Assessment & Prescribing Algorithm for

UNCOMPLICATED URINARY TRACT INFECTION (CYSTITIS)



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ASSESSING THE PATIENT¹

Is the patient presenting with symptoms of acute uncomplicated UTI (cystitis)?

- 1. Acute dysuria **OR**
- 2. 2 or more of the following:
 - a) New urinary urgency or frequency
 - b) Suprapubic pain/discomfort
 - c) Hematuria



Do not prescribe antibiotics if these criteria are not met or if the patient has asymptomatic bacteriuria.² Patients with nonspecific symptoms such as gross hematuria, confusion or delirium should be referred to a physician or nurse practitioner for further investigation.

DOES THE PATIENT HAVE ANY COMPLICATING FACTORS?

- Upper urinary tract or systemic Male sex disease (red flag symptoms: fever, rigors, flank or back pain, nausea and vomiting)

 - Pregnancy
 - <12 years of age
 - Immunocompromised (refer to references for examples^{2,3})
- Abnormal urinary tract function or structure (e.g. indwelling catheter, neurogenic bladder, renal stones, renal dysfunction etc)



Patients presenting with any complicating factors should be referred to a physician or nurse practitioner.





IS THE PATIENT EXPERIENCING A RELAPSE OR **RECURRENT INFECTION?**

- Relapse: return of symptoms within 4 weeks of completing antibiotic treatment
- Recurrent: 2 or more UTIs in 6 months OR 3 or more UTIs in 12 months



Patients experiencing relapse or recurrent infection should be referred to a physician or nurse practitioner.



PRESCRIBING ANTIBIOTIC TREATMENT

Recommended treatment:

• Nitrofurantoin macrocrystals (e.g. MacroBID®) 100 mg PO BID x 5 days

- Trimethoprim/sulfamethoxazole (TMP/SMX) 160 mg/800 mg (e.g. Septra® DS) PO BID x 3 days
- Trimethoprim 200 mg PO once daily x 3 days OR 100 mg PO BID x 3 days
- Fosfomycin tromethamine (e.g. Monurol®) 3 q PO x 1 dose

FOLLOW-UP:

- Complete documentation & notify a physician or nurse practitioner.
- Assess for improvement & side effects in 72 hours.
- If there is a lack of improvement or development of upper urinary tract or systemic disease, the patient should be referred to a physician or nurse practitioner.

PRESCRIBING CONSIDERATIONS:

- Urine cultures are not recommended for acute uncomplicated cystitis. E. coli is the most common infecting organism (80-90%). In Ontario, the rates of E. coli resistance are ~3% for nitrofurantoin and ~20% for TMP-SMX. Refer to the Ontario Urinary Antibiogram for regional susceptibility rates.
- While the rates of *E. coli* resistance for fosfomycin in Ontario are low, one study comparing fosfomycin to nitrofurantoin found
- Children ≥ 12 years of age may require weightbased dosing; fosfomycin is not indicated for patients < 18 years of age.
- Consider patient's allergies & intolerances, recent antimicrobial use in last 3 months,
- previous culture results if known, renal function and other medications. Elderly patients may be at increased risk of drug-drug interactions (e.g. hyperkalemia due to concomitant use of TMP-SMX and ACE-I/ARBs, etc.).6
- Prolonged durations of therapy are not recommended for uncomplicated cystitis. Shorter courses have similar efficacy with lower risk of side effects, antibiotic resistance, and C. difficile.

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