Medications

Folic Acid 1mg PO daily

- P: Water soluble vitamin B
- T: B9 vitamin
- Reason patient is taking:
- Nursing assessment: Take precautions to protect vitamin B9 solution from exposure to sunlight. Sub Q injections should be administered deep (Jones & Bartlett, 2021).

Methylprednisolone 200 mg IV Piggyback daily over 60 minutes

- Therapeutic Class: Corticosteroid
- Pharmalogic class: Glucocorticoid
- Reason patient is taking:
- Nursing assessment: Assess Blood Glucose levels, monitor liver enzymes, and give medication with food to avoid GI upset (Jones & Bartlett, 2021).

Pantoprazole 40 mg IV push BID

- T: Antiulcer
- P: Proton Pump Inhibitor (PPI)
- Reason for taking: To treat symptoms of GERD, prophylaxis of Ulcer
- Nursing Assessment: Flush IV line with D5W, NS, or LR before and after medication administration (Jones & Bartlett, 2021).

Tylenol (Acetaminophen) 650 mg PO Q6h PRN fever/Pain

- T: Antipyretic, non-opioid analgesic
- P: Non-salicylate, para-aminophenol derivative
- Reason patient is taking :To relieve moderate pain and to reduce fever
- Nursing Assessment: Use cautiously in patient patients with hepatic impairment or active hepatic disease. Know lab values while patient is using this medication (Jones & Bartlett, 2021).

Cyanocobalamin 250mcg PO Daily

- T: Vitamin B12
- P: Water soluble Vitamin B
- Reason for taking: B12 is essential to RBC production, the patient is taking the vitamin to prevent deficiency in B12 and for production of RBC
- Nursing Assessments: Assess patient for signs and symptoms of toxicity. Check B12 lab values before administering.Do not administer B12 with other drugs (Capriotti, 2021).

Lab Values/Diagnostics

CT abdominal/Pelvis with contrast

- Indicated Jaundice
- Performed due to the patient's yellow skin

EKG -Normal sinus rhythm

- Performed due to patient c/o SOB

Chest X ray – No abnormal findings

- Performed because of Shortness of Breath
- The provider ordered chest X-ray to rule out MI.
- The chest X ray would rule out any other pulmonary causes for SOB.

Bilirubin total – 1.7 mg/dL

- Normal range 0.3 – 1.0 mg/dL
- The patient's diagnosis of jaundice is related to the elevated bilirubin . An elevated bilirubin indicates liver impairment. The patient's hemolytic anemia causes increased destruction of RBC's, when the RBC'S are destroyed the byproduct billirubin is released. Hemolytic anemia cause the patient's higher than normal billirubin values (Capriotti, 2021).

RBC 1.79 mcL (low) , HCT 16.8% (low), HGB 5.6 g/dL (low)

- Normal range :RBC 4.35-5.65 mcL; HCT normal value: 36%-47% ; Hgb normal value: 12.0-15.8 g/dL
- The patient's diagnosis of hemolytic anemia is the reason for the low CBC levels. Hemolysis occurs at a faster rate than the bone marrow can replace the RBC's this imbalance causes more hemoglobin lost ,hemocrit levels decline, and Hgb to deplete(Capriotti, 2021).

Urine analysis

- Dark Brown urine, 2+ protein ,
- Normal urine should be yellow and pale, a normal UA should be negative for protein (Capriotti, 2021).
- The patient's diagnosis of hemolytic anemia causes RBC destruction, as the RBC's are broken down, the hemoglobin is released and excreted in the urine. The over load of hemoglobin in the urine causes the very dark brown color.

Demographic Data

Date of Admission: 04/22/2022
Admission Diagnosis/Chief Complaint: Yellow skin with SOB/ Jaundice/ Hemolytic Anemia
Age: 42 years old
Gender: female
Race/Ethnicity: White / Caucasian
Allergies: No known allergies
Code Status: Full Code
Height in cm: 165.1 cm
Weight in kg: 132.5 kg
Psychosocial Developmental Stage: Generativity vs Stagnation (Middle age adult)
Cognitive Developmental Stage: The formal operational stage
Braden Score: 22
Morse Fall Score: 35
Infection Control Precautions: Standard precautions

Admission History

42 year old white female patient presented to Sarah Bush emergency department with complaints of yellowing skin and shortness of breath. The patient states she noticed her skin looked kind of yellow on Thursday 04/21/2022. Patient states the following morning of Friday 04/22/2022, she noticed her skin becoming very visibly yellow and she stated to feel short of breath with exacerbation. Patient explains the SOB became severe within 10 minutes of onset, and she then decided to bring herself into the ER. The client denies taking any medications to try and alleviate her symptoms.

Medical History

Previous Medical History: Seasonal allergies, anxiety, obesity, dysmenorrhea, and GERD

Prior Hospitalizations: Hysterectomy (4/11/2022), Child Birth (2014, 2017)
Previous Surgical History: Hysterectomy (4/11/2022), Tonsillectomy (2010), D&C (07/29/2016), Caesarean with bilateral tubal ligation (06/17/2017), and varicose veins ligation /stripping (2012).

Social History: The patient denies any alcohol or drug use, also states she has never smoked. The patient is currently employed as a Nurse Manager.

Pathophysiology

Disease process: The main function of the red blood cells or erythrocytes, is to transport oxygen to the body's tissues and organs. Lack of oxygen to the tissues and organs causes cellular hypoxia and eventually cellular death(Capriotti, 2021). When organs do not receive adequate oxygen by RBC's the organs begin to shut down. Anemia is the term to describe the condition of insufficient perfusion to the tissues and organs. Hemolytic anemia occurs when erythrocyte lysis or destruction, occur faster than RBC production(Capriotti, 2021). The premature destruction of RBC prevents tissue and organ perfusion. As RBC's are destroyed, a byproduct is released into the blood steam, this byproduct is called bilirubin(Capriotti, 2021).. Bilirubin is a yellow substance and when levels become too high, the skin and sclera becomes yellow. Jaundice is an indication that the liver is not properly functioning. Liver impairment in this manner is the result of poor oxygenation to the organ, as a result of lack of hemoglobin carrying oxygen for perfusion(Capriotti, 2021). A decrease in RBC's and hemoglobin also affects perfusion to the lung tissue and cause impaired gas exchange at the alveolar-capillary membrane and oxygen delivery to the tissues become diminished. The impaired gas exchange will cause shortness of breath and low oxygen saturation (Capriotti, 2021). My patient presented to Sarah Bush emergency department with a chief complaint of shortness of breath and yellow skin. Blood test were performed on the patient to reveal low RBC levels, low hemoglobin, and low hemocrit levels. The patient's CMP revealed elevated bilirubin and an urinalysis showed dark urine(hematuria). The patient was given a blood transfusion p, oxygen therapy, and her diagnosis was determined as hemolytic anemia. Some causes of hemolytic anemia include, antibiotics, autoimmune disorders, genetics, spherocytisis, , HD, and lead positioning (Capriotti , 2021). My patient who is post surgical was on antibiotics therapy. The physician determined the antibiotics prescribed is the cause of her hemolytic anemia. The patient's antibiotics was discontinued.

S/S of disease: Typical signs and symptoms of anemia including: Fatigue, pallor, shortness of breath, and tachycardia. Some additional signs and symptoms include chills, jaundice(yellow skin and sclera), dark urine, and an enlarged spleen (Capriotti, 2021).

Method of Diagnosis: Diagnostic test to confirm Hemolytic Anemia include a complete blood count (CBC), and evaluation of reticulocyte count (Capriotti, 2021). Reticulocyte count becomes elevated when the bone marrow cannot keep up with RBC destruction. A CMP will help the healthcare team look at bilirubin levels which is a byproduct of RBC destruction. A high bilirubin would indicate a higher than normal hemolysis, which leads to jaundice (Capriotti, 2021). Other diagnostic test include, Hgb electrophoresis, bone marrow examination, and testing for the presence of autoantibodies (Capriotti, 2021).

Treatment of disease: To treat Hemolytic Anemia, the provider may order a blood transfusion to help replace the RBC's being destroyed, folic acid, iron supplements, and corticosteroid (Capriotti, 2021). My patient is currently taking folic acid, a B12 vitamin to help with the maturation of young red blood cells. She is also taking methylprednisolone a corticosteroid to help increase erythropoietin. Erythropoietin is an important hormone for RBC production (Capriotti, 2021). The physician also has an active order for packed red blood cells to be infused for the patient. In emergency situations blood transfusions are ordered to quickly replace RBC's (Capriotti , 2021).

Active Orders

Telemetry – To monitor patient's cardiac function related to the patient's shortness of breath. This will help ensure shortness of breath is not cardiac related.

Packed RBC- 2 units PRN for asymptomatic anemia – This order is to help replace the RBC's lost in hemolysis. The packed RBC's also helps to prevent the patient form hypovolemic shock.

Normal Saline drip- 1000 mL at 150mL/hr. – To prevent dehydration . Infusing fluid is also important to keep fluid volume maintained for the patient to ensure adequate perfusion to her tissues and organs.

Regular Diet – The patient is in a regular diet to make sure she remains nourished for promotion of RBC production and healing. The patient does not have a past medical history of HTN, CHF, or any other cardiac impairment for a heart healthy diet to be put in place.

CBC w/ differential Q6h – the order helps the provider to monitor the patient's blood levels. A CBC will allow the healthcare team to see a trend in the patient's condition. The CBC provides a count of RBC, hemoglobin, and hemocrit. The CBC also shows the patient's WBC to monitor for trends that would indicate infections.

CMP Q6h – The CMP lab values helps the provider monitor the patient's liver function. The diagnosis of Jaundice warrants the need of monitoring labs to track progression or deterioration of liver function.

Oncology Consult – The patient developed a rare blood disorder. The consult will help to ensure the patient is receiving the best care for her diagnosis and to help support her recovery. The oncology consult can rule out other diseases or causes for hemolytic anemia or confirm current diagnosis.

$Physical Exam/Assessment

General: The patient is alert and oriented x four, she is in good spirits , calm, and cooperative. Her overall appearance is clean, neat, with good hygiene. The patient is in no distress and she states she has no current pain. The patient is also a nurse and she is dedicated to becoming better to return to her normal life. Patient states she is the mother of two young girls and cannot wait to see them once she is discharged home.

Integument: The patient's skin is clean and intact, her skin turgor is less than 2 seconds with no tenting or evidence of rashes, bruises, or unintentional wounds. The patient's skin is a slight yellow on her extremities, but skin is pink, clean, and appropriate for her race/ethnicity.

The patient's slight yellow discoloration on her arms and legs are the symptoms of jaundice. The patient's continuous break down of RBC's causes increased bilirubin in the blood. Bilirubin is a yellow substance and when levels become to high the skin and sclera may appear yellow as well (Capriotti, 2021). The medical interventions put in place for the patient is improving her condition as evidenced by the patient stating, " Just yesterday, my whole body especially my face was yellow".

HEENT: The patient have no apparent deformities of the skull. Her neck is straight with the trachea midline. Ears are soft with no drainage or discoloration noted.

The patient's eyes are PERLA and equal.

Cardiovascular: The patient's heart sounds are normal with S1 and S2 present. The student nurse does not note any S3 or S4 present and no heart murmurs noted. Peripheral pulses are slightly diminished at 3+ and capillary refill is less than two seconds.

Respiratory: The patient does not appear to be in any respiratory distress, she does use accessory muscles to breathe, breath sounds are normal and regular. Lung sounds are clear and free of adventurous sounds in all lobes bilaterally.

Genitourinary: The patient has very dark urine. She states that she does not have any pain or discomfort with urination. The patient's dark urine is a result of hemolysis caused by her diagnosis of hemolytic anemia. Hemoglobin is excreted from the body in the urine as red blood cells are destroyed (Capriotti, 2021)..

Musculoskeletal: The patient is active with ROM, she does not currently use any support devices. She has an assigned fall score of 35, and a Braden score of 22. Patient does not need assistance to perform ADL's, she has equal strength in all extremities (5/5). Patient is fully independent and her mobility status is up with one stand by assist.

Neurological: The patient is alert and oriented to time, place, self, and situation. She is a current Nurse manager who is very competent and knowledgeable of her diagnosis and treatment. The patient's speech is clear and easy to understand, she is fully conscious and aware of her surroundings.

Nursing Diagnosis 1 Impaired gas exchange related to decreased oxygen carrying capacity as evidenced by low hemoglobin values and the patient stating, “I’m having shortness of breath”.	**Nursing Diagnosis 2** Risk for hypovolemic shock related to blood volume loss as evidenced by insufficient hemoglobin and hematocrit lab values.	**Nursing Diagnosis 3** Risk for infection related to decrease in hemoglobin as evidenced by Hgb level of 5.6g/dL and the patient’s past surgical history.
Rationale Reduced hemoglobin values decreased the amount of oxygen being carried to the lungs. The patient’s low hemoglobin causes less perfusion of the lungs leading to the shortness of breath the patient is experiencing.	**Rationale** The patient diagnosis of hemolytic anemia puts her at risk of hypovolemic shock due to the rapid loss of RBC, the blood volume decreases as hemolysis occurs and the bone marrow is unable to replenish at the same rate. Poor perfusion to vital organs can cause shock. The patient needs to be monitored closely for signs and symptoms of hypovolemic shock..	**Rationale** The patient had surgery last week and she was prescribed antibiotics to prevent post surgical infections. The antibiotics caused the patient to have hemolytic anemia and the antibiotic therapy was discontinued. The patient’s low hemoglobin levels and prescription of corticosteroids makes her immunocompromised, making her a high risk for infection.
Intervention 1: Provide supplemental Oxygen as ordered to maintain O2 sat. Of 92% or greater. **Intervention 2:** Position patient in a semi-Fowler position with the head of the bed elevated at least 45 degrees.	**Interventions** **Intervention 1:** Administer IV fluids as ordered to replace lost blood volume. **Intervention 2:** Monitor patient’s vital signs and CBC labs closely for change in health status. Be prepared to infuse packed RBC as ordered.	**Interventions** **Intervention 1:** Implement preventative measures such as proper hand washing when providing patient care. **Intervention 2:** Routinely assess patient vitals for elevated temperature.
Evaluation of Interventions The client reports no shortness of breath and O2 sat remains above 95% on room air.	**Evaluation of Interventions** The patient’s medical status remains stable.No evidence of hypoxia, delirium, or LOC.	**Evaluation of Interventions** The patient’s vital signs remains within normal limits.

(3) (APA):

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