

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 B ₁₂) Deficiency	Folic Acid Deficiency
Etiology	Most common type of anemia Iron is too low to support normal RBC production	Mutation of DNA of cells that make up hemoglobin, reduced RBC function, anemia	Lack of B12 due to diet insufficiency, body does not make B12 on its own, pregnancy, Crohns, Graves disease	Diet insufficiency, alcohol abuse, congenital disorders, dialysis medication
Clinical Manifestations	Fatigue, lack of energy, Shortness of breath, chest pain, anemia, PICA	Widening of bones due to bone marrow expansion, brittle thin bones, enlarged spleen, jaundice, severe anemia	Often presents as anemia, fatigue and pallor, lethargy	Lack of energy, smooth/tender tongue, pale skin, decreased appetite, headaches
Diagnostic Studies	CBC, hemoglobin levels, blood iron levels	Hemoglobin analysis, CBC	CBC, B12 levels	CBC, peripheral smear, serum folate testing
Drug Therapy	Ferrous iron (IV or PO)	Chelating therapy deferiprone, deferasirox, desferrioxamine	B12 injections, especially if vegan/vegetarian	Folic acid supplements
Nursing Management	Cluster care for frequent rest periods. Education regarding side effects of medication, diet to improve iron levels	Prevent infection, prevent bleeding, health and medication education	Food and diet changes, eggs, fish, meat, poultry, supplement education	Education medication compliance and diet changes, breads and fortified grains

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Table 2	Anemia of Chronic Disease	Aplastic Anemia	Acute Anemia due to Blood Loss	Chronic Anemia due to Blood Loss
Etiology	<p>Second most common type of anemia HGB dysfunction , cells training iron instead of releasing it. inflammation cancer, HF, autoimmune disease, kidney disease, lupus, etc.</p>	Immune system attacking stems cells in bone marrow	Sudden and rapid decrease of RBC, usually acute hemorrhage or hemolysis	Decrease of RBC due to chronic condition
Clinical Manifestations	SOB, headaches, tiredness, pale skin, diaphoresis	Easy bruising, frequent infections, pale skin, weakness	Increased pulse, diaphoresis, impaired breathing	Tiredness, paleness, SOB
Diagnostic Studies	Hgb, serum iron, reticulocyte count, serum ferritin, bone marrow biopsy	Bone marrow biopsy, CBC	CBC, CT, EDG, colonoscopy to determine bleeding	CBC, CT/EDG/ colonoscopy to determine bleeding site
Drug Therapy	Treating underlying conditions, blood transfusion, iron supplements	Autoimmune suppressants, cyclosporin, antithymocyte	Blood transfusion, packed RBC	Blood transfusion, treat underlying condition

<p align="center">Nursing Management</p>	<p>Cluster care to provide rest periods, education (medication) symptom management of chronic disease</p>	<p>Infection control, education, blood transfusion monitoring.</p>	<p>Treat underlying acute condition. Blood transfusion monitoring</p>	<p>Treat/manage underlying chronic condition. Cluster care with frequent rest breaks</p>
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Table 3	Acquired Hemolytic Anemia	Hemochromatosis	Polycythemia
Etiology	<p>RBC are destroyed earlier than normal, antibodies from autoimmune disorder, burns, medications</p>	<p>Genetic condition that causes iron overload of liver, pancreas, heart, and joints</p>	<p>Mutation that occurs, unknown why, not inherited, overproduction of red blood cells</p>
Clinical Manifestations	<p>Skin paleness, weakness, hepatomegaly, jaundice, tachycardia, heart murmur</p>	<p>fatigue , brain fog, weight loss, joint pain</p>	<p>Fatigue, dizziness, SOB, visual disturbances, nose bleeds, bleeding gums, heavy menstrual cycles, bruising</p>
Diagnostic Studies	<p>CBC, hemoglobin, iron levels</p>	<p>Serum ferritin- amt of iron in liver Serum transferrin saturation- iron bound to blood MRI, liver function tests</p>	<p>Bone marrow biopsy, hemoglobin, hematocrit</p>
Drug Therapy	<p>Blood transfusion, corticoid steroids, immunosuppressive therapy</p>	<p>Blood removal (phlebotomy) Chelation- binds excess iron body expels it through urine or stool</p>	<p>Phlebotomy, low dose aspirin</p>

Nursing Management	Infection control, management of underlying condition	Education (diet, disease management, compliance)	Increase activity during peak energy levels, education (disease management, compliance)
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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.