropoietin therapy monitor for thromboembolism due to increased risk.	-Prevent infection or hemorrhage related to anemia.	-Monitor for signs and symptoms of worsening blood loss. -Monitor for signs and symptoms of infusion reactions.	-Treat underlying cause of bleeding. -Educate on sources of dietary iron. -Educate on oral iron therapy.

Table 3	Acquired Hemolytic	Hemochromatosis	Polycythemia

	Anemia		
Etiology	-Destruction of RBC's. -Caused by infectious diseases, Thrombotic thrombocytopenic purpura (TTP), cancer, Disseminated intravascualar coagulopathy (DIC), HELLP syndrome, physical destruction related to trauma, or extracorporeal circulation.	-Excess of Iron in the blood. -Caused by a genetic defect. -Can also be caused chronic liver disease or chronic blood transfusions.	-Excess RBC's. -Increased blood viscosity and volume.
Clinical Manifestations	-Jaundice, splenomegaly, hepatomegaly, acute tubular necrosis, dyspnea, fatigue, palpitations, pallor, etc.	-fatigue, arthralgia, impotence, abdominal pain, weight loss, hepatomegaly, cirrhosis, diabetes, bronze colored skin, arthritis and testicular atrophy.	-Headache, vertigo, dizziness, and visual changes.
Diagnostic Studies	-Laboratory testing, liver enzyme testing, and clinical manifestations.	-Laboratory testing, Genetic testing, and liver biopsy.	-Laboratory testing, and coagulation values.
Drug Therapy	-Treat the underlying cause. -Possible medication treatment depends on the causing factor.	-Deferoxamine, Deferasirox, or deferiprone.	-Aspirin, Allopurinol, hydroxyurea, busulfan, and chlorambucil.
Nursing Management	-Monitor for any worsening symptoms and possible transfusion reactions.	-Educate on dietary changes to avoid iron rich foods/supplements. -Symptom management.	-Assess patient closely. -Strict I/O's. -Educate the patient on medication therapy.