

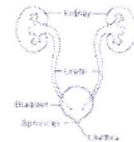
## Goal

To eradicate the offending organisms from the urinary bladder and tissues.

Main treatment of UTI is by antibiotics.

## Treatment of urinary tract infections

(UTI)



## Uncomplicated UTI

Low-risk patient (*woman*) for recurrent infection.

3-days antibiotic without urine test.

Cure rate 94%.

Choice of antibiotic depend on susceptibility pattern ,include:

Amoxicillin ( with or without clavulanate)

Cephlosporins ( *first or second generation*)

## Choice of antibiotic depends on:

Whether infection is complicated or uncomplicated.

Whether infection is primary or recurrent.

Type of patient ( *pregnant ,child , hospitalized or not, diabetic patient,.....etc*)

Bacterial count.

Presence of symptoms.

Fluoroquinolone ( ciprofloxacin or norfloxacin)

(not for pregnant women or children) ,first choice if other antibiotics are resistant.

TMP-SMX ( Bactrim, Septra ,Cotrim)

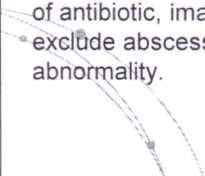
Nitrofurantoin ( long term use)



Cystitis

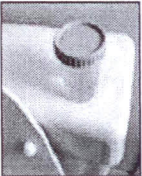

Moderate to sever pyelonephritis

Patients need hospitalization  
Antibiotic given by IV route for 3-5 days until symptoms relieved for 24-48 hrs.  
If fever and back pain continue after 72 hrs of antibiotic, imaging tests indicated to exclude abscesses, obstruction or other abnormality.



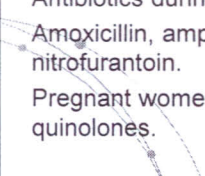
Continue-

A urine culture may be obtained within one week of completion of therapy and again after 4 weeks.





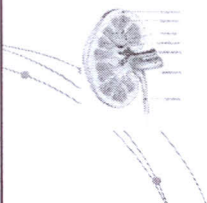
Treatment of specific populations

Pregnant women  
High risk for UTI and complications  
Should be screened for UTI  
Antibiotics during pregnancy include:  
Amoxicillin, ampicillin, cephalosporins, and nitrofurantoin.  
Pregnant women should NOT take quinolones.



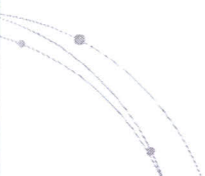
Chronic pyelonephritis

Those patients need long-term antibiotic treatment even during periods when they have no symptoms.



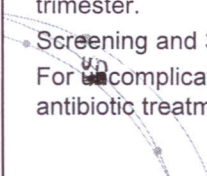
Diabetic patients

Have more frequent and more sever UTIs.  
Treated for 7-14 days antibiotics even patients with uncomplicated infections.



Pregnant women with asymptomatic bacteriuria (evidence of infection but no symptoms) have 30% risk for acute pyelonephritis in the second or third trimester.

Screening and 3-5 days antibiotic needed.  
For uncomplicated UTI, need 7-10 days antibiotic treatment.



### Recurrent infections

Patients with two or more symptomatic UTIs within 6 months or 3 or more over a year.  
Need preventive therapy  
Antibiotic taken as soon as symptoms develop.  
If infection occurs less than twice a year, a clean catch urine test should be taken for culture and treated as initial attack for 3 days.

### Relapsing infection

Caused by treatment failure or structural abnormalities or abscesses.  
  
Antibiotics used as initial infection  
Treatment for 7-14 days.



### Postcoital antibiotics

If recurrent UTI related to sexual activity, and episodes recur more than 2 times within 6 months  
A single preventive dose taken immediately after intercourse  
Antibiotics include: TMP-SMX, Cephalexin or ciprofloxacin



### When to consult the doctor ?

If symptoms persist  
A change in symptoms  
Pregnant women  
More than 4 infections per year  
Impaired immune system  
Previous kidney infections  
Structural abnormalities of urinary tract  
H/O infection with resistant bacteria

### Uncomplicated pyelonephritis

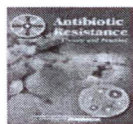
Patients with fever, chills and flank pain ,but they are healthy non-pregnant not nauseous or vomiting with no signs of kidney involvement.  
Can be treated at home with oral antibiotics for 14 days with one of the followings:  
Cephalosporins, Amoxicillin-Clavulanate, Ciprofloxacin or SMX-SMX.  
First dose may be given by injection

### Prophylactic antibiotics

Optional for patients who do not respond to other measures.  
Reduces recurrence by up to 95%  
Low dose antibiotic taken continuously for 6 months or longer, it includes :  
TMP-SMX, Nitrofurantoin, or Cephalexin  
Antibiotic taken at bed time more effective.

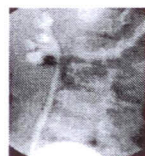
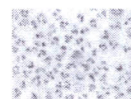
## Children with UTI

Usually treated with TMP-SMX or Cephalexin.  
Sometimes given as IV.  
Gentamicin may be recommended as resistance to cephalexin is increasing.



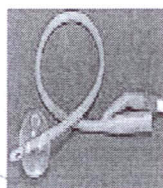
## Urethritis in men

Require 7days regimen of Doxycycline.  
A single dose Azithromycin may be effective but *not recommended* to avoid spread to the prostate gland.  
Patients should also be tested for accompanying STD.



## Vesicoureteric reflux ( VUR)

Common in children with UTI  
Can lead to pyelonephritis and kidney damage.  
Long-term antibiotic + surgery used to correct VUR and prevent infections.  
Acute kidney infection : use Cefixime (Suprax) or 2-4 days Gentamicin in a one daily dose. Oral antibiotic then follows IV.



## Management of catheter-induced UTI

Very common  
Preventive measures important  
Catheter should not be used unless absolutely necessary and they should be removed as soon as possible.





### Catheter induced infections

Catheterized patients who develop UTI with symptoms or at risk for sepsis should be treated for each episode with antibiotics and catheter should be removed, if possible.

- Associated organisms are constantly changing.
- May be multiple species of bacteria.

### Intermittent use of catheters

If catheter required for long-periods ,it is best to be used intermittently.

May be replaced every 2 weeks to reduce risk of infection and irrigating bladder with antibiotics between replacements

- Daily hygiene and use of closed system to prevent infection.

### continue-

Antibiotic use for prophylaxis is rarely recommended since high bacterial counts present and patients do not develop symptomatic UTI.

- ANTIBIOTIC THERAPY HAS LITTLE BENEFIT IF THE CATHETER IS TO REMAIN IN PLACE FOR LONG PERIOD.