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

Complete the worksheet and submit in the Unit 7: Hematology dropbox by March 17, 2025 at 0800. Please be sure to bring a copy to class on March 17, 2025.

Table 1	**Iron Deficiency Anemia**	**Thalassemia**	**Cobalamin (Vitamin B_{12}) Deficiency**	**Folic Acid Deficiency**
Etiology	May develop from inadequate diet intake, malabsorption, blood loss, or hemolysis.	A group of diseases involving inadequate production of normal hgb, decreasing RBC production.	Gastric mucosa does not secrete IF because of either gastric mucosal atrophy or autoimmune destruction of parietal cells.	Can cause megaloblastic anemia, folic acid needed for DNA synthesis leading to RBC formation and maturation.
Clinical Manifestations	In early stages, no s/s may be present, as it becomes more chronic you may see pallor, glossitis, cheilitis, headache, paresthesia, and burning sensation of the tongue.	Often asymptomatic but can include mild to moderate anemia with microcytosis (small cells) and hypochromia (pale cells), mild splenomegaly, bronzed skin color, and bone marrow hyperplasia.	Sore, red, beefy, shiny tongue, anorexia, N/V, abdominal pain, weakness, paresthesia of the feet and hands, and impaired cognition.	Stomatitis, cheilosis, dysphagia, flatulence, and diarrhea.
Diagnostic Studies	Endoscopy and colonoscopy to detect GI bleeding, bone marrow biopsy if inconclusive for other tests, stool occult blood test.	Hgb and RBC lab draws.	RBCs appear larger, serum cobalamin levels are low.	Serum folate level is low with normal serum cobalamin level.
Drug Therapy	100-200mg of elemental iron in 3 or 4 daily doses taken along with vitamin C.	Oral deferasirox (Exjade, JadeNu) or deferiprone (Ferriprox) or IV or subcutaneous deferoxamine (Desferal).	Parenteral vitamin B12 or intranasal cyanocobalamin. 1,000mcg/day IM for 2 weeks.	Replacement therapy 1-5mg/day PO

Nursing Management	Treat underlying problem causing the iron loss, reduced intake, or poor iron absorption, replace iron, educate on good foods containing iron, or IV iron supplements, and may need packed RBC transfusion.	May need to do a blood transfusion or exchange transfusion in conjugation with chelating agents that bind to the iron. Monitor liver, heart, and lung function.	Assess for neurologic problems, reduce the risk for injury from the decreased sensitivity to heat and pain.	Teach patients to eat foods high in folic acid.

Table 2	**Anemia of Chronic Disease**	**Aplastic Anemia**	**Acute Anemia due to Blood Loss**	**Chronic Anemia due to Blood Loss**
Etiology	Associated with underproduction of RBCs and mild shortening of RBC survival.	Cytotoxic T cells target and destroy the patient's own hematopoietic stem cells.	Occurs with sudden bleeding due to trauma, surgery complications, and problems that disrupt vascular integrity.	Usually due to depleted iron stores. Can be due to hemolytic anemia.
Clinical Manifestations	Bleeding episodes and underproduction of RBCs and RBCs are usually normocytic, normochromic, hypoproliferative.	Fatigue, dyspnea, cardiovascular and cerebral responses may occur.	None or rare vasovagal syncope, increased HR, postural hypotension, numbness and pain in lower extremities, shock is a major complication.	Manifestations of anemia with jaundice, spleen, and liver enlargement.
Diagnostic Studies	Serum ferritin will be high and normal cobalamin and folate.	Hgb, WBC, and platelet values will all be decreased.	Lab values will remain normal for a few days then reflect the disease, RBC, Hgb, and Hct will all be low.	Increased RBC and increased bilirubin.
Drug Therapy	Correct underlying issue, blood transfusion and	EPO therapy, blood transfusions.	Replace blood loss, stop bleeding, and promote circulation.	Iron supplements

	EPO therapy.			
Nursing Management	Educate patient, protect from injury, & treat underlying cause.	Neutropenic precautions, protect from injury, treat the cause, and monitor labs.	Assess pain, monitor for bleeding, educate the patient, and manage symptoms.	Manage symptoms, educate patient, and maintain renal function.

Table 3	**Acquired Hemolytic Anemia**	**Hemochromatosis**	**Polycythemia**
Etiology	Results from the hemolysis of RBCs from extrinsic factors such as physical destruction, antibody reactions, and infectious agents and toxins.	Iron overload disorder characterized by increased intestinal iron absorption.	Production and presence of increased WBCs and blood circulation impaired. Primary: increased production of RBCs, WBCs, and platelets. Secondary: hypoxia driven or hypoxia independent.
Clinical Manifestations	Fatigue, weakness, pallor, jaundice, enlarged spleen and liver.	Fatigue, arthralgia, impotence, weight loss, liver enlargement, cirrhosis, and abdominal pain.	HTN due to hypovolemia and hyperviscosity, dizziness, vertigo, tinnitus, visual changes, and itching.
Diagnostic Studies	Decreased RBC, increased bilirubin, increased ferritin.	High serum iron, TIBC and serum ferritin, MRI to measure liver and cardiac iron.	High Hgb, Hct, and RBC mass, hypercellularity of RBCs, WBCs, and platelets, and high WBCs
Drug Therapy	Electrolyte replacement, aggressive hydration, blood products, corticosteroids, folate replacement, and removing the spleen.	Remove the excess iron, remove 500mL of blood per week until iron sores depleted. Maintain iron levels WNL.	Reduce blood volume and viscosity and bone marrow activity. Phlebotomy every 2-3 months with 500mL each time and low dose aspirin.
		Manage symptoms, educate	Monitor I/O, assess

Nursing Management	Administer medications, manage symptoms, and educate the patient.	patient, and early diagnosis and treatment.	nutrition status, educate patient, and assist with phlebotomy.

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.