Medications

diphenhydramine (antihistamine/antianaphylactic adjunct). The client is taking this medication because she developed an allergic reaction to the amoxicillin that they gave her for the UTI. Before administration, the nurse should make sure the dose is safe for the child. The nurse should also check IV patency since the patient is receiving the medication via IV. **The dose is safe and in the therapeutic range.**

meropenem (Carbapenem/ Antibiotic). This was the IV antibiotic of choice for the patient to receive for her UTI. Prior to administration, the nurse should make sure the dose is safe for the child. The nurse should also check IV patency since the patient is receiving the medication via IV. **The dose is safe and in the therapeutic range.**

Acetaminophen (Nonsalicylate/Nonpyretic). This medication is used if the patient is feeling and mild or moderate pain. The nurse should perform a pain assessment before giving the medication. They should also make sure the dose is safe for the child**. The dose of 280 mg is too high of a dose for the patient.**

D5-0.9% NaCl- This IV fluid is used for the patient because it needs to be run with the meropenem. The nurse should assess IV patency and flow rate before starting the administration.

Demographic Data

Admitting diagnosis: Urinary Tract Infection

Age of client: 4 years old

Sex: Female

Weight in kgs: 20.6 kg

Allergies: amoxicillin

Date of admission: 9-26-24

Psychosocial Developmental Stage: Initiative vs guilt

Cognitive Development Stage: Preoperational

Admission History

Pathophysiology

Disease process: The urinary tract is a sterile area of the body. Any obstruction to urinary outflow will make the bladder more susceptible to infections (Capriotti, 2020). When the host's immune system is weakened, urine can act as a good medium for bacteria to grow, thus leading to a bacterial infection (Capriotti, 2020). If left untreated urosepsis can be a complication of a urinary tract infection (UTI) (Capriotti, 2020).

S/S of disease: Manifestations of a UTI are commonly seen as frequency, pain, or burning when urinating, and urgency (Capriotti, 2020). The symptoms associated with UTIs are seen due to the inflammation and edema of the urethra and bladder (Capriotti, 2020). No actual physical changes are noted in the patient, but lab work for a UTI commonly reveals elevated white blood cells due to infection and positive findings for leukocyte esterase in the urine.

Method of Diagnosis: Both a urinalysis and a urine culture are used to diagnose a UTI. The urinalysis will reveal the components of the blood: red blood cells, leukocyte esterase, and nitrates (Capriotti, 2020). The urine culture will reveal the bacteria causing the UTI and the colony count (Capriotti, 2020).

Treatment of disease: The treatment for UTIs is an antibiotic. The type of antibiotic used to treat the infection is dependent on the bacteria that is causing the infection. Patient was given an oral antibiotic, but she had issues swallowing it and keeping the medication down. She was switched to IV meropenem.

This patient is a four-year-old girl who presented to the emergency department due to issues with taking the oral ciprofloxacin antibiotic for her urinary tract infection. UTI was attempted to be treated with oral medication, but she was unable to keep the medication down. She has a history of juvenile idiopathic arthritis. She has a cast on her left leg due to a fracture.

Relevant Lab Values/Diagnostics

Leukocyte esterase- small, (negative). A positive leukocyte esterase is indicative of a UTI infection (Pagana et al., 2023).

WBC- 53uL (0-25 uL). Increased WBC can signify a bacterial infection in the urinary tract (Pagana et al., 2023).

Absolute immature granulocyte- 0.14 10^3 uL (0.00 – 0.06 10^3 uL). Immature granulocytes are a type of white blood cell. If there is an increase of granulocytes that means that the body is beginning to fight some kind of infection (Pagana et al., 2023).

CBC w/diff- This complete blood count showed that there was an increase in immature granulocytes, which is a sign of an infection in the body.

Basic metabolic panel- The basic metabolic panel is commonly used to assess the overall health of a person. The results showed high levels of chloride and CO2 but once reviewing the values for pediatric patients, they were within normal ranges.

UA w/ reflex culture if indicated- this diagnostic test showed that there was leukocyte esterase in the urine and an increased amount of white blood cells.

Urine culture, reflexed- shows no growth of bacteria from her UTI in one day.

Medical History

Previous Medical History: Diagnosed with Juvenile idiopathic arthritis.

Prior Hospitalizations: She was referred from Shriners Hospital for bacteriuria.

Past Surgical History: Not available

Social needs: She has a family history of heroin use, her mother does not have custody of her, and her father isn't present in her life. She will probably need some type of family counseling at some point in her life.

Active Orders

Pulse Ox- The patient's O2 stat needs to be above a 92%. The pulse ox allows us to maintain a constant reading of the patient's oxygen.

BP- Blood pressure only needs to be checked q8 and if the patient is awake.

IV- Since the patient is receiving IV antibiotics, we need IV access and make sure the IV is patent and able to use.

Vital Signs- vital signs are used to see if there is a worsening or improvement of the patient's conditions.

I&Os- intake and output are being monitored because the patient has a UTI and we need to see if they are able to urinate.

Notify physician- The physician should be notified if the patient's temperature rises above 101F. High temperature are a sign of infection.

Consult CLS- this consult was for the specialist to help relax the patient for the insertion of the IV.

Assessment	
General	Upon entering the patient's room, the patient had just woken up from a nap and was slightly cranky and irritated. However, she warmed up after a while and she was very pleasant and cooperative to assess. She became very energetic and was ready to go out and play. She was A/Ox4.
Integument	The patient's skin color was appropriate for her ethnicity. She was warm and dry, with slight swelling on her left ankle and left hand due to her arthritis. She had a bruise on her left hand due to a blown vein from the IV. She had good skin turgor. Capillary refill less than three seconds.
HEENT	Head and neck are symmetrical with nose and trachea midline with no deviations. Clear oral mucosa and good dentition. Thyroid is palpable with no noted nodules. Bilateral pulses are palpable and 2+.
Cardiovascular	S1 and S2 are clear with no murmurs or gallops. Normal rate and rhythm.
Respiratory	Lung sounds are clear and bilateral with no rhonchi or wheezing. Normal rate and pattern of respiration. Lung sounds clear.
Genitourinary	Patient was wearing a diaper due to frequent urination due to UTI. Guardian reported that the patient had not complained of any burning or pain when urinating.
Gastrointestinal	Abdomen was soft, nontender, with no masses or lumps felt upon palpitation. Bowel sounds were normoactive. Patient had a bowel movement earlier in the day.
Musculoskeletal	The patient has a femur fracture of the left leg. She has a cast on it. She can move her toes in both legs. Upper bilateral pulses are palpable and present. Pulses on her right leg are bilateral and present. All upper extremities and right leg have full range of motion. Hand grips are of equal strength.
Neurological	Patient was alerted to time, person, and place. A/Ox4 PERRLA. Unable to stand up due to cast.
Most recent VS (highlight if abnormal)	**Time: 1615** **Temperature: 97.8** **Route: oral** **RR: 23** **HR: 120** **BP and MAP: 117/56** **Oxygen saturation: 96%**

	Oxygen needs: room air
Pain and Pain Scale Used	The patient was happy (big smiley face) in the FACES pain scale.

Nursing Diagnosis 1	Nursing Diagnosis 2	Nursing Diagnosis 3
Rationale Risk for peripheral neurovascular dysfunction in relation to left femur fracture.	**Rationale** Impaired physical mobility related to femur fracture as evidenced by full leg cast on the left leg.	**Rationale** Risk for urinary retention in relation to current urinary tract infection.
Interventions **Intervention 1:** The nurse should have the patient move their toes every four hours until discharge to detect any signs of impaired circulation (Phelps, 2023). **Intervention 2:** The nurse should teach the patient's guardian to recognize the symptoms of peripheral neurovascular dysfunction, like numbness, pain, and tingling (Phelps, 2023).	**Interventions** **Intervention 1:** The nurse should perform range of motion exercise on the joints at least once every shift (Phelps, 2023). **Intervention 2:** The nurse can also teach the patient's caregiver how to perform range of motion exercise, as well as how to transfer and how to inspect the skin (Phelps, 2023).	**Interventions** **Intervention 1:** The nurse should monitor the patient's intake and output and make sure they are somewhat equal values (Phelps, 2023). **Intervention 2:** The nurse should monitor what the patient's voiding patterns are (Phelps, 2023**).**
Evaluation of Interventions By the time the patient is discharged they will have not experienced any disability related to peripheral neurovascular dysfunction (Phelps, 2023).	**Evaluation of Interventions** The patient should be able to perform range of motion exercises and be able to wiggle their toes in the affected leg (Phelps, 2023).	**Evaluation of Interventions** By the time the patient is discharged the patient will empty their bladder and their urinalysis will remain normal (Phelps, 2023).

References (3):

Capriotti, T. (2020). *Davis advantage for pathophysiology: Introductory concepts and clinical perspectives* (2nd ed.). F.A. Davis.

Pagana, K. D., Pagana, T. J., & Pagana, T. N. (2023). *Mosby's diagnostic and laboratory test reference* (Sixteenth edition). Elsevier.

Phelps, L. L. (2023). *Nursing diagnosis reference manual* (Twelfth ed.). Wolters Kluwer