Medications

Dobutamine Hydrochloride
- **Pharmacologic Class:** Sympathomimetic
- **Therapeutic Class:** Inotropic
- **Dose/Frequency:** 16 ml/hr - IV Continuous Infusion
- **Reason to take:** acute decompensated Heart Failure
- **Nursing Assessments**: Monitor Potassium due to medication causing low levels and monitor Urine output. (Jones & Bartlett Learning, 2020).

Fentanyl Citrate (Fentora)
- **Pharmacologic Class:** Opioid
- **Therapeutic Class:** Opioid Analgesic
- **Dose/Frequency:** 50 mcg - IV Push - q3hrs/PRN
- **Reason to take:** For Pain of 8-10
- **Nursing Assessments**: Monitor Respiratory Status due to medication causing hypoventilation, medication can cause cardiac arrest - monitor signs of CNS depression and hypoventilation (Jones & Bartlett Learning, 2020).

Hydrocodone - Acetaminophen (Narco) Tablet
- **Pharmacologic Class:** Controlled Opioid Combos
- **Therapeutic Class:** Analgesics
- **Dose/Frequency:** 325mg tab - q4hrs/PRN - Crushed via NG tube
- **Reason to take:** for moderate pain 4-6/10 level
- **Nursing Assessments**: Assess heart rate (hold medication if HR is <60), Assess blood pressure (hold if sys. B/P is < 100), assess oxygen saturation and respiration after administration for respiratory depression (Jones & Bartlett Learning, 2020).

Piperacillin - Tazobactam
- **Pharmacologic Class:** penicillins and beta-lactamase inhibitors
- **Therapeutic Class:** Antibiotics
- **Dose/Frequency:** 25 ml/hr - IV Continuous Piggyback infusion.
- **Reason to Take:** MRSA septic infections.
- **Nursing Assessments:** Monitor for seizures and implement precautions, monitor for signs of pseudomembranous colitis (Jones & Bartlett Learning, 2020).

Heparin
- **Pharmacologic Class:** Anticoagulant
- **Therapeutic Class:** Anticoagulant
- **Dose/Frequency:** 1,180 units/hr (11.8ml/hr) - IV infusion - Continuous
- **Reason to Take:** to prevent clots postoperatively
- **Nursing Assessments:** bleeding is major adverse effect - take precautions to prevent bleeding such as no injuries, Heparin may cause thrombocytopenia (HIT) (Jones & Bartlett Learning, 2020).

Demographic Data

Date of admission: 10/08/2023

Admitting diagnosis: Sepsis from Right knee

Chief Complaint: Excruciating Pain in the Right thigh/Knee

Age of client: 71 year old

Sex: Female

Race/Ethnicity: Caucasian

Allergies: None

Code Status: attempted CPR but will change into DNR by the power of attorney (Documents not signed yet)

Weight in kgs: 72.4 kg

Height in cm: 160 cm

Psychosocial Developmental Stage: Integrity vs. Despair

Cognitive Development Stage: Formal Operational Stage

Braden Score: 9 - Severe (High Risk)

Morse Fall Score: 200 - (High Risk - Implement High Fall Risk Safety precautions)

Infection Control Precautions: Contact Isolation - MRSA (Implement contact isolation protocols and PPE)

Admission History

71 year old Female Causian-American walked into the Carle department in Richland Il with complaints of excruciating pain in the right thigh/knee. The Area was swollen and hot to the touch. The patient ROM was very limited due to the excruciating pain. Past medical history shows that the patient had a bilateral knee arthroplasty with recurrent osteomyelitis infections in the past 2 years that is current now. From the prior facility til admission of recent patient was febrile and hypotensive. Blood culture was obtain from the area of concern and results show of deep tissue infection of MRSA growth. Patient was given a broad-spectrum antibiotics, vasopressors, midodrine, and albumin. Before transferring to current location (Urbana carle hospital) the patient had consulted with orthopedic surgeon and palliative care leader about options but patient disagreed with them and asked to be transferred for higher level of care.

Medical History

Previous Medical History: Endometrial Cancer (Date: 06/2023), GERD (Date Unknown), Hx of Heart Attack(Date Unknown in Chart), HTN (Date Unknown), MRSA infection in rt. Knee (12/12/2022), PAD (Date Unknown), DVT (Date Unknown), Rheumatoid Arthritis (Date Unknown)

Prior Hospitalizations: Sepsis (10/01/2023), Fall (09/20/2023)

Past Surgical History: Right Breast Biospy (Date Unknown), Upper GI Endoscopy (07/28/2020), Colonoscopy (07/31/2020), Total Knee Arthroplasty Left (12/05/2021), Total Knee Arthroplasty Right (04/05/2022), Hysterectomy (total) abdominal (06/17/2019).

Social needs: Patient is in need of emotional support from the stress of chronic health issues regarding frequent spetic infections

Social History: Drugs - None, Alcohol - None, Drugs - None

Relevant Lab Values

BUN: 8 mg/dL (Low)

- **Normal value: 10-20 mg/dL (Pagana et al., 2018)**
- **Relevance**: Patient had Chronic Kidney disease.

Glucose: 148 mg/dL (High)

- **Normal value: 74-100 mg/dL (Pagana et al., 2018)**
- **Relevance**: Patient has Diabetes and sepsis infection can cause body glucose to increase

HgB: 7.9 g/dL (Low)

- **Normal Value: 11.0 - 16.0 g/dL (Pagana et al., 2018)**
- **Relevance:** sepsis can cause the body red blood cells to reduce due to infection process thus lowering the hemoglobin and hematocrit count.

Hct: 24.3% (Low)

- **Normal Value: 34.0 - 47.0% (Pagana et al., 2018)**
- **Relevance: s**epsis can cause the body red blood cells to reduce due to infection process thus lowering the hemoglobin and hematocrit count.

Prothrombin: 14.4 secs (High)

- **Normal Value: 11.7 - 13.5 secs (Pagana et al., 2018)**
- **Relevance: it is increased due to heparin given to patient due to Chronic heart failuure (per med chart).**

Absolute Neutrophils: 11.54 (High)

- **Normal Value: 1.6 - 7.7 x 10^3/uL (Pagana et al., 2018)**
- **Relevance: high due to infection that is going through the body systemically.**

Platelet: 579 x 10^3uL (High)

- **Normal Value:140 - 400 x 10^3uL(Pagana et al., 2018)**
- **Relevance:** it is high due to the immune response to the systemic infection causing coagulation to dysfunction.

K+ (potassium): 3.4 mmol/L (low)

- **Normal Value: 3.5 - 5.1 mmol/L (Pagana et al., 2018)**
- **Relevance**: due to dietary via NG tubes - trickle feedings

Relevant Diagnostic Imaging

X-ray KUB (10/07/2023)

- Used to view placement of NG tube
- **Results**: Tip is proximal to stomach.

Active Orders

- **Contact Isolation** - MRSA (10/07/23)
- **Vital Signs** - Continuous ((10/07/23)
- **Inspect Skin** - Pressure Ulcer in high risk areas such as back of head, elbows, wrist, heels, and coccyx (10/07/23)
- **Enteral Feeding** - nutrition (Cal:440,Protein:28g, 369 ml of free H_2O) (10/08/23)
- **Neuro Check** - monitoring LOC - (10/06/23)
- **Tele Monitoring** - Continuous - (10/06/23)
- - qshift - (10/08/2023)
- **Pneumatic Compression Stocking** - DVT Risk (02-26-2023)
- **Wound Care/Dressing change** - Inspection of Right knee incision, and bilateral lower leg wounds/calfs (10/09/2023)
- **Consult with Othropedic** - Right Knee post-procedure assessment for antibiotic space implanted (10/06/2023)

Sepsis - Pathophysiology

Disease process:

Sepsis (septicemia) is a system infection, that is caused by a infectious organisms that overwhelms the immune system and causes multi-organ compromise. Infection source can be from virus, fungus, parasite, and bacterial. Sepsis is from a overwhelming local source of infection that invades the blood vessels and circulates the body as a whole (Capriotti T., 2020). Common sites of infection include lungs, urinary tract, abdomen, pelvis, open wounds from traumas, and during surgical procedures.(Capriotti T., 2020).

S/S of disease:

Signs and symptoms include chills, confusion/delirium, fever, lightheadedness, tachycardia, skin rash, mottled skin, warm skin, and shivering (Capriotti T., 2020). Septic shock can occur in those at high-risk such as pregnancy, those with urinary catheter in placed, long-termed diabetes, advanced age >65, immunocompromised, heart conditions, and congenital disorders. Signs and symptoms of septic shock includes hypotension, disorientation/confusion, cold clammy skin, and slurred speech.

Method of Diagnosis:

Methods for diagnosis sepsis is not yet known but is evident through a series of assessments and monitoring such as assessing vital signs (temperature, heart rate, and respiratory rate), blood draws for labs (CBC, inflammatory markers), wound cultures, urine/stool samples, and image studies such as (x-rays, ultrasound, and CT scan) (Capriotti T., 2020). Other methods include labs such as monitoring hemoglobin, hematocrit, leukocytes, platelet count, and erythrocyte sedimentation rate (Capriotti T., 2020).

Treatment of disease:

Treatment for sepsis includes a broad-spectrum antibiotics to start while the testing/cultures results determine the type of organisms causing the infection. Other primary treatments include running IV fluids in the veins and vasopressors for increasing blood pressures. Insulin and pain medications are also given to the patient depending on sugar levels and non-verbal pain rating. (Capriotti T., 2020).

Relevant to patient:

This disorder is relevant to my patient due to having diagnosed with sepsis due to MRSA infection post-procedural arthroplasty, neuro checks q4hrs, has wound care/dressing change daily, having consults with infection control specialist, and also takes Fentanyl, hydrocodone/acetaminophen, and piperacillin-tazobactam. This is furthered backed up by having a surgical procedures, being advanced in age, long-term diabetes, and heart conditions such as chronic heart failure and hypertension.

Assessment	
General	Patient is disoriented but was only aware of their name and simple commands such as wiggling toes. Patient was laying in bed rest with HOB elevated at 15 degrees. Patient is somewhat alert and responsive to name and pain (only when moved), with facial grimacing due to chronic pain. Overall appearance was sedative-like and attire was appropriate for the setting/situation
Integument	Skin color is darker tone, dry/warm upon palpation with age spots generalized throughout head and extremity areas. Skin turgor was retractable almost immediately. No signs of contusions or rashes in the trunk areas and upper/lower extremities. Patient has edema in both lower legs +3. Patient has a midline incision wound in right knee with both edges approximate. Braden Score is 9 (severe - High risk for pressure ulcers). Lacerations are present in the anteriorly of the shin areas.
HEENT	**Head/Neck:** Skull and face are symmetrical. Trachea is midline with no deviations. Upon palpation trachea movement is present when the patient swallows. Carotid artery is palpable and is +2 bilaterally. All cervical lymph nodes are nonpalpable bilaterally. Eyelids have no visible discoloration, lesions, or swelling bilaterally. **Eyes:** Sclera is white and clear bilaterally. Conjunctiva is pink and moist bilaterally. Pupils (PERRLA) are round and equal, reactive to light, and are able to accommodate bilaterally. Was not able to assess 6 Extraocular movements due to patient being too sedated and scream in pain. **Ears:** No present ear tenderness upon palpation with no visible drainage or discoloration bilaterally. No visible impaction in ears bilaterally. **Nose**: Nose septum is midline. Turbinates are moist and pink in the nose bilaterally with no visible signs of bleeding. Frontal sinuses are nontender to palpation bilaterally. Has a NG tube in place for medication and tracking feedings (28ml/hr). **Teeth:** Was not able to assess the mouth due to patient not keeping it open for assessment.
Cardiovascular	Sinus Rhythm is present along with S1 and S2 sound present with no murmur or s3/s4 present. Heart rhythm is regular (Normal sinus rhythm). Upper peripheral pulses were +2 bilaterally. Popliteal pulse is +1 and anterior tibialis pulse were +1 bilaterally. Apical pulse auscultated at the midclavicular line at the 5th intercostal space (rhythm/rate is regular). Cap refill is less than 3 seconds. No signs of neck vein distention or edema in the upper/lower extremities.
Respiratory	No use of accessory muscles during respiration. Normal rate and regular pattern of respirations. Respirations are symmetrical and non-labored. Lung sounds clear throughout the anterior/posterior in the upper section bilaterally. No wheezes, crackles, or rhonchi present. No use of accessory muscle or signs of breathing distress. Lung aeration is equal bilaterally.
Genitourinary	Urine is yellow and clear. Urine output was 750ml via foley catheter. Genitals are clean. Patient is not on dialysis. Last menses is unknown.
Gastrointestinal	Diet at home is regular. Current Diet is also via tube feedings (trickle feedings). Height is 5’3” (160 cm) and Current Weight is 159.6 lbs (72.4 kg). Normoactive bowel sounds in all 4 quadrants. Last BM was 3 days ago. No pain/tenderness or mass upon palpation in all 4 quadrants. No signs of distention, drains, or wounds upon inspection. No redness, hot to touch, drainage, or swelling present. No ostomy present.

Musculoskeletal	Neurovascular is intact with no impaired blood flow or damage to the peripheral nerves in the extremities bilaterally. Patient is able to perform all ROM passively in upper and lower extremities bilaterally (limited due to severe pain). Muscle strength is 2/5 in upper and lower bilaterally. May need ADL assistance. Fall Risk score is 100 (High Risk - recommend the implementation of Fall Prevention Measures).
Neurological	PERRLA is equal, round and reactive. Muscle Strength in both upper and lower extremity is equal 2/5 bilaterally. Patient is disoriented except for name and simple commands and pain stimuli. Speech is slurred but sensory are normal. LOC is 8.
Most recent VS (highlight if abnormal)	**Time: 1045** **Temperature: 97.8°F** **Route: Axillary** **RR: 10** **HR: 73** **BP: 123/67 mmHg** **MAP - 65** **Oxygen saturation: 96% on 2L via Nasal Cannula** **Oxygen needs: None**
Pain and Pain Scale Used	Pain is 6 Pain Scale: Critical Care Pain Observation (CPOT) 1 - 8
Braden Score	9 (Severe High Risk)
Morse Fall Scale	100 (High Risk - Standard Fall Precaution)

Nursing Diagnosis 1 **Chronic Low Self-Esteem related to ineffective coping towards the current situation of infection affecting overall health as evidence by patient stating (towards the end of clinical time) that she doesn't want to be in the hospital, she did not care what happens to her, and that she upset about how she is not able to do anything for themselves.**	**Nursing Diagnosis 2** **Acute Pain related to pain from current hospitalization as evidenced by taking Fentanyl and hydrocodone-acetaminophen for pain, patient having severe pain on right knee upon admission and could barely ambulate extremity (even passively) due to severe pain.**	**Nursing Diagnosis 3** **Risk for Shock related to systemic infection as evidenced by MRSA systemic infection, taking piperacillin-tazobactam for the septic infection, and having an antibiotic spacer in the right knee in place.**
Rationale This is relevant to my patient because for most of the clinical she was disoriented until the last hour when the nurse had talk to her and she stated that she was upset about her situation and how she is not able to tend to herself.	**Rationale** This is relevant to my patient due to having severe pain even with passive range of motion assistance and upon awakening the patient, they will scream in pain (even with pain meds given prior)	**Rationale** This is relevant to my patient due to having a systemic infection that can potentially cause a shock to the patient from the infection.
Interventions **Intervention 1:** Teach self-healing techniques such as guided imagery, yoga, and praying, to prevent anxiety and keeping the patient frame in mind. **Intervention 2:** spend time with patients to listen to their thoughts and ensure they are being heard.	**Interventions** **Intervention 1:** Assess for behavioral cues for pain and administer pain medication as prescribed. **Intervention 2:** Perform comfort measures to promote relaxation such as massage, bathing, repositioning and relaxation techniques.	**Interventions** **Intervention 1:** Assess and monitor the patient's vital signs and level of consciousness. **Intervention 2:** Administer IV fluids to maintain fluid volume.
Evaluation of Interventions The patient will be able to cope with the current situation (after being completely oriented to themselves/situation) before discharge. Spending time with the patient will make them feel like they are being heard and increase self-esteem. Though the nursing student was not able to assess completely.	**Evaluation of Interventions** The patient will be able present behavioral cues of pain being controlled when reassessed 2 hours after pain meds are given. The patient will use alternative pain control measures such as relaxing, and repositioning techniques. Though the nursing student was not able to assess completely.	**Evaluation of Interventions** The patient will continue to have hemodynamics maintained and level of consciousness will not deteriorate during the entire stay of hospitalization. Though the nursing student was not able to assess completely.

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Capriotti, T. (2020). *Davis advantage for pathophysiology: introductory concepts and clinical perspectives*. F. A. Davis Company.

Jones & Bartlett Learning. (2020). *2021 Nurse's drug handbook* (20th ed.).

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