

دعاء قبل المذاكرة: اللهم اني اسألك فهم النبيين
وحفظ المرسلين والملائكة المقربين.

Treatment of UTIs

Red: Important

Grey: Additional information





Choice of Antibiotic

It depends on:

- Whether the infection is complicated or uncomplicated.
- Whether infection is primary or recurrent.
- Type of patient : *pregnant women, children, hospitalized patients, diabetic patients*
- Bacterial count.
- Symptomatic/Asymptomatic .

Uncomplicated vs. Complicated UTI

Uncomplicated UTI:

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

3-days antibiotic without urine test.

Cure rate 94%.

Complicated UTI:

10 to 14 days antibiotics.



Antibiotics

Choice of antibiotic depend on susceptibility pattern:

- Amoxicillin (with or without clavulanate)
- Cephalosporin (first or second generation):
- TMP-SMX
- Nitrofurantoin (Long term use): Used **only** in lower UTI.
- Fluoroquinolone (Ciprofloxacin or Norfloxacin): Contraindicated in pregnant women and children due to cartilage deformity. First choice if other antibiotics are resistant.

Recurrent infections

- Patients with two or more symptomatic UTIs within 6 months or 3 or more over year
- Need prophylactic (preventative) antibiotics.
- Most commonly used drugs are Nitrofurantoin and TMP.
- 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.

Complicated conditions:

- Pregnant women
- Immunodeficiency
- Structural abnormality
- Three or more infection per a year
- Resistant infection

Postcoital antibiotics:

If the recurrent infection is due to sexual activity and episodes reoccur 2 times within 6 months.

A single preventive dose should be taken immediately after intercourse.

Antibiotics include : TMP-SMX, Ciprofloxacin and cephalixin.

Prophylactic antibiotics:

- reduces recurrent by up to 95%.
- low doses antibiotics taken continuously for 6 months or longer, it includes:

TMP-SMX, nitrofurantoin, cephalixin.

Note: The antibiotics are more effective at bed-time.

Uncomplicated pyelonephritis:

- Patients with fever, flank pain and healthy, non pregnant women with no nauseous and vomiting.
- Can be treated at home with oral antibiotics for 14 days with one of the following: Amoxicillin with clavulanate, cephalosporin, TMP-SMX or ciprofloxacin.

Moderate to sever pyelonephritis:

- The patient need to be hospitalized
 - 1- Antibiotic given by I.V route for 3-5 days until symptoms relieved for 24-48 hours
 - 2- if fever and back pain continue after 72 hours of antibiotic, imaging test indicated to exclude abscess , obstruction and other abnormalities.

Chronic pyelonephritis:

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



Pregnant women

- There is a high risk for UTI and complications such as abortions .They should be screened.

- Pregnant women with asymptomatic bacteruria (**evidence of infection but no symptoms**):
 - 1)Have high risk of acute pyelonephritis in 2nd or 3rd trimester
 - 2)screened and treated with antibiotic for 3-5 days

- If the UTI is uncomplicated,7-10 days antibiotic treatment.

- Antibiotics during pregnancy include: 1- amoxicillin 2-ampicillin 3- cephalosporins(**dont use quinolones**)

Diabetic patients

- Have more frequent and more severe UTIs.

- Treated for 7-14 days antibiotics even patients with uncomplicated infections.

Urethritis in men

- Require Doxycycline for 7 days

- Patients should also be tested for accompanying STD (**sexually transmitted disease**).

Children with UTI

- Usually treated with TMP-SMX ,Cephalexin (may be resistant), or Gentamicin

- Sometimes given as IV



Vesicoureteric reflux (VUR)

- Common in children (congenital anomaly)
- Causes ureter dilation → hydronephrosis → infections (pyelonephritis mainly) → fibrosis of the kidney (scarring) → renal failure
- Medication : surgery (to treat the anomaly) + antibiotics until the predisposing factor for infections is treated .

*as for the antibiotics the doctor mentioned the use of **nitrofurantoin** for **prevention** . As for those in the slides

Cefixime & Gentamicin for **acute** infection.

Management of catheter-induced UTI

- The most popular hospital acquired infection is catheter induced UTI.
 - * bacteria enter by the insertion of the catheter , transporting from the tube or from the bag especially when it touches the floor
- Catheters should not be used unless absolutely necessary and they should be removed as soon as possible.
- **Intermittent use of catheters*** : (rather than using one catheter for a long time, the catheter is changed each time the patient passes urine).
- Used if catheter usage is needed for a long period e.g. patients in home or with paralysis.
- Daily hygiene should be maintained and use of closed system to prevent infection.

*click for instructional youtube video

MCQs

1-Which of the following antibiotic that pregnant women should not take it:
A- Amoxicillin. B- Ampicillin.
C- Fluoroquinolone. D- Cephalosporins.

2- A patient who has moderate to sever Pyelonephritis take the antibiotic by:
A- Oral route for 3-5 days. B- IV route for 3-5 days.

C- IV route for 3-7 days. D- Oral route for 3-10 days.

3- What is the symptoms of uncomplicated pyelonephritis:

A- Fever. B- Chills. C- Flank pain D- All of the above.

4- Which of the following patient need a long term antibiotic treatment even when they have no symptoms:

A- Patient with moderate to sever pyelonephritis.

B- Patient with chronic pyelonephritis.

C- Patient with uncomplicated pyelonephritis.

D- None of the above.

5- What is the best sample to diagnose the UTI:

A- Blood culture. B- Urine sample 48 hours after starting the symptoms.

C- Early morning urine sample. D- all of the above.

6- A pregnant women with asymptomatic bacteriuria What is the management?

Ans:Screening 3-5 days of antibiotic like Ampicillin.

7- Which of the following cases are really needed for consulting a Doctor:

A- If the patient is diabetic. B- If the patient is pregnant. C- If the patient is young adult.

D- Both A and B.

8- Patient has recurrent UTI. What is the most appropriate antibiotic for both postcoital and prophylaxis?

A- Nitrofurantoin. B- Ciprofloxacin. C- Cephalexin. D- None of the above.

9- What is the duration of treatment for complicated UTI:

A- 3-5 days. B- 10-14 days. C- 3-7 days. D- 5-10 days.

10- Which of the following is common in children with UTI also can lead to pyelonephritis and kidney damage:

A- Vesicoureteric reflux (VUR). B- Intrarenal reflux.

C- Chronic pyelonephritis. D- None of the above.

11- Which of the following is considered as a dangerous side effect for sulfamide:

A- Cartilage damage. B- Steven Johnson syndrome C- Bone deformity. D- All of the above.

12- A 3 year old male develop UTI. What do you think the most predisposing factor in his case?

A- Catheter. B- Short urethra. C- Urinary tract abnormalities. D- Diaper.

13- A 18 year old female came to ER and the physician described to her Amoxicillin. Which of the following is true:

A- Amoxicillin for 3 days without urine test. B- Amoxicillin for 5 days without urine test.

C- Amoxicillin for 3 days with urine test. D- Amoxicillin for 10 days with urine test



Thank You and Good Luck

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دعاء بعد المذاكرة: اللهم اني استودعك ما قرأت
وما حفظت وما تعلمت، فرده لي عند حاجتي إليه
انك على كل شيء قدير، وحسبنا الله ونعم الوكيل.

MCQ'S:

1-C

2-B

3-D

4-B

5-C

7-D

8-C

9-B

10-A

11-B

12-C

13-A