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	Poor dietary consumption, improper absorption, blood loss, hemolysis	Diseases involving not enough normal Hgb production, decreased RBC, little or no globulin protein, hemolysis resulting, genetics.	Linked to pernicious anemia (intrinsic factor), chronic GI disease, surgery, excessive alcohol consumption, hot liquids, smoking, long term use of H2 histamine receptor blockers or PPI's, vegetarians, family predisposition.	Poor dietary consumption, improper absorption, drugs, increased requirement, alcohol abuse, anorexia, loss from hemodialysis.
Clinical Manifestations	Pallor, glossitis, cheilitis	Minor: asymptomatic, anemia (microcytosis, hypochromia) Major: Life-threatening, slowed physical and mental growth, jaundice, splenomegaly, hepatomegaly, and cardiomyopathy. Developed in childhood. Thrombosis.	Gi issues: sore red beefy, shiny, tongue. Anorexia, N & V, abdominal pain. neuromuscular problems, weakness, paresthesia of the feet, hands, decreased vibratory/ position sense. Ataxia, impaired thinking.	Similar to cobalamin deficiency, symptoms due to other existing diseases. GI issues: stomatitis, cheilosis, dysphagia, flatulence, diarrhea.
Diagnostic Studies	Hgb, Hct, MCV, MCH, MCHC, reticulocytes, RBC's, serum Iron, TIBC, Transferrin, Ferritin, Billi, platelets, occult blood, endoscopy/ colonoscopy, bone marrow biopsy	Hgb, Hct, MCV, MCH, MCHC, reticulocyte, RBC's, Serum iron, TIBC Bili, platelets.	Hgb, Hct, MCV, MCH, MCHC, reticulocytes, RBC, Serum Iron, TIBC, Bilirubin, Serum B12, folate, platelets. Upper endoscopy, biopsy mucosa to rule out cancer.	Hgb, Hct, MCV, MCH, MCHC, reticulocytes, RBCs, Serum Iron, TIBC, Billi, B12, folate, platelets.
Drug Therapy	PO Iron, IM / IV iron, blood transfusion.	Minor: body will adapt. Major: transfusion blood / exchange,	Parenteral or intranasal cobalamin, IM cobalamin, Oral / SL	Oral supplement

Nursing Management	Assess lab values, dietary teaching, medication education, transfusion.	Assess labs, transfusion	Assess labs, medication education, diminished sensation to heat and cold (protection).	Assess labs, medication education, dietary changes.

Table 2	**Anemia of Chronic Disease**	**Aplastic Anemia**	**Acute Anemia due to Blood Loss**	**Chronic Anemia due to Blood Loss**
Etiology	Cancer, autoimmune and infectious disorders (HIV, hepatitis, malaria), chronic inflammation. HF, bleeding,	Autoimmune activity (T lymphocytes), injury to bone marrow stem cells, inherited stem cell defects.	Sudden hemorrhage, Trauma, Complications of surgery, conditions that disrupt vascular integrity.	Ulcers, hemorrhoids, menstrual / post menstrual blood loss.
Clinical Manifestations	Palpitations, mild fatigue, exertional dyspnea, decreased RBCs, Hgb, Hct, increased ferritin / Iron stores.	Pancytopenia, fatigue, dyspnea, palpitations, headache.	Fatigue, dyspnea, headache, palpitations, vertigo, pallor, tachycardia, cold sensitive.	Fatigue, dyspnea, headache, palpitations, vertigo, pallor, tachycardia, sensitivity to cold.
Diagnostic Studies	Lab values – Hgb, Hct, MCV, MCH, MCHC, reticulocytes, RBC, Iron, TIBC, Billi, B12, folate, potassium.	Lab values – Hgb, WBC, RBC, platelets, Iron, TIBC. Bone marrow biopsy.	Lab values – Hgb, Hct, RBC, platelets. Current S&S more important.	Lab Values – Hgb, Hct, MCV, MCH, MCHC, reticulocytes, RBCs, Iron, TIBC, transferrin, feritin, billi, platelets.
Drug Therapy	Correct underlying cause, blood transfusion, erythropoietin therapy	Transfusion, erythropoietin therapy, immunosuppressive therapy.	IV fluids, transfusion, Iron supplement.	Iron supplements, transfusion.
Nursing Management	Assess lab values, transfusion	Transfusion, supportive care, prevent complications.	Monitor blood loss, transfuse blood products, assess lab values, supportive care	Assess lab values, medication education, transfusion, identify source of bleeding and correct it.

Table 3	**Acquired Hemolytic**	**Hemochromatosis**	**Polycythemia**

	Anemia		
Etiology	Antibodies against RBC's, infectious agents / toxins, physical destruction, extracorporeal circulation, DIC, HELLP syndrome, prosthetic heart valves, TTP, Cancer.	Genetic defect, Sideroblastic anemia, liver disease, Chronic transfusion.	Genetics / changes, hypoxia
Clinical Manifestations	General anemia, jaundice, splenomegaly, hepatomegaly.	Fatigue, arthralgia, impotence, abdominal pain, weight loss, liver enlargement, skin changes, cardiomyopathy.	Hypertension, headache, vertigo, dizziness, tinnitus, visual changes, pruritus, paresthesia, intermittent claudication, petechia, bruising, nosebleeds, increased uric acid.
Diagnostic Studies	Lab values – Hgb, Hct, MCV, MCH, MCHC, reticulocytes, RBC's, serum iron, TIBC, Billi, B12, folate, platelets.	Lab values – Hgb, Hct, MCV, MCH, MCHC, reticulocytes, RBC's, iron, TIBC, Billi, B12, folate, Platelets.	Lab values – Hgb, Hct, MCV, MCH, MCHC, reticulocytes, RBC's, iron, TIBC, Billi, B12, folate, Platelets. Uric acid, bone marrow.
Drug Therapy	Maintain renal functions, IV fluids, transfusion, folate supplement, corticosteroid, immunosuppressive agent.	Phlebotomy, iron cleating agent.	Phlebotomy, myelosuppressive agent, low dose aspirin, allopurinol.
Nursing Management	Supportive care, hydration, electrolyte replacement, transfusion.	Supportive care, education on avoiding Vitamin C / iron supplements, education to avoid uncooked seafood / iron rich foods.	Blood volume removal, assess I&O, medications, nutritional status, active / passive exercises, ambulation, iron supplement avoidance.

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.