

Nursing care of Patients with Urinary & Renal Disorders

:by

Assistant lecturers

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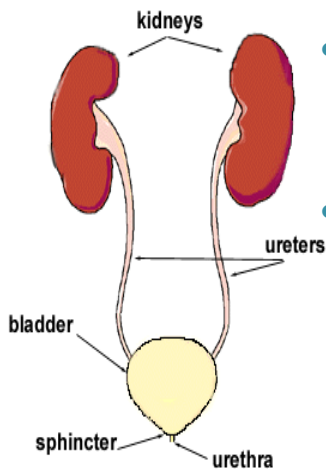
Department of Nursing

2nd Class

Adult Nursing

Pathophysiology

Front View of Urinary Tract



- The urinary system consists of the kidneys, ureters, bladder, and urethra.
- The kidneys remove liquid waste from the blood in the form of urine
- Keep a stable balance of salts & substances in the blood (**Renin Hormones**) and produce a hormone that aids the formation of RBCs(**Erythropoietin Hormones**).

Urological Terms

- 1-**Polyuria:** Increase urine output.
- 2-**Oliguria:** Decrease urine output.
- 3-**Anuria:** Absent of urination .
- 4-**Hematuria:** Blood present in urine.
- 5-**Dysuria:****Painful** or difficult voiding.
- 6- **Pyuria:** WBCs present in urine.
- 7-**bacteriuria:** bacteria present in urine.
- 8-**nocturia:** Excessive urination at night.
- 9-**micturition:** urination or voiding.
- 10-**Incontinence:**Involuntary loss of urine.
- 11- **Enuresis:** Involuntary voiding during sleep. r

Urinary Tract Infection (UTI)

- **Classifications:**
 1. Upper UTIs are known as Pylonephritis.
 2. lower UTIs:
 - a. Ureteritis.
 - b. Cystitis.
 - c. Urethritis.
- Women develop UTI more than men because their shorter urethras.

- **UTIs** are named according the place of infection
 - In the kidneys = **Nephritis**
 - In the ureter = **Ureteritis**
 - In the bladder = **Cystitis**
 - In the urethra = **Urethritis**
 - In the prostate (men) = **prostatitis**

Urinary Tract Infection (cont'd)

- **Predisposing Factors:**
 1. Sexual intercourse.
 2. Indwelling catheter.
 3. Urine stasis.
 4. Urinary tract instrumentation.
 5. Metabolic disorders.**(D.M)**

Urinary Tract Infection (cont'd)

- **Clinical Manifestations:**

- 1. Upper UTIs:**

- a. Chills, fever.
- b. Malaise.
- c. Pain below the ribs.
- d. Nausea, Vomiting.

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Urinary Tract Infection (cont'd)

- 2. Lower UTIs:**

- a. Back pain (flank pain **or** loin pain).
- b. Blood in the urine (hematuria).
- c. Cloudy urine.
- d. Inability to urinate despite the urge.
- e. Fever.
- f. Frequent need to urinate.
- g. General discomfort (malaise).
- h. Painful urination (dysuria).

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Diagnostic studies:

- Urinalysis "clean catch" (midstream)
- Urine Culture & Sensitivity
- WBCs. Pyuria , R.B.C hematuria
- Computed Tomography (CT)
- Ultrasound
- Intravenous Pyelogram (IVP)
- Cystoscope

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Urinary Tract Infection (cont'd)

- **Prevention:**
 1. Avoid products that may irritate the urethra (e.g., bubble bath, scented feminine products).
 2. Cleanse the genital area before and after sexual intercourse.
 3. Change soiled diapers in infants and toddlers promptly.
 4. Drink plenty of water to remove bacteria from the urinary tract.
 5. Do not routinely resist the urge to urinate

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Urinary Tract Infection (cont'd)

6. Take showers instead of baths.
7. Urinate after sexual intercourse.
8. Women and girls should wipe from front to back after voiding to prevent contaminating the urethra with bacteria from the anal area.

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Uropathogenic Bacteria

- Bacteriuria - $>10^5$ colonies of bacteria per millimeter of urine
- Midstream urine sampled
- For men $>10^4$
- Common E.coli from lower GIT
- In males and catheterized patients gradually pseudomonas and enterococcus are coming up

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Routes of infection

- Urethra (commonest route)
- Blood stream
- Fistula from the intestine

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Medical Management

- The nurse has to teach about medical treatment and about methods of prevention
- Short course 3-5 days
- Long course 7-10 days
- Complication in women – yeast vaginitis
- Complicated UTI e.g., pyelonephritis – a cephalosporin or an ampicillin/aminoglycoside combination
- Other common antibiotics for uti : - bactrim, nitrofurantoin, ciprofloxacin, levofloxacin,
- Long term therapy - 6-7 months

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Nursing process : lower urinary tract infection

Assessment

History : symptoms and signs

H/O pain, frequency, urgency and changes in urine

Patient's usual pattern of voiding : infrequent emptying of the bladder association of symptoms of uti with sexual intercourse contraceptive practices and personal hygiene

Patient's knowledge regarding drugs, preventive health measures assessed

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Nursing diagnosis

- Acute pain related to inflammation and infection
- Decide about the level of knowledge

Collaborative problems/potential complications

- Renal failure due to extensive damage
- Sepsis

Planning and goals

- Relief of pain and discomfort
- Knowledge of prevention
- Absence of complications

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Nursing Interventions

Relieving pain

- Antibiotic
- Antispasmodics – for bladder also
- Applying heat to perineum
- Increase water intake
- Urinary tract irritants like coffee, tea, citrus, spices, colas, alcohol avoided
- Frequent voiding (every 2 to 3 hours) encouraged
- Complete emptying of bladder preferable

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Careful assessment of vital signs and level of consciousness may warn of impending sepsis.

Blood cultures that are positive for infection and elevated WBC counts are reported to the physician.

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Evaluation

- Expected patient outcomes
- Relief of pain
- Follows treatment regimen
- No complications

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Urolithiasis

- **Urolithiasis** : The process of forming stones in the kidney, bladder, and/or urethra (urinary tract).
- **Etiology:**
 1. Immobility.
 2. Hypercalcemia.
 3. UTIs.
 4. Urine stasis.
 5. Fractures.

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Urolithiasis (cont'd)

- **Clinical Manifestations:**

1. Renal colic.
2. Nausea and vomiting accompanying severe pain.
3. Fever and chills.
4. Hematuria.
5. Rarely, oliguria or anuria.
6. Bladder distension (urine retention)

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Urolithiasis (cont'd)

- **Diagnostic tests:**

1. KUB radiograph reveals visible calculi.
2. IVP (Intravenous Pyelogram) determines size and location of calculi.
3. Renal Ultrasonography reveals obstructive changes.

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Urolithiasis (cont'd)

- **Nursing Management:**

1. Monitor intake of fluid amount and urinary output.
2. Medicate for pain as prescribed.
3. Continue antibiotic therapy as prescribed.
4. Correct diet to include reduced protein and calcium content.
5. Encourage plenty clear fluid intake.