

Medications

Acetaminophen. Non salicylate, para-aminophenol derivative. Patient is taking this medication for pain. Do not exceed the recommended daily dose of 4g.

Acyclovir. Nucleoside analogue. Unable to find correlation for usage. Ensure patient is adequately hydrated while taking this medication to avoid renal impairment (Jones & Bartlett, 2020).

Digoxin. Cardiac Glycoside. Patient is taking this medication for atrial fibrillation. Take patient's apical pulse before giving each dose and notify prescriber if it's below 60 bpm (Jones & Bartlett, 2020).

Diltiazem extended release. Calcium Channel Blocker. Patient is taking this medication for atrial fibrillation. Watch for signs of digitalis toxicity (nausea, vomiting, and visual color distortion) if patient takes digoxin and has an elevated serum digoxin level (Jones & Bartlett, 2020).

Filgrastim. Colony-stimulating factor. To reduce the duration of neutropenia in patients undergoing chemotherapy. Don't give within 24 hours before or after cytotoxic chemotherapy (Jones & Bartlett, 2020).

Furosemide. Loop Diuretic. Patient is taking this to reduce edema related to heart failure. Obtain patient's weight before and periodically during furosemide therapy to monitor fluid loss (Jones & Bartlett, 2020).

Hydrochlorothiazide. Thiazide diuretic. Patient is taking this to reduce edema related to heart failure. Monitor blood pressure, daily weight, fluid intake and output, and serum levels of electrolytes, especially potassium.

Lamotrigine. Phenytriazine. Patient is taking this medication due to his history of seizures. Monitor patient for adverse reactions, especially suicidal thoughts (Jones & Bartlett, 2020).

Levetiracetam. Pyrimidine derivative. This medication is used to treat seizures. Monitor patient for bleeding, fever, recurrent infections, or significant weakness (Jones & Bartlett, 2020).

Metoprolol. Beta 1-adrenergic blocker. This medication is used to manage hypertension. Use cautiously in patients with angina or hypertension who have congestive heart failure because beta blockers such as metoprolol can further depress myocardial contractility, worsening heart failure (Jones & Bartlett, 2020).

Midodrine. Alpha-adrenergic agonists. This medication is used to treat orthostatic hypotension. Assess patients heart rate has bradycardia is side effect (Jones & Bartlett, 2020).

Vancomycin. Glycopeptide. Patient is taking this medication for sepsis prophylaxis related to patient's diagnosis of pancytopenia. s. Observe IV infusion site for evidence of extravasation, including necrosis, pain, tenderness, and thrombophlebitis. If extravasation occurs, discontinue infusion immediately and notify prescriber.

Demographic Data

Date of Admission: 11/9/21

Admission Diagnosis/Chief Complaint: Pancytopenia

Age: 59

Gender: M

Race/Ethnicity: Caucasian

Allergies: Contrast dye (SOB), ISOVUE 128 (Anaphylaxis), NutraSweet (hives), Cefepime (Rash)

Code Status: Full code

Height in cm: 185.42cm

Weight in kg: 104.8 kg

Psychosocial Developmental Stage: Integrity vs. despair

Cognitive Developmental Stage: Formal Operational

Braden Score: 18, average risk

Morse Fall Score: 70, High fall risk

Infection Control Precautions: Patient is on standard precautions but should be on neutropenic precautions based on his WBC count of 0.4.

Pathophysiology

Disease process: Pancytopenia is defined as a decrease in leukocytes, hemoglobin, and platelets (Chiravuri, 2021). Pancytopenia is diagnosed based on underlying conditions, but is not an actual disease (Chiravuri, 2021). Sepsis can lead to pancytopenia through marrow suppression, hypersplenism, and consumptive coagulopathy (Chiravuri, 2021). Leukemia may also impair the bone marrow leading to pancytopenia (Chiravuri, 2021)

S/S of disease: Signs and symptoms of pancytopenia include hemoglobin levels less than 13.5 g/dL in men, platelet counts less than 150,000/mcL, leukocytes less than 4000/mcL, and absolute neutrophils less than 1800/mcL (Chiravuri, 2021). Patients may present with bruising, nausea, lethargy, and severe infections (Chiravuri, 2021).

Method of Diagnosis: Pancytopenia is diagnosed via complete blood count (CBC) and reticulocyte count (Chiravuri, 2021). Further diagnostics consists of serum calcium and parathyroid levels to assess for pancytopenia related to malignancies or autoimmune conditions (Chiravuri, 2021).

Treatment of disease: Treatment consists of RBC transfusions (Chiravuri, 2021). Broad spectrum antibiotics are recommended for patients with neutropenic fever and severe neutropenia with an absolute neutrophil counts of 500/mcL or less (Chiravuri, 2021). This regimen is recommended to reduce the risk of sepsis (Chiravuri, 2021). This is currently how the patient is being treated.

Lab Values/Diagnostics

Lab	Normal	11/09	11/10	Reason
WBC	4-12 10(3)/mcL	0.2 L	0.4 L	Patient has chronic neutropenia and recently underwent his 2 nd round of chemotherapy (Pagana & Pagana, 2018).
RBC	3.8-5.3 10(6)/mcL	1.98 L	1.87 L	Low RBCs are related to the patient's diagnosis of leukemia (Pagana & Pagana, 2018).
Hgb	12-15.8 g/dL	5.9 L	5.7 L	Low Hgb levels are related to the patient's diagnosis of pancytopenia. This can be caused by cancer and chemotherapy (Pagana & Pagana, 2018).
Hct	36%-47%	17.5 % L	17% L	Low Hct can be related to the patient's diagnosis of leukemia (Pagana & Pagana, 2018).
Platelet	140-440 10(3)/mcL	61 L	42 L	Low platelets can be related to chemotherapy and Leukemia (Pagana & Pagana, 2018). This is consistent with the patient's diagnosis of pancytopenia.
Ab. Neutrophil	1.5-7.6 k/cumm	0.1L	N/A	Low absolute neutrophils can be related to chemotherapy (Pagana & Pagana, 2018). This is consistent with the patient's diagnosis of pancytopenia.
Ab. Lymphocytes	1-6 k/cumm	0L	N/A	Low lymphocytes can be related to leukemia and sepsis (Pagana & Pagana, 2018). This is consistent with the patient's diagnosis of pancytopenia.
Ab. Monocytes	0.10-1.1 k/cumm	0.01L	N/A	Low absolute monocytes could be related to anemia (Pagana & Pagana, 2018).
Ab. Eosinophils	0.20-0.8 k/cumm	0.01L	N/A	Low absolute eosinophils could be related to increased stress (Pagana & Pagana, 2018).

11/9/21: ECG. Abnormal, sinus or ectopic atrial tachycardia. Abnormal suggest ischemia, diffuse leads ST-T-neg. Patient was diagnosed with Atrial fibrillation.

11/9/21: XR chest. Patch bilateral chest infiltrates w/ some interval improvement. Patient had pneumonia related to COVID during the duration of his last hospitalization.

Admission History

Patient's began to feel week Sunday 11/7/21 while at home. He felt progressively weak over the next two days. On 11/9/21, patient was making lunch in the kitchen and immediately felt as though he was going to pass out. He made it way to the living room and to the couch. Patient was unable to get up from the couch and requested an ambulance be called. Patient said he has felt this way before and knew he "was low on blood". Patient received his second cycle of Dacogen and Ventodax on 11/2/21.

Medical History

Previous Medical History: A fib, covid, anemia, Acute myeloid leukemia, congestive heart failure, Hodgkin's lymphoma, seizures, hypertension, agranulocytosis secondary to chemotherapy, Antineoplastic chemotherapy induced anemia, pneumonia, Multiple chromosomal abnormalities, Abnormal male karyotype w/ hypodiploid clone, 5Q deletion, 17P deletion.

Prior Hospitalizations: 8/29/21-10/20/21: Pain in the left hip and pancytopenia

Previous Surgical History: Hematopoietic stem cell transplant, esophagogastroduodenoscopy, colonoscopy, L knee repair

Social History: Patient reports no use of alcohol or substance abuse. Patient smokes ½ pack of cigarettes a day. Patient has been a smoker for at least 30 years.

Active Orders

Waffle seat cushion. Patient has a stage two pressure ulcer near his coccyx region.

Reposition patient q2h. Patient has a stage two pressure ulcer near his coccyx region.

Apply Zinc-based barrier cream or petroleum product for redness or denuded skin after each incontinent episode. Patient has a stage two pressure ulcer near his coccyx region.

Daily Braden. Patient has a stage two pressure ulcer near is coccyx and experiences occasional incontinence.

Sepsis Alert. Potential sepsis related to severe neutropenia and pancytopenia.

Fall Risk. Patient has a more fall score of 70 making him high risk.

Packed RBC ordered 11/9/21 @ 2320. Arrived 11/10/21 @ 1230 and were being administered. Patient has been admitted for pancytopenia. Patients Hgb was 5.9 upon admission.

Breathable underwear. Patient has a stage two pressure ulcer near his coccyx region.

Physical Exam/Assessment

General: Patient is A_xO_x4. Patient shows no signs of distress, well-groomed, and dressed appropriately.

Integument: Skin is ivory, dry, and warm with no rashes or bruises. Patient has a stage two pressure ulcer on the coccyx. Patient's Braden score is a 21.

HEENT: Patient's head and neck are free of lesions and symmetric. Thyroid is midline with no deviation. Ears are symmetric, dry around the auricles, and w/o drainage. Eyes are symmetric, sclera is white, cornea is clear, and conjunctive is pink w/o drainage or lesions. Septum is midline. Turbinates are pink and moist with no bleeding or polyps. Dentition is intact. Oral mucosa is pink and moist w/o lesions.

Cardiovascular: Clear s₁ and s₂ sounds w/o gallops, murmurs, or rubs. Bilateral radial pulses are 2+. Bilateral dorsalis pedis pulses are 1+. Capillary refill fingers and toes bilaterally 4+. Dependent edema in the lower legs and feet.

Respiratory: Clear respirations auscultated in the anterior and posterior lungs bilaterally. No accessory muscle use.

Genitourinary: Patient's urinary output was 300mL. Urine was yellow, clear, and non-odorous. Patient does not have pain with urination. No catheter is present.

Musculoskeletal: Patient is a one assist to the restroom due to weakness. Patient has a fall score of 70 making him high risk.

Neurological: Patient has generalized weakness, but is able to move all extremities well. Patient's pupils are round, reactive to light, and accommodation. Equal strength observed during hand grips and pedal pushes and pulls bilaterally in the hands and feet.

Most recent VS (include date/time and highlight if abnormal):

11/10 @ 1230 **Temp 99 HR 120 BP 89/50 Resp 21** O₂ 95 (room air)

Pain and pain scale used: Patient rated his pain a 2/10 on a scale of 1-10. Patient states the source of his pain is hemorrhoids. He requested hemorrhoid cream. Nurse was waiting on Dr. to put in a prescription for this.

<p align="center">Nursing Diagnosis 1</p> <p>Risk for sepsis related to patients low WBC and absolute lymphocyte counts.</p>	<p align="center">Nursing Diagnosis 2</p> <p>Risk for bleeding related to patient's low platelet count.</p>	<p align="center">Nursing Diagnosis 3</p> <p>Impaired skin break down related to stationary lifestyle and occasional incontinence.</p>
<p align="center">Rationale</p> <p>Patient's low WBC count put the patient at risk for infection due to a deficient immune system. A low absolute lymphocyte count is consistent with sepsis.</p>	<p align="center">Rationale</p> <p>Patient's platelet count is extremely low. Platelets help the blood to clot. This low value puts the patient at risk for bleeding.</p>	<p align="center">Rationale</p> <p>Patient has a stage two pressure ulcer on his coccyx. Patient has spent a lot of time sitting in bed due to hospitalization.</p>
<p align="center">Interventions</p> <p>Intervention 1: Administer vancomycin as prescribed.</p> <p>Intervention 2: Monitor patients temperature noting any rise in temperature.</p>	<p align="center">Interventions</p> <p>Intervention 1: Hold any needle sticks for 5-10 minutes following procedure.</p> <p>Intervention 2: Monitor V/S for signs of bleeding as respirations, pulse, and blood pressure will attempt to compensate.</p>	<p align="center">Interventions</p> <p>Intervention 1: Reposition patient q2h.</p> <p>Intervention 2: Apply barrier cream to pressure ulcer.</p>
<p align="center">Evaluation of Interventions</p> <p>Patient is scheduled to have blood work completed again. Will be able to evaluate effectiveness once lab work is followed up.</p> <p>Patient's temperature has been hovering around the 99-degree mark. This is expected due to patient's low WBC count.</p>	<p align="center">Evaluation of Interventions</p> <p>No needle sticks were performed during my rotation.</p> <p>Patient V/S remained unchanged during rotation. Patients BP tends to run low and BP and respirations high.</p>	<p align="center">Evaluation of Interventions</p> <p>Patient was repositioned every 2 hrs during rotation.</p> <p>I was unable to see application of barrier cream.</p>

References (3) (APA):

Chiravuri, S. (2021, August 30). *Pancytopenia*. StatPearls [Internet]. Retrieved November 12, 2021, from <https://www.ncbi.nlm.nih.gov/books/NBK563146/>.

Jones & Bartlett Learning. (2020). *2020 Nurse's Drug Handbook* (19th ed.).

Pagana, K. D., Pagana, T. J., & Pagana, T. N. (2018). *Mosby's diagnostic and laboratory test reference* (14th ed.). Mosby.