Medications

atorvastatin 10mg by mouth daily Pharmacological class: HMG-CoA reductase inhibitor (Jones & Bartlett, 2020). Therapeutic class: Antihyperlipidemic (Jones & Bartlett, 2020). Reason client is taking medication: The client has a medical history of hyperlipidemia. Nursing assessments prior to administration: Check client for signs of jaundice and monitor blood glucose levels (Jones & Bartlett, 2020). Notify prescriber if client develops myopathy symptoms (Jones & Bartlett, 2020).

duloxetine 90mg by mouth daily Pharmacological class: selective serotonin and norepinephrine reuptake inhibitor (Jones & Bartlett, 2020). Therapeutic class: Antidepressant (Jones & Bartlett, 2020). Reason client is taking medication: The client has a past medical history of major depressive disorder. Nursing assessments prior to administration: Monitor client for signs of serotonin syndrome (Jones & Bartlett, 2020). Monitor blood pressure closely (Jones & Bartlett, 2020).

hydrochlorothiazide 25mg by mouth daily Pharmacological class: Thiazide diuretic (Jones & Bartlett, 2020). Therapeutic class: diuretic (Jones & Bartlett, 2020). Reason client is taking medication: The client has a past medical history of hypertension. Nursing assessments prior to administration: Monitor blood pressure, weight, fluid intake and output, glucose, and serum electrolytes (Jones & Bartlett, 2020).

levothyroxine 100 mcg by mouth daily Pharmacological class: synthetic thyroxine (Jones & Bartlett, 2020). Therapeutic class: thyroid hormone replacement (Jones & Bartlett, 2020). Reason client is taking medication: The client has a past medical history of hypothyroidism. Nursing assessments prior to administration: Monitor glucose levels (Jones & Bartlett, 2020). Take thirty minutes before the first meal of the day (Jones & Bartlett, 2020).

lisinopril 20mg by mouth daily Pharmacological class: Angiotensin-converting enzyme inhibitor (Jones & Bartlett, 2020). Therapeutic class: Antihypertensive (Jones & Bartlett, 2020). Reason client is taking medication: The client has a past medical history of hypertension. Nursing assessments prior to administration: Check blood pressure before administration (Jones & Bartlett, 2020). Monitor kidney function and electrolyte levels (Jones & Bartlett, 2020).

mirtazapine 45mg by mouth at night Pharmacological class: Tetracyclic antidepressant (Jones & Bartlett, 2020). Therapeutic class: Antidepressant (Jones & Bartlett, 2020). Reason client is taking medication: The client has a past medical history of major depressive disorder. Nursing assessments prior to administration: Monitor client for signs of infection, akathisia, and suicidal tendencies (Jones & Bartlett, 2020).

pantoprazole 40mg by mouth daily Pharmacological class: proton pump inhibitor (Jones & Bartlett, 2020). Therapeutic class: Antiulcer (Jones & Bartlett, 2020). Reason client is taking medication: The client has a past medical history of gastroesophageal reflux disease (Jones & Bartlett, 2020). Nursing assessments prior to administration: Monitor clients urine output, diarrhea, and magnesium levels (Jones & Bartlett, 2020).

vancomycin 1750mg intravenous piggyback every twelve hours Pharmacological class: Glycopeptide (Jones & Bartlett, 2020). Therapeutic class: Antibiotic (Jones & Bartlett, 2020). Reason client is taking medication: Infection of the bone (osteomyelitis). Nursing assessments prior to administration: Monitor blood pressure and diarrhea (Jones & Bartlett, 2020).

aripiprazole 5 mg by mouth at night Pharmacological class: Atypical antipsychotic (Jones & Bartlett, 2020). Therapeutic class: Antipsychotic (Jones & Bartlett, 2020). Reason client is taking medication: The client has a past medical history of major depressive disorder and borderline personality disorder (Jones & Bartlett, 2020). Nursing assessments prior to administration: Monitor blood pressure, glucose, weight, lipid levels, and difficulty swallowing (Jones & Bartlett, 2020).

Lab Values/Diagnostics

Magnetic resonance imaging of the left foot without contrast (4/24/22). This diagnostic was preformed because the client is suspected to have osteomyelitis of the foot.

x-radiation of the left foot (4/22/22). This diagnostic test is because the client's chief compliant of redness and swelling to the foot. This test is used to rule out abnormalities of the foot.

Calcium: 8.1 mg/dL Normal lab values: 8.6-10.3 mg/dL Reason for abnormal value: The bone infection is causing a low calcium level because the bone is not receiving enough blood flow.

Neutrophil: 9.0x10^{9}/L Normal lab values: 2- 7x10^{9}/L Reason for abnormal value: A bacterial infection in the bone is causing an increase in neutrophil count.

Demographic Data

Date of Admission: 4/22/22
Admission Diagnosis/Chief Complaint: Redness and swelling of the left second toe.
Age: 42 years old
Gender: Female
Race/Ethnicity: Caucasian
Allergies: naproxen (unknown reaction), penicillin (unknow reaction), sulfa drugs (unknow reaction), cephalexin (unknow reaction), lithium (seizures), clindamycin (unknow reaction)
Code Status: Full
Height in cm: 165 centimeters
Weight in kg: 114.1 kilograms
Psychosocial Developmental Stage: appropriate for age, generativity vs. stagnation.
Cognitive Developmental Stage: appropriate for age, Formal operational stage.
Braden Score: 20
Morse Fall Score: 35
Infection Control Precautions: standard precautions

Admission History

The client presented the emergency department with redness, swelling, and pain of the left toe. The client reports that the toe was painful, red, and swollen for a couple of weeks. The client reports body aches and chills. The client denies nausea or vomiting. An x-radiation revealed concerns of osteomyelitis in the second toe. The client does not report any alleviating factor for the pain. The client does report an increase of alcohol consumption.

Medical History

Previous Medical History: Gastroesophageal reflux disease, gestational diabetes, hyperlipidemia, hypertension, diet-controlled diabetes, obesity, major depressive disorder, borderline personality disorder, hypothyroidism, sarcoidosis, lower extremity neuropathy.
Prior Hospitalizations: N/A

Previous Surgical History: Amputation to the left great toe one year ago. Venipuncture (10/31/03)
Social History: Client reports smoking one pack of cigarettes a day with unknow stating age. Client report occasional alcohol consumption of beer or liquor once or twice a year. Client reports drinking alcohol more often in the "last couple of days" does not report how much is consumed. Client reports marijuana and methamphetamine use since 2007. Client reports that they are not using drugs at this time.

Pathophysiology

Disease process: Osteomyelitis is a bone infection caused by bacterial or a fungal infection (Cleveland Clinic Writers, 2021). The infection can spread through the bloodstream or nearby tissue that can inter the bone (Cleveland Clinic Writers, 2021). Another way that osteomyelitis can occur is an injury that exposes the bone where bacterial and fungal infections can enter the bone (Cleveland Clinic Writers, 2021). The infection causes swelling of the bone marrow (Cleveland Clinic Writers, 2021). This swelling is painful and can cause an occlusion of blood supply to the bone causing necrosis of the bone (Cleveland Clinic Writers, 2021).

S/S of disease: Symptoms of osteomyelitis include drainage, redness at site of infection, fever, irritability, lethargy, pain, loss of appetite, lower back pain, nausea, vomiting, sweating, and chills (Cleveland Clinic Writers, 2021). This patient experienced swelling, pain, redness at the site of infection, and nausea.

Method of Diagnosis: To diagnose osteomyelitis a blood test may be used, x-radiation, magnetic resonance imaging, computerized tomography, ultrasounds, a bone scan, and a biopsy of the bone/bone marrow (Cleveland Clinic Writers, 2021). This client received blood tests, and x-radiation, and a magnetic resonance imaging to detect the presence of osteomyelitis.

Treatment of disease: To treat osteomyelitis intravenous antibiotics are used for a week to months depending on the severity of the infection (Cleveland Clinic Writers, 2021). If the infection is caused by a fungal infection oral antifungal are used for months (Cleveland Clinic Writers, 2021). Bone surgery may be used to remove necrotic bone and tissue (Cleveland Clinic Writers, 2021). This client is receiving intravenous antibiotics to treat the osteomyelitis.

Active Orders

Central catheter care to prevent infection to the client.

Chlorhexidine gluconate baths to reduce the risk of further infection.

Vancomycin trough levels to make sure the vancomycin is working to its therapeutic effect to treat the infection.

Basic metabolic panel to monitor glucose levels, electrolytes, and kidney function because the client is diabetic and has an infection that can change electrolyte levels.

Complete blood count with differential to monitor white blood cell levels and neutrophil counts because of the client's infection.

Magnesium levels because magnesium stimulate calcitonin to draw calcium into the bones because the client's bones are infected and can become necrotic and pantoprazole can cause hypomagnesemia.

Consult with infectious disease because the client has a bone infection and infectious disease will help the client to avoid further infection.

Vital signs every four hours to monitor for any changes in the client's condition.

Physical Exam/Assessment

General: The client is alert and oriented times four. The client is in destress over pain and nausea. The client is not well groomed.

Integument: The client has redness and swelling in the left second toe. The client's skin turgor is elastic with no signs of rashes. The client has bruises on both arms near elbow. The client's left great toe is amputated with a scar. The clients skin temperature is warm, dry, and intact

HEENT: The client's head is normocephalic, the neck is supple, and no masses noted. The ears are symmetrical with no signs of drainage present. The pupils are equal and reactive to light. PERLA and EOM intact. The nares are patent with no signs of deviated septum. The gums are pink, moist, and intact. The teeth show no signs of dental carries. No masses or lesions noted.

Cardiovascular: The heart sounds auscultated with no murmurs present. S1 and S2 present with normal sinus rhythm. +2 radial pulses noted bilaterally. The capillary refill less than three seconds noted in all extremities. No signs of neck vein distention or edema.

Respiratory: The client shows no signs of accessory muscle being used. Anterior and posterior breath sounds auscultated clear and equal bilaterally.

Genitourinary: The client's diet at home and the current diet is high carbohydrate diet. The client has active bowel sounds in all four quadrants and the last bowel movement has not been noted. The client's abdomen is soft and nontender with no masses noted. There are no signs of distention, incisions, or wounds in the abdominal area. No ostomy is present. Nasogastric tube is not present. No feeding or PEG tubes are present. The client's urine is pale yellow and clear. The quantity of urine is not noted. The client reports no pain with urination. The client is not receiving dialysis. The genitalia are clean, dry, and intact. No catheter is present.

Musculoskeletal: The neurovascular status is intact. The range of motion is intact active and passively. The client does not use supportive devices and has strength 5/5 in three extremities. The client has strength of 3/5 in the left lower extremity.

Neurological: The client can move all extremities and PERLA is intact. The strength is equal in arms. The left lower extremity's strength is diminished compared to the right lower extremity. The client is alert and oriented times four. The client's speech is clear with no sensory or loss of consciousness.

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

Temperature: 37.8℃, Heart rate: 108 beats per minute, Respirations: 18 breaths per minute, Oxygen saturation: 98% on room air, Blood pressure: 146/96 mmHg

Vital signs taken 4/25/22 at 1000.

Pain and pain scale used:

Numeric pain scale of a 10/10

Pain scale taken 4/25/22 at 1000.

Nursing Diagnosis 1	Nursing Diagnosis 2	Nursing Diagnosis 3
Risk of infection related to alteration in skin integrity as evidence by a central line (Phelps, 2020).	Risk for falls related to difficulty with gait as evidenced by osteomyelitis of the foot (Phelps, 2020).	Acute pain related to osteomyelitis as evidenced by the client's pain score of 10/10 on the numeric pain scale (Phelps, 2020).
Rationale	**Rationale**	**Rationale**
The client is at a high risk of infection because the client has a central line, and the client currently has a bone infection.	The client has osteomyelitis of the foot which client reports is very painful and the foot is swollen and red.	The client reported a 10/10 pain on the numeric pain scale and displayed facial grimacing.
Interventions	**Interventions**	**Interventions**
Intervention 1: Minimize risk of infection by proper hand hygiene (Phelps, 2020). **Intervention 2:** While caring for client's central line be sure to alcohol and wear glove to minimize pathogen exposure (Phelps, 2020).	**Intervention 1:** Assess the client's ability to use the call bell (Phelps, 2020). **Intervention 2:** Teach client how to use assistive devices when walking (Phelps, 2020).	**Intervention 1:** Perform relaxation techniques like frequent repositioning (Phelps, 2020). **Intervention 2:** Provide an environment to promote relaxation and sleep (Phelps, 2020).
Evaluation of Interventions	**Evaluation of Interventions**	**Evaluation of Interventions**
Goal met. The staff sanitized hand when entering and leaving the room. Goal met. Gloves and proper cleaning of the central line was performed.	Goal met. The client used call bell when in need of assistance. Goal met. The client understands the need to have help by an assistive device or another person.	Goal met. The client repositioned several times and reported that they felt better. Goal met. The client wanted the lights off to sleep and relax.

References (3) (APA):

Cleveland Clinic Writers. (2021). *Osteomyelitis (bone infection): Causes, symptoms & treatment*. Cleveland Clinic. Retrieved April 29, 2022, from https://my.clevelandclinic.org/health/diseases/9495-osteomyelitis

Jones & Bartlett. (2020). *Nurse's Drug Handbook* (12th ed.). Jones & Bartlett Learning.

Phelps, L. L. (2020). *Sparks & Taylor's nursing diagnosis reference manual* (11th ed.). Wolters Kluwer.