

N321 Concept Map

Student Name: Riley Doran

Medications

Aspirin 81mg PO daily

Pharmacological class: salicylates, nonsteroidal anti inflammatory drug Therapeutic class: antiplatelet, antipyretic, nonopioid analgesic

Why: inflammation and pain

Nursing assessment: monitor for tinnitus, don't crush time released tablets

Carvedilol 25mg PO daily

Pharmacological class: Beta blocker Therapeutic class: Antihypertensive

Why: history of hypertension

Nursing assessment: may mask signs of hypoglycemia, contraindicated in patient's with severe hepatic impairment

Levemir 28 units SubQ QHS

Pharmacological class: Pancreatics Therapeutic class: Antidiabetic

Why: Patient has Type 2 Diabetes/ to control hyperglycemia

Nursing assessment: infection can alter insulin requirements, renal impairment may decrease insulin requirement

Linezolid 60mg IVPB Q12H

Pharmacological class: Oxazolidinones Therapeutic class: Anti infective

Why: Active infection in left foot

Nursing assessment: increased risk of hypoglycemia, monitor platelet counts when taking with antiplatelet agents

Lisinopril 2.5mg PO daily

Pharmacological class: ACE inhibitor Therapeutic class: antihypertensive

Why: History of hypertension

Nursing assessment: use cautiously in patients with renal impairment

Warfarin 2mg PO daily

Pharmacological class: coumarins Therapeutic class: anticoagulants

Why: history of atrial fibrillation

Nursing assessment: contraindicated in open wounds, severe liver or kidney disease, and uncontrolled hypertension

Demographic Data

Date of Admission: 4/20/22

Admission Diagnosis/Chief Complaint: increased redness and swelling in left foot diabetic wound

Age: 75

Gender: Male

Race/Ethnicity: Caucasian

Allergies: Mildew, penicillin, statins

Code Status: Full Code

Height in cm: 180cm

Weight in kg: 138.1 kg

Psychosocial Developmental Stage: Appropriate

Cognitive Developmental Stage: Appropriate

Braden Score: 19

Morse Fall Score: 60

Infection Control Precautions: contact precautions

Pathophysiology

Disease process: Osteomyelitis is an infection of the bone that results in inflammation, necrosis, and formation of new bone (Hinkle et al., 2018). Osteomyelitis with vascular insufficiency is most commonly seen in patients with diabetes and peripheral arterial disease and is most commonly seen in the feet (Hinkle et al., 2018). *Staphylococcus aureus* causes more than 50% of bone infections. After the body's initial response to infection of inflammation and edema occurs, thrombosis of the local blood vessel occurs, resulting in ischemia with bone necrosis (Hinkle et al., 2018). A bone abscess forms when the infection is not treated properly and sequestrum remains and produces reoccurring abscesses (Hinkle et al, 2018).

S/S of disease: The initial response to infection is inflammation, increased vascularity and edema (Hinkle et al., 2018). As the infection spreads, the area becomes painful, swollen and extremely tender, often described as a pulsating pain that intensifies with movement (Hinkle et al., 2018). Diabetic osteomyelitis can occur without external wounds. This patient is presenting with the initial response to infection as stated in his admission history.

Method of Diagnosis: X-ray findings can indicate soft tissue edema, MRI and radioisotope bone scans, and blood studies indicating leukocytosis, elevated ESR and wound cultures all indicate osteomyelitis (Hinkle et al., 2018).

Treatment of disease: The initial goal of therapy is to control and halt the infective process. The area affect with osteomyelitis is immobilized to decrease discomfort and prevent fracture of the weakened bone (Hinkle et al., 2018). Long term antibiotic therapy occurs for 3-6 weeks. If the infection does not respond to antibiotic therapy, surgical debridement can be used (Hinkle et al., 2018). This patient is showing signs of an infection that is unresponsive to antibiotic therapy as his symptoms have gotten worse even after starting antibiotics.

Admission History

Patient presented to the clinic on 4/20/22 with a worsening infection on his left foot. He states that he has had this for at least a year and that it has been infected showing signs of redness and swelling. He states that two weeks ago he saw his Podiatrist and he was prescribed an antibiotic. He states that over the last three days the swelling and redness has continued to get worse. He states that he also has had a flare of his CHF as he is having dyspnea and edema. Patient will be admitted to the Medical-Surgical floor for monitoring for left diabetic foot infection/wound.

Medical History

Previous Medical History: hyperthyroidism, chronic anemia, ICD in place, CAD, CHF, COPD, Hypertension, MRSA, afib, PAD, renal cell carcinoma, chronic kidney disease (stage 4), type 2 diabetes

Prior Hospitalizations: Hernia (2017), nephrectomy (4/2016), laminectomy (1974), tonsillectomy (1959), AICD unknown

Previous Surgical History: inguinal hernia, left and right cataracts, partial nephrectomy, laminectomy, tonsillectomy, surgery for ICD placement

Social History: alcohol: occasionally wine (couple times a month)

Former smoker- 27 years 1 pack/week

Substance: none

Active Orders

Central venous catheter care (To avoid infection and keep catheter functioning properly to ensure medications are able to be administered)

Blood glucose monitoring (To monitor patient's glucose levels because of Type 2 Diabetes)

Consistent carbohydrate diet (To control patient's diabetes)

Contact precautions (Patient has current infection and MRSA in past medical history)

PT/INR draw (Ensure patient's Warfarin levels are therapeutic)

General surgery consult (Toe infection may have spread to bone/ may have to be operated on)

Lab Values/Diagnostics

BUN 56 (H) Elevated BUN due to chronic kidney disease (Normal Range: 10-20)

INR 2.93 within range for patient's taking Warfarin

Creatinine 2.22 (H) Elevated creatinine signifies possible impaired kidney function. (Normal Range 0.7-1.4)

Hgb 8.5 (L) History of chronic anemia, possible internal bleeding (Normal Range: M 14-16)

Calcium 8.2 (L) History of chronic kidney disease (Normal Range 8.6-10.2)

Hct 25.8 (L) History of chronic anemia, possible internal bleeding (Normal Range M: 35-47)

Glucose 138 (H) Elevated glucose level due to patient's type 2 diabetes and use of antibiotics (Normal Range 70-110)

RBC 2.98 (L) History of chronic anemia, possible internal bleeding (Normal Range 4.5-6)

PT 31.9 (H) Due to Warfarin use and Aspirin (Normal Range 11-12.5)

CT foot: To depict any bone erosions, osteolytic lesions or infection or inflammatory disorders

Chest Xray: complaints of dyspnea and history of CHF and COPD

Foot Xray: To depict possible broken bones

Ultrasound left lower leg: To depict a deep vein thrombosis

ECG: Determine if there is a blocked or narrowed artery due to history of CAD

Physical Exam/Assessment

General: A&O x4, Patient alert and oriented to person, place, time and situation, No acute distress Overall appearance good, hygiene maintained

Integument: Skin pink, warm and dry. No bleeding noted. Dressing is clean, dry, and intact. Patient has a temperature of 36.9 degrees Celsius. Patients skin turgor is elastic. **Patient has a diabetic wound on left foot, redness and swelling indicated.** Patient has a Braden score of 19. No drains present.

HEENT: Head is normophiliac. Trachea is midline. Eyes are equal, round, reactive and accommodate to light. Nose is midline, shows no signs of polyps. Oral mucosa is pink and moist. Patient does not have dentures or glasses/contacts.

Cardiovascular: Patient's heart sounds are normal. S1 and S2 noted, no gallops or murmur noted. Pedal pulses were 2+ bilaterally. Capillary refill less than 3 seconds. **Edema noted**

Respiratory: Lung sounds clear and equal bilaterally. **Dyspnea noted.**

Genitourinary: Patient's urine is clear and yellow with no odor. Patient has voided 800mL. There is no pain upon urination. The patient is not on dialysis. Patient's genitals show no signs of irritation. No catheter in place.

Musculoskeletal: Patient has no decrease in sensation. Does not report any numbness. Full ROM. Currently on bedrest with turns. High fall risk. Fall risk score of 60. Up independently. No supportive devices used at home

Neurological: Patient A&O x 4, denies numbness or tingling, speech is clear, no sensory impairment, no cognitive impairment, Equal strength, pupils equal, round react and accommodate light

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

Temp 36.9 C

HR 76

BP 124/76

RR 16

O2 96%

Pain and pain scale used: 0/10 pain, numeric scale

<p align="center">Nursing Diagnosis 1</p> <p>Acute pain related to inflammation and edema as evidenced by patient presenting with inflammation and edema located at the left foot.</p>	<p align="center">Nursing Diagnosis 2</p> <p>Risk for infection related to bone abscess formation as evidenced by signs of infection unresponsive to antibiotics</p>	<p align="center">Nursing Diagnosis 3</p> <p>Impaired physical mobility related to pain, use of immobilization devices or weight bearing limitations as evidenced by a fall risk of 60</p>
<p align="center">Rationale</p> <p>Patient's admission history stated a worsening in redness and inflammation of the left leg.</p>	<p align="center">Rationale</p> <p>Patient's redness and swelling did not decrease with the start of an antibiotic regimen.</p>	<p align="center">Rationale</p> <p>Patient's fall risk score of 60 indicating impaired mobility.</p>
<p align="center">Interventions</p> <p>Intervention 1: Elevation of left foot to reduce swelling and associated discomfort Intervention 2: Left foot immobilized with a splint to decrease pain and muscle spasm</p>	<p align="center">Interventions</p> <p>Intervention 1: monitors response to antibiotic therapy and observes IV access site for signs of phlebitis Intervention 2: monitors for development of additional painful sites or sudden increase in body temperature</p>	<p align="center">Interventions</p> <p>Intervention 1: Activity restrictions to avoid stress on the bone Intervention 2: Joints above and below affected part are gently moved through their full range of motion</p>
<p align="center">Evaluation of Interventions</p> <p>Patient indicated a relief in pain</p>	<p align="center">Evaluation of Interventions</p> <p>Patient showed signs of control and eradication of infection</p>	<p align="center">Evaluation of Interventions</p> <p>Patient showed signs of improved physical mobility within therapeutic limitations</p>

References (3) (APA):

Davis's Drug Guide Online + App | DrugGuide.com. (2022). Davis Drug Guide. <https://www.drugguide.com/ddo/view/Davis-Drug-Guide>

Hinkle, J. L., & Cheever, K. H. (2018). *Brunner & Suddarth's Textbook of Medical-surgical Nursing*. Wolters Kluwer.

Jones & Bartlett Learning. (2018). *2018 Nurse's drug handbook* (17th ed.). Jones & Bartlett

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