

Medications

- 1. Famotidine**
 - Pharmacological: histamine H2-receptor antagonist
 - Therapeutic: H2 Blocker (Vallerand & Sanoski, 2023).
 - The client is taking this medication to prevent the development of peptic ulcers.
 - The nurse should monitor vital signs and monitor the patient for confusion (Vallerand & Sanoski, 2023).
- 2. Methylprednisolone**
 - Pharmacological: Corticosteroid
 - Therapeutic: Antiasthmatic (Vallerand & Sanoski, 2023).
 - The client is taking this medication to reduce inflammation of her lungs
 - The nurse should monitor breath sounds and signs of long-term use should be avoided in children. Do not use in acute asthma attacks (Vallerand & Sanoski, 2023).
- 3. Piperacillin-tazobactam (Zosyn)**
 - Pharmacological: extended spectrum penicillin
 - Therapeutic: anti-infective
 - The client is taking this medication to fight off the patient's cellulitis infection. This is her second antibiotic because vancomycin is now an allergy for this patient.
 - The nurse should monitor lab values, vital signs, and pain level. The nurse should also regularly assess for signs of infection. To see if the medication is effective.

Demographic Data

Admitting diagnosis: Cellulitis

Age of client: 8 years of age

Sex: Female

Weight in kgs: 48.8kg

Allergies: Vancomycin (new allergy as of 06/07/2023)

Date of admission: 06/03/2023

Psychosocial Developmental Stage: Industry vs. inferiority

Cognitive Development Stage: Concrete operational stage

Admission History

Pathophysiology

Disease process: Cellulitis is common and occurs whenever common bacteria from the body's skin and/or other bacteria are allowed into a break in the skin of the patient. If left unchecked, these bacteria that has entered the skin can now grow into the deep and subcutaneous tissue. This bacteria growth then causes inflammation of the dermis layers, resulting in cellulitis (Brown & Hood Watson, 2022). Bacteria likely entered in from the small pimple that was noted from her early walk-in clinic visit on 06/03/2023. This bacterium then began to grow, causing inflammation of the patient's neck and now upper chest.

S/S of disease: Some signs and symptoms of cellulitis include all symptoms related to inflammation: redness, swelling, warmth to the area, and tenderness to the effected area. The patient may also experience constitutional symptoms including malaise, fever, and fatigue (Brown & Hood Watson, 2022). This patient has experienced nearly all the classic symptoms of cellulitis.

Method of Diagnosis: Two of the following need to be present on the patient to make a diagnosis of cellulitis: warmth in the effaced area, erythema, edema, or tenderness. Imaging can also be used to diagnose cellulitis; however, it is not recommended by the infectious disease society of America (Brown & Hood Watson, 2022). This patient has all four defining characteristics of cellulitis and had CT results show inflammation consistent with cellulitis on her anterior neck.

Treatment of disease: The treatment for cellulitis includes a regimen of oral or IV antibiotics to try and kill the bacteria found within the layers of the dermis (Brown & Hood Watson, 2022). This patient has been receiving IV antibiotics for four days thus far, and she will likely need to be on antibiotics for longer due to her newfound vancomycin allergy.

The patient was presented to a walk-in clinic for a small pimple on her neck, neck pain, swelling, and redness. Tylenol was given by the mother, but it did not help. The patient was then sent to Carle ED on 06/03/2023 for further testing. A CT scan was performed, showing inflammation on the neck anterior to the thyroid consistent with cellulitis. The patient was then admitted to NT8 to treat her cellulitis with IV antibiotics. The patient has been receiving vancomycin for 4 days, and the cellulitis has spread from a localized portion of the pt.'s anterior neck to the pt.'s upper chest and back. The pt. likely has a sensitivity to vancomycin based on her elevated vancomycin trough and elevated creatinine; piperacillin-tazobactam is now being given instead. Pathology has been consulted, and a skin marker has been used to mark the progression of cellulitis each day.

Relevant Lab Values/Diagnostics

1. Glucose: 118 (normal range: 74-100)

-Higher glucose can weaken the patient's immune system. Bacteria grows better in environments higher in resources, and sugar is a resource for bacteria.

2. Creatinine: 1.08 (normal: 0.55-1.02)

3. Vancomycin trough: 44.5 (normal: 5-20)

-The creatinine and vancomycin are both elevated due to a sensitivity to vancomycin. This patient has not history of allergies, but vancomycin is now an allergy for this patient. The vancomycin is known to cause renal impairment, so this is likely why her creatinine is elevated shortly after receiving the medication. The vancomycin trough is high because the patient's kidneys are impaired, and the patient is having a hard time processing and excreting the medication.

4. C-reactive protein: 5.27 (normal: 0.00-0.50)

-C-reactive protein is a lab used to track the progress of an infection. C-reactive protein is elevated with inflammation and infection; this patient has both.

5. WBC: on admission: 16.09 (normal:4.27-11.4)

6. WBC current: 10.72 (normal:4.27-11.4)

-The trend of her WBC is moving in a good direction, showing that her total number of WBC have gone down since admission

7. CT scan of her neck was performed and showed acute inflammation anterior to the thyroid consistent with cellulitis.

Medical History

Previous Medical History: N/A

Prior Hospitalizations: N/A

Past Surgical History: She has had 2 surgeries: an inguinal hernia repair (05/11/2016) and an umbilical hernia repair (03/11/2016).

Social needs: The pt. lives at home with her mother. Both the patient and the mother are overweight and could benefit from dietary education. Providing the family with financial and social work resources could also be beneficial.

Active Orders

1. Vital signs Q4
 - a. To monitor for changes and ensure the patient is maintaining stable vital signs.
2. B/P checks Q8
 - a. To monitor for changes and ensure the patient is maintaining stable vital signs.
3. Maintain IV access.
 - a. IV access allows for effective medication administration of IV antibiotics and other medications.
4. Pediatric airway status
 - a. Airway status should always be assessed and maintain for patient safety.
5. Strict I&O
 - a. To monitor the patient's hydration status and electrolyte balance.
6. Notify the provider if fever is 101 degrees F or higher.
 - a. This is done to monitor reactions to medications, immune status of the patient, and to be able to administer antipyretics if necessary.

Assessment

General	The patient is alert and oriented to person, place, time, and situation. The patient has some mild pain with movement of her neck but in no acute distress otherwise. The pt. is well-groomed and in a hospital gown.
Integument	The patient's skin is warm and dry to the touch. The pt. has good skin turgor. Her skin is red and swollen around her anterior/posterior neck and upper anterior/posterior chest. The skin where her cellulitis is present appears inflamed and is warmer than other areas of her body.
HEENT	Head and neck are symmetrical. Bilateral carotid 2+, Neck has pain with ROM, trachea is midline, PERRLA, EOMs intact. Pt.'s hearing is intact. Ears appear without deformities. Septum is midline, no visible bleeding from the nose. Sinuses nontender from palpation. Posterior pharynx and tonsils are moist and pink without exudate. Tonsils 1+ Uvula is midline, soft palate rises and falls symmetrically, Hard palate intact. Dentition is good, oral mucosa overall is moist and pink without lesions.
Cardiovascular	Clear S1 and S2 without murmurs gallops or rubs. PMI palpable. Normal rate and rhythm. Pulses 2+ throughout bilaterally. Capillary refill less than 3 seconds fingers and toes bilaterally. 1+ edema at both lower extremities. No edema to upper extremities.
Respiratory	Normal rate and pattern of respirations, respirations symmetrical and non-labored, lung sounds clear throughout anterior/posterior bilaterally, no wheezes, crackles, or rhonchi noted.
Genitourinary	N/a
Gastrointestinal	Bowel sounds are normoactive in all four quadrants. Abdomen is soft, nontender, no organomegaly or masses noted upon palpation of all four quadrants. No CVA tenderness noted bilaterally.
Musculoskeletal	All extremities have full ROM. Hand grips and pedal pushes and pulls demonstrate normal and equal strength. Balanced and smooth gait.
Neurological	PERRLA
Most recent VS (highlight if abnormal)	<p>Time: 16:00</p> <p>Temperature: 100.3 degrees F</p> <p>Route: axillary</p> <p>RR: 24 rpm</p> <p>HR: 93 bpm</p> <p>BP and MAP: 144/98 and 113 MAP</p> <p>Oxygen saturation: 98%</p> <p>Oxygen needs: none</p>
Pain and Pain Scale Used	Faces: the patient rated her pain with movement of her neck a 4/10 and a 2/10 not moving her neck on the faces scale.

<p align="center">Nursing Diagnosis 1</p> <p>Impaired skin integrity related to disease process and the patient’s unwillingness to move as evidence by redness and blisters and her refusal to get out of bed to urinate (Phelps, 2020).</p>	<p align="center">Nursing Diagnosis 2</p> <p>Impaired mobility related to reluctance to initiate movement as evidenced by inability to prompt herself to get up to the bathroom (Phelps, 2020).</p>	<p align="center">Nursing Diagnosis 3</p> <p>Deficient knowledge related to insufficient knowledge of disease process as evidenced by the patient experiencing this illness for the first time (Phelps, 2020).</p>
<p align="center">Rationale</p> <p>This diagnosis was chosen because she has been wetting herself in bed without telling others. Her skin is a risk for sores if she continues to refuse to get out of bed to urinate. She has been hospitalized for 4 days, and she needs to stay clean and dry.</p>	<p align="center">Rationale</p> <p>This diagnosis was chosen because it is very important for an 8-year-old to continue to be mobile. Mobility is important for maintaining general strength and well-being. Lack of mobility can cause skin breakdown, atrophy, and a slower recovery.</p>	<p align="center">Rationale</p> <p>This diagnosis was chosen because the patient and her mother are not very educated. Education should be a priority when treating a patient with a new disease they have not experienced before.</p>
<p align="center">Interventions</p> <p>Intervention 1: Inspect patient’s skin every 8 hours, describe and document skin condition, and report changes to provide evidence of the effectiveness of skin care regimen (Phelps, 2020).</p> <p>Intervention 2: Encourage adherence to other aspects of health care management to control or minimize effects on skin (i.e., getting up to use the restroom) (Phelps, 2020).</p>	<p align="center">Interventions</p> <p>Intervention 1: Provide progressive mobilization to the limits of patient’s condition (bed mobility to chair mobility to ambulation) to maintain muscle tone and prevent complications of immobility (Phelps, 2020).</p> <p>Intervention 2: Instruct patient and family members in ROM exercises, transfers, skin inspection, and mobility regimen to help prepare patient for discharge (Phelps, 2020).</p>	<p align="center">Interventions</p> <p>Intervention 1: Find a quiet, private environment for teaching patient and support person. Freed from distractions, patient and support person will learn more effectively (Phelps, 2020).</p> <p>Intervention 2: Select teaching strategies (such as discussion, demonstration, role-playing, and visual materials) appropriate for patient’s individual learning style (specify) to enhance teaching effectiveness (Phelps, 2020).</p>
<p align="center">Evaluation of Interventions</p> <p>These interventions will help this patient stay ahead of skin breakdown and possible infections. Inspecting the skin regularly must be done to recognizes changes in skin integrity. Encouraging the patient to get out of bed and to call when she needs to use the restroom will prevent the patient from becoming dirty and wet for any period.</p>	<p align="center">Evaluation of Interventions</p> <p>These interventions are important to keep the patient mobile while she is sick in the hospital. Her illness has made her less inclined to get up due to her pain with movement and her IV line, but these interventions can be used to assist her in continuing to get up and move during her stay. Planning for discharge while she is in the hospital is essential to maintaining her health and wellness.</p>	<p align="center">Evaluation of Interventions</p> <p>Private environments without distractions are essential to effective teaching and learning. The presence of a television in the room made it especially difficult to effectively communicate with the patient. Sometimes, just telling the patient what they <i>have</i> to do isn’t always effective, so using other teaching methods can be helpful to the patient when they are not understanding.</p>

References (3):

Brown, B., & Hood Watson, K. (2022, August 8). *Cellulitis*. National Library of Medicine. <https://www.ncbi.nlm.nih.gov/books/NBK549770/>

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

Vallerand, A. H., & Sanoski, C. A. (2023). *Davis's drug guide for Nurses* (17th ed.). F.A. Davis.