URINARY TRACT INFECTION

BY
DR SHAZIA KHATTAK
ASSISTANT PROFESSOR
GCW HMC/MTI PESHAWAR

CASE SCENARIO

- A 28 years old non pregnant women presents with history of lower abdominal pain, dysuria and increased urinary frequency for the last 3 days. Urine R/E shows 8-10 puss cells/HPF.

- What is your most probable diagnosis?

OBJECTIVES

- By the end of this lecture the students will be able to :
  - Define urinary tract infection
  - List the most common risk factors for urinary tract infection
  - Diagnose urinary tract infection
  - Treat urinary tract infection

- **INTRODUCTION**
  - → A urinary tract infection (UTI) is an infection in any part of the urinary system → kidneys, ureters, bladder and urethra.
- **TYPES:**
  - → Urinary tract infection can be divided into two types depending upon the part of the urinary system involved.
    - Upper urinary tract infection [kidneys, ureters]
    - Lower urinary tract infection[bladder , urethra]

NOTE: Most infections involve the lower urinary tract i-e bladder(cystitis) and the urthra(urethritis)

- **MALE TO FEMALE RATIO:**
  - Women are at greater risk of developing UTI than men.
  - Among adults aged 20-50 years , UTI are about 50 fold more common in women than men.
- **RASIONAL:**
  - Short female urethra 4cm compared to long male urethra 25cm.

RISK FACTORS FOR UTI

- **IATROGENIC CAUSES**
  - Indwelling catheter
  - Antibiotic use
- **BEHAVIOURAL**
  - Frequent sexual intercourse
- **PHYSIOLOGICAL CAUSES**
  - Pregnancy
- **GENETIC CAUSES**
  - Familial tendency

CAUSATIVE PATHOGENS

- **Enteric, usually gram-negative bacteria (most often)**
  - Escherichia coli →75-95% of cases
  - Klebsiella
  - Proteus mirabilis
  - Psudomonas aeruginosa
- **Gram –positive bacteria (less often)**
  - Staphylococcus saprophyticus
  - Enterococcius faecalis(Group D Streptococci)
  - Streptococcus agalactiae (GroupB Streptococci)

COMPLICATIONS OF UNTREATED UTI

- Pyelonephritis leading to permenant kidney damage
- Recurrent infections:
  - ≥ 2 episodes/6months
  - ≥4 episodes/1 year

DIAGNOSIS

- History:
  - Increased urinary frequency[>7times/day]
  - Dysuria
  - Lower adominal pain
  - History of Hematuria

INVESTIGATIONS

- FBC[↑TLC/DLC] point towards current infection
- Urine R/E [microscopy + biochemistry]
  - ✓ Nitrate positive is highly specific for bacterial UTI but is not very specific
  - ✓ The leukocyte i-e puss cells >4-6 are suggestive of UTI
- Urine C/S [clean –catch MSU sample]

  [Method: Collect MSU sample i-e wash vulva first with tap water then with the fingers of left hand apart labia minora to expose the urethra then discard the first portion of urine to avoid contamination and once stream is well establidhed collect it in the given culture bottle]
- U/S KUB if upper UTI is suspected

TREATMENT

- **UNCOMPLICATED LUTI:**
  - Manage on out patient basis
  - Give antibiotics x 3 days
  - Nitrofurantoin 100mg BD x 3 days
- **COMPLICATED LUTI:**
  - Admit and manage as an in patient
  - Give iv antibiotics x 7-10 days

REFERENCES

- https://www.nice.org.uk/guidance/cg54/evidence
- http://www.sign.ac.uk/sign-88-management-of-suspected-bacterial-urinary-tract-infection-in-adults.html

THANKS