Student Name: Courtney David

Medical Diagnosis/Disease: Urinary Tract Infection

NCLEX IV *(8)*: Physiological Integrity/Physiological Adaptation

Anatomy and Physiology
Normal Structures

Urinary system function is to filter blood and create urine as a waste by- product. Organs in the urinary system include the 2 kidneys, 2 ureters, renal pelvis, bladder and urethra. The body then takes the nutrients from food and coverts them to energy. The kidneys perform and manufacture urine while the other organs provide temporary storage reservoirs for urine, or they can act as transportations channels to carry it from one body region to another.
Nephrons-responsible for forming urine
The functions of the urinary system include filtering, waste processing, elimination, regulation and producing the enzyme renin which helps regulate BP and the hormone erythropoietin that stimulated the production of red blood cells in the bone marrow.

Pathophysiology of Disease

Infection presents in any part of the urinary system, such as the kidneys, bladder, ureters and urethra. Most of the infections involves the lower urinary tract: bladder and the urethra. Infection occurring in the upper urinary tract (kidneys is called pyelonephritis and when it occurs in the lower urinary tract (bladder) it's called cystitis. Pathogenic bacteria ascend from the perineum and rectum, which results in urinary tract infections in women, E. Coli is the most common organism in uncomplicated UTI. The defense mechanism of the Urinary tract include the epithelial cells that line the urinary tract and are the first line of defense against pathogens. They secrete pro-inflammatory cytokines and antibacterial agents.

NCLEX IV *(7)*: Reduction of Risk

Anticipated Diagnostics

Labs

CBC
Basic metabolic panel
Blood cultures

Additional Diagnostics

Urinalysis
Urine Culture
Urine Dipstick
Bladder Scan
CT
U/S
Cystoscopy

NCLEX II *(3)*: Health Promotion and Maintenance

Contributing Risk Factors

Women
Sexual Activity
Catheter use
Suppressed immune system
Blockages in the urinary tract
Recent urinary procedure
Diabetes
Dehydration
Feminine products

Signs and Symptoms

-Strong urge to urinate that doesn't go away
- burning when urinating
-frequent urinating
-small amount of urine
-urine is cloudy
-urine appears red, bright pink or dark brown (cola colored)
-strong smelling urine
-pelvic pain (more in women)

NCLEX IV *(7)*: Reduction of Risk

Possible Therapeutic Procedures

Non-surgical
Straight Cath (reduce bladder distension and reduce stagnant urine)
Insert Foley
Bladder training
Surgical

Recurrent UTI infections:
ureteral reimplantation
Bladder neck surgery

Prevention of Complications

(What are some potential complications associated with this disease process)

-Repeated infections
-Kidney damage (potentially permanent kidney damage)
-Narrowed urethra in men having repeated infections
-Sepsis

NCLEX IV *(6)*: Pharmacological and Parenteral Therapies

Anticipated Medication Management

NCLEX IV *(5)*: Basic Care and Comfort

Non-Pharmacologic Care Measures

NCLEX III *(4)*: Psychosocial/Holistic Care Needs

What stressors might a patient with this diagnosis be experiencing?

Antibiotics (Levofloxacin for ATI Simulation 1)
*PO or IV antibiotics
Urinary Analgesics

Wipe front to back
Drink plenty of water
Encourage cranberry juice

Urinating frequently
Re-occurring infections
Self-image

Client/Family Education

List 3 potential teaching topics/areas

•Educate on the importance of wiping front to back (female patients)

• Encourage and educate patient on urinating after sexual activity

•Educate on importance of reporting any discomfort while urinating to treat early and not let an UTI go untreated.

- Educate on risk for falls for elderly, as urinating more frequent especially at night can cause a risk for falls, educate or night lights and removing clutter around the walkway to the bathroom.

NCLEX I *(1)*: Safe and Effective Care Environment

Multidisciplinary Team Involvement

(Which other disciplines do you expect to share in the care of this patient)

Urology
Lab
Case manager
MD

Potential Patient Problems (Nursing Diagnoses)

To Be Completed Before the Simulation

Anticipated Patient Problem: Impaired Urinary Elimination

Clinical Reasoning: frequent urination, urgency, hesitancy, dysuria

Goal 1: Patient will have a normally urinary elimination pattern evidenced by absence of dysuria, urgency and oliguria during my time of care.

Goal 2: Patient will have a urine output of 30ml/hr of clear yellow urine during my time of care.

Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include timeframes.	**Multidisciplinary Team Intervention** (Prework) What will you do if your assessment is abnormal?
Assess WBC daily (UTI decreasing)	Administer Levofloxacin IVPB per md orders during my time of care.
Assess urine color q4hr	Educate patient on reporting any blood in urine during my time of care.
Assess bladder distention daily	Encourage Kegel exercises during my time of care.
Assess urine amount q8hr	Encourage fluid intake (cranberry juice) q2hr/PRN
Assess foley catheter placement daily	Educate on importance of catheter care (cleaning, bag below, no kinked tubing) during my time of care.
Assess for recurrent UTI from patient history during my time of care	Educate on importance of wiping front to back (females) during my time of care.

To Be Completed Before the Simulation

Anticipated Patient Problem: Acute Pain: Pelvic/groin area

Clinical Reasoning: facial grimace, burning on urination, spasms in lower back

Goal 1: Patient will report a pain scale of 0/10, no facial grimacing and no spasms during my time of care.

Goal 2: Patient will participate in non-pharmacological action such as guided imagery or deep breathing to decrease pain during my time of care.

Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include timeframes.	**Multidisciplinary Team Intervention** (Prework) What will you do if your assessment is abnormal?
Assess pain scale rating q8hr	Administer Acetaminophen for pain q4hr
Assess bladder spasms daily	Administer Antispasmodics for spasms q6hr
Assess Labs (CBC, Urinalysis) daily	Encourage patient to void frequently to empty bladder q2hr
Assess characteristics of pain (sharp, throbbing, aching) daily	Apply heating pad or ice therapy to suprapubic area or lower back q2hr
Assess fluid intake q8hr	Educate on importance of avoiding coffee, tea, ETOH, soda and spices due to urinary irritates during my time of care.
Assess willingness to try non-pharmacological measures to assist with pain daily	Encourage guided imagery, deep breathing or meditation for pain during my time of care.

ACTIVE LEARNING TEMPLATE: *Medication*

STUDENT NAME Courtney David

MEDICATION Levofloxacin (IVPB) REVIEW MODULE CHAPTER _____

CATEGORY CLASS Antibiotic (Fluroquinolone)

PURPOSE OF MEDICATION

Expected Pharmacological Action

Interfers with bacterial DNA synthesis. Exerts antimicrobial activty via inhibition of two key bacterial enzymes including DNA gyrase and topoisonmerase IV. invades aerobic gram-positive and gram-negative bacteria and may carry some activity against certain species of anaerobic bacteria.

Therapeutic Use

Treat bacterial infections throughout the body

Complications

Nausea, diarrhea, headache, dizziness, insomina, Hypoglycemia, hunger, sweating, tachycardia, anxious, nerve issues, mood changes, sudden pain, swelling or brusing around any joints known to cause tendinitis/rupture. May cause yeast infections if antibiotic dose is too strong

Medication Administration

25mg/mL

750mg/150mL

250mg/50mL

250mg

500mg

Contraindications/Precautions

Hypersenstivty to medication or other quinolone antibiotics, hypokalemia, pregnancy

PC: patients >60yrs old, electrolyte imbalances, bradycardia, CHF, hepatic or renal impairments, diabetes mellitus, depression hx or treatment

Nursing Interventions

Assess infection signs and symptoms, obtain all specimens and cultures BEFORE administrating medication, observe for any side effects of medications, may increase serum AST, ALT, LDH, bilirubin, alkaline phosphate, may affect serum glucose as well

Interactions

Drug interactions: antacids that contain magnesium or aluminum such as Rolaids, theophylline, diuretics, heart rhymth medications, insulin, depression medications, steriods, blood thinners, NSAIDS

Client Education

Avoid exposure to sunlight

Avoid NSAIDS

Wait atleast 4hrs before taking any anacids and 2hrs after taking this med

Finish full course of antibiotic for full effect

Do not double dose, take as prescribed

Drink atlease 1500-2000ml each day

Evaluation of Medication Effectiveness

Bacterial infection is treated

ACTIVE LEARNING TEMPLATE: *Medication*

STUDENT NAME Courtney David

MEDICATION Lorazepam REVIEW MODULE CHAPTER_____

CATEGORY CLASS Antianxiety, sedative hypnotic, antiemetic

PURPOSE OF MEDICATION

Expected Pharmacological Action

Enhances action of inhibitory neurotransmitter gamma-aminobutyric acid (GABA) in CNS, affecting memory, motor, sensory and cognitive function.

Therapeutic Use

PO: mangagement of anxiety disorders, short term relief of symptoms of anxiety, anxiety associated with depressive symptoms.

Complications

Side Effects: (frequent) Drowsiness, dixxiness

(Rare): weakness, ataxia, headache, hypotension, nausea, vomiting, confusion, injection site reaction

Medication Administration

Anxiety: PO (adults, Elderly) initally 0.5-2mg q4-6h as needed up to 10mg/day.

(adolescents, children 12yrs and older: 0.25-2mg/dose 2-3 times day MAX dose: 2mg

Status Epilepticus: 4mg given at maxiumum rate of 2mg/min may repeat in 3-5 min.

MAX dose: 5mg

Give with food, tablets may be crushed, dilute oral soultion in water, jucie, soda or semisolid food

Contraindications/Precautions

Contraindications: hypersensitivity to lorazepam, other benzodiazipines. Acute narrow-angle glaucoma, severe respiratory depression (except during mechanical ventilation)

Precautions: neonates, renal/hepatic impairment, compromised pulmonary function, depression, concomitant use of CNS depressants: pts at high risk for suicidal ideation and behavior; history of drug abuse and misuse, drug-seeking behavior, dependency.

Nursing Interventions

Monitor BP, RR, HR

diligently screenf or suicidal ideation and behavior, new onset or worsening of anxiety, depression, mood disorder. Screen for drug abuse and misuse, drug seeking behavior. Assess for paradoxical reaction, particulary during early therapy. Evaluate for therapeutic response: calm facial expressions, decreased restlessness, insomnia, decreased in seizure-related symptoms.

Interactions

Drug: Valproic acid may increase concentration/effects. ETOH, other CNS depressants (Morphine, Phenobarbital) may increase CNS depression.

Herbal: herbals with sedative properties (Chamomile, Kava Kava, valerian) may increase CNS depression

Lab Values: Therapeutic Serum level: 50-240ng/ml

Client Education

Drowsiness usually subsides furing continued therapy, avoid task that require alertness, motor skills until response to drug is established Smoking reduces drug effectiveness. Do not stop abruptly, do not use ETOH, or any other CNS depressants. Contraception recommended for long term theraoy, seek immediate medical attention if thought of suicide, new onset or worsening of anxiety, depression or changes in mood occur.

Evaluation of Medication Effectiveness

Mood Improves, less anxious, RR decreases, HR decreases, BP decreases, less/none suicidal ideation, No seizures.

ATI Virtual Clinical Questions and Reflection:

1) Identify two members of the healthcare team collaborating in the care of this patient:
   a. **_RN-Craig_**
   b. **__Provider-Dr.Baxtor_**
2) What were some steps the nursing team demonstrated that promoted patient safety?
   a. **_during assessment, J.J was SOB and oxygen as applied and increased as needed.**
   b. **_Assessed J.J skin for breakdown and treated the stage 2 pressure injury right away**
   c. **_The provider and Ortho surgeon determined that it wasn't safe for J.J to undergo hip surgery and found alternative option for her hip fracture.**
3) Do you feel the nurse and medical team utilized therapeutic communication techniques when interacting with individuals, families, and health team members of all cultural backgrounds?
   a. If **yes**, describe: Yes, All members of J.J care team worked together for the patient safety by communicating effectively and in a timely manner, set expectations for each other in assisting in the care.
   b. If **no**, describe: _____
      _____

Reflection

1) Go back to your Preconference Template:
   a. Indicate (circle, star, highlight, etc.) the components of your preconference template that you saw applied to the care of this patient.
2) Review your Nursing Process Form: Did you select a correct priority nursing problem?
   a. If **yes,** write it here: _____
   b. If **no,** write what you now understand the priority nursing problem to be:

   Decreased Cardiac Output
3) Review your Patient Problem Form: Did you see many of your anticipated nursing assessments and interventions used?
   a. Were there interventions you included that *were not* used in the scenario that could help this patient?
      i. If **yes**, describe: _some of the interventions I would include are catheter care, continue Levofloxin to help treat the infection, and due to the agitation and restlessness attempt to try guided imagery or meditation with J.J to calm her down.
      ii. If **no**, describe:
      _____
      _____
4) After completing the scenario, what is your patient at risk for developing?
   a. Distributive Shock

b. Why? _admitted for Urosepsis and this could turn into sepsis due to the widespread of infection from the urinary tract, this means that the infection is present in her blood. J.J was showing signs such as restlessness due to the decreased cerebral perfusion and this is a finding in early stages of shock. _____

5) What was your biggest "take-away" from participating in the care of this patient? How did this impact your nursing practice?

My biggest take away from this simulation was just because a patient gets admitted for one thing shouldn't be your only focus, things can change so quickly, with things changing so quickly you have to ensure you are receiving accurate past medical history because something like CHF in this case can be causing the issues for this patient. Also getting to see medications taken at home with elderly clients is very important because you get to see firsthand what they have in regard to the same medication but different doses. Also be prepared for you top priority to change at any given time because as we know it doesn't always stay the same throughout the patients stay in the hospital.

To Be Completed During the Simulation:

1. **Actual Patient Problem:** Decreased Cardiac output

   Clinical Reasoning: past medical history of CHF, SOB, shallow breath sounds, pitting edema

   Goal: J.J will have a BP of 120/80, -130/80 HR 60-100 during my time of care Met: ☒ Unmet: ☐

   Goal: J.J Met: ☐ Unmet: ☐

2. **Actual Patient Problem:** Impaired Urinary Elimination (due to UTI)

   Clinical Reasoning: frequent urination, urgency, hesitancy, dysuria

   Goal: J.J will have a normal urinary elimination pattern evidenced by absence of dysuria, urgency and dysuria during my care. Met: ☐ Unmet: ☒

   Goal: patient will have clear no odor urine with an output of 30ml/hr during my time of care. Met: ☐ Unmet: ☒

Additional Patient Problems:

3. Impaired skin
4. Risk for shock (distributive shock)
5. risk for falls

Below will be your notes, add more lines as needed. **Relevant Assessments:** Indicate pertinent assessment findings. **Multidisciplinary Team Intervention:** What interventions were done in response to your abnormal assessments? **Reassessment/Evaluation:** What was your patient's response to the intervention?

Patient Problem	Time	Relevant Assessments	Time	Multidisciplinary Team Intervention	Time	Reassessment/ Evaluation
D.C.O	0930	SOB, head of bed <30°, supine, RR 28, pulse ox 88	0935	Administered 2L/min oxygen NC	0940	Pulse ox rechecked 90
D.C.O	1000	CNA asked nurse to check on J.J SOB, heavy breathing	1005	increased oxygen to 4L/min NC	1008	RR 26, pulse ox rechecked 90 cough sputum - ordered chest x-ray
D.C.O/I.U.E	1010	RR 30, Home meds dropped off, some meds different doses, CHF meds.	1010	contacted pharm for recon.	1010	MD ordered 0.25mg digoxin 20mg furosemide IV push CBC + metabolic panel albuterol 0.5 neb 6th
———	—	———	—	———	—	
R.F.F	1040	yelling, pt on floor laying on side	1040	assisted patient, call provider, hip x-ray (broken)	1050	not stable for surgery (CHF) provider suggest buckstraction
I.S	1100	stage 2 pressure injury found on sacrum during bed bath	1110	barrier cream placed, accosole contacted wound care	1230	barrier cream still present, wound clean, dry.
D.C.O/I.U.E (contagion due to UTI)	1115	confused, asking "where am I, SOB, pulse ox 85 shallow respirations	1115	increased oxygen to 6L/min NC	1115	rechecked ox 89, encouraged breathing through nose out mouth.
I.U.E/R.F.S	1120	urine - cloudy minimal output	1120	MD orders STAT ABG, blood cultures CBC w/ diff C-reactive Protein, urinalysis 0.9NS 150ml/hr	1130	ABG PH 7.28, $PaCO_2$ 35, HCO_3 20 > metabolic acidosis