Student Name: Toni Gutierrez

Medical Diagnosis/Disease: Urinary Tract Infection

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

NCLEX IV *(7)*: Reduction of Risk

Anatomy and Physiology

Normal Structures

Kidneys: bean shaped organs located retroperitoneally on either side of the vertebral column. Surrounded by fat and connective tissue that cushions and supports the kidney position. It is covered by a smooth fibrous membrane (capsule). It acts as a shock absorber. The hilus on medial side of kidneys serve as entry site for the renal artery and nerves also as an exit for the renal vein and ureter. Nephrons is the functional unit of the kidney, and each kidney has 1 million nephrons that cleanse blood plasma. Glomerulus has filtered the blood and the tubules select the unwanted from the wanted in the tubular fluid.

Pathophysiology of Disease

UTI's are infections that affect the urinary tract. They are the second most common bacterial disease esp. in women. Escherichia coli and Candida albicans are the most common pathogens. UTI's are also associated with indwelling catheter use in hospitals. Fungal and parasitic infections may also cause UTI's but this is uncommon and are sometimes seen in immunosuppressed, DM, or kidney problem patients. The urinary tract above the urethra is sterile and there are mechanical and physiologic defense mechanisms that maintain in sterility to prevent UTIs. Completely emptying the bladder helps in the defense. The bacteria invade via the urethra.

Anticipated Diagnostics

Labs

Dipstick urinalysis (identify presence of nitrites)

Urine Culture (clean catch)

Additional Diagnostics

Ultrasound

CT scan

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

NCLEX IV *(7)*: Reduction of Risk

Contributing Risk Factors

Obesity
Shorter female urethra
DM
HIV Infection
Aging
Catheters
Urinary tract instrumentation
Urinary tract stone
Voiding dysfunction w/detrusor sphincter muscle incoordination
Pregnancy
Menopause
Multiple sex partners
Poor personal hygiene

Signs and Symptoms

Painful/difficult urination
Difficulty starting urine stream
Delay between initiation of urination
Diminished urine stream
Can be acute or chronic
Involuntary/accidental urine loss or leakage
Awakened by urge to void 2 or more times
Sudden, strong, intense desire to void immediately
Mental confusion(elderly)

Possible Therapeutic Procedures

Non-surgical

Adequate fluid intake
Apply local heat
Warm shower/tub
Void regularly

Surgical

Prevention of Complications

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

Repeated UTI's
Permanent kidney damage from a kidney infection

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

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

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

Anticipated Medication Management

Antibiotics:
Fluconazole- (fungal UTI)
Fosfomycin (Monurol)
Nitrofurantoin (Macrodantin)
TMP/SMX (Bactrim, Bactrim DS)
Trimethoprim alone (pts w/ sulfa allergy)
Phenazopyridine (Pyridium)
Acetaminophen (pain)

Non-Pharmacologic Care Measures

Adequate fluid intake (6-8oz glasses/day)
Void regularly (every 3 to 4 hours)
Void before and after intercourse
Temporarily stop the use of a diaphragm

What stressors might a patient with this diagnosis be experiencing?

Discomfort
Anxiety
Stress

Client/Family Education

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

List 3 potential teaching topics/areas

Adequate fluid intake (6 8oz glasses/day)

- Practice appropriate hygiene
- Wipe from front to back after urinating
- Avoid vaginal douches and harsh soaps, powders and sprays

Multidisciplinary Team Involvement

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

Nurse
PCP