The Prudent Prescriber

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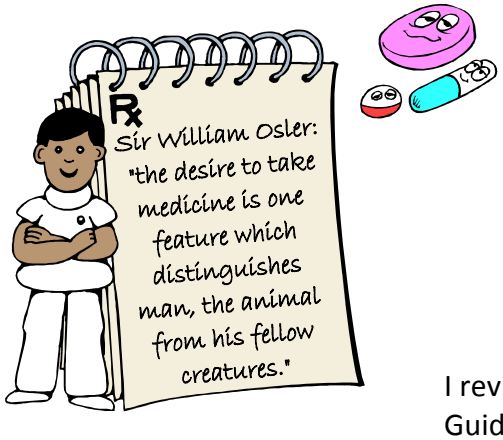

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Pharm Reps ≠ Rational Prescribing
(PR) (RP)

How to treat Uncomplicated UTI: Simply, Safely, Inexpensively & Minimize Collateral Damage

I reviewed the Infectious Disease Society of America 2010 Guidelines and an excellent review article by Dr. Thomas Hooton in the March 15, 2012 NEJM.

Incidence

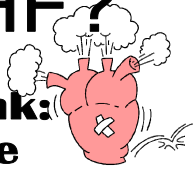
- UTI is the most common bacterial infection encountered in outpatient setting.
- Self-reported annual incidence of UTI in women is 12%.
- By age of 32 years, half of all women have had at least one UTI.
- Among healthy young women with cystitis, 25% will have a recurrence in the next six months.

Definition

- ❖ Uncomplicated UTI: episodes of acute cystitis and pyelonephritis occurring in healthy premenopausal, non-pregnant women with no history of an abnormal urinary tract or significant co-morbidities.
- ❖ Complicated UTI: all others
- ❖ This distinction is useful in choice of and duration of antibiotic treatment, but misclassifies many UTIs that can be treated with short courses of antibiotics; like healthy post-menopausal women and diabetics with good control.

Antibiotics do NOT help acute bronchitis

CHF?
Think:
Ace
Aldactone
B-blocker
Dig
Diuretic



Avoid these expensive "me-too" drugs:

Dexilant
Vimovo
Livalo
Pristiq
Viibyrd
Edarbi
Daliresp

ß-blockers in post-MI save lives

Treat diabetics BP to 130/80

Pill splitters save BIG

now available on the Generic Marquee

Effexor XR→venlafaxine ER
Flomax→tamsulosin
Cozaar→losartan
Levaquin→levofloxacin
Lipitor→atorvastatin
Nasacort AQ→triamcinolone acetonide nasal spray

Risk Factors

- ♉ Sexual intercourse
- ♉ Use of spermicides
- ♉ Previous UTI
- ♉ A new sex partner in the last year
- ♉ History of UTI in first-degree female relatives

Not Risk Factors

Case control studies have shown **no** significant associations between recurrent UTIs and:

- ♉ Precoital or postcoital voiding patterns
- ♉ Daily beverage consumption
- ♉ Type of underwear
- ♉ Frequency of urination
- ♉ Wiping patterns
- ♉ Tampon use
- ♉ Douching
- ♉ Hot tub use

Diagnosis

- ➢ Pyelonephritis: Fever (temp>38° C), chills, flank pain, CVA tenderness, and nausea or vomiting, with or without the symptoms of cystitis.
- ➢ The diagnosis of cystitis is >90% in women who have dysuria and frequency without vaginal discharge or irritation. (JAMA 2002;287:2701-10)
- ➢ When dipstick is positive for leukocyte esterase or nitrite, urinary tract infection is likely with a sensitivity of 75% and a specificity of 82%. (JAMA 2002;287:2701-10)
- ➢ When the history is strongly suggestive of UTI, dipstick adds little to diagnosis, as negative results on both tests do not exclude infection.
- ➢ Urine culture warranted in women with suspected pyelonephritis, but not cystitis, as patient's history is reliable in making diagnosis. (Infect Dis Clinic North Am 2003;17:303-32)
- ➢ Studies comparing bladder aspirate vs. voided samples show that 100,000 colony forming units per ml is insensitive for bladder infection. 30%-50% of women with cystitis have colony counts of 100-10,000. (NEJM 1982;307:463-8)

Management

- Cystitis resolves spontaneously in 25 to 42% of women—in placebo arms of antibiotic studies. (Brit J Genl Pract 2002;52:729-34)
- Untreated cystitis infrequently progresses to pyelonephritis (1 in 38 cases). (Brit J Genl Pract 2002;52:729-34)
- Cystitis: lots of morbidity and ATB prescribed to resolve symptoms.
- 2010 guidelines of Infectious Diseases Society of America (IDSA) suggests thresholds for not using an antibiotic *in cystitis* when the prevalence of resistance in a community exceeds:
  - 20% for TMP/SMX
  - 10% for fluoroquinolones

- IDSA promotes the concept of "collateral damage," the adverse ecological effects of antibiotics: selection of drug-resistant organisms or infection or colonization with multidrug- resistant organisms.

Treatment of Cystitis

Antimicrobial Regimen	Efficacy
First- line Therapy	
Nitrofurantoin monohydrate 100 mg BID x 5 days **$27***	Clinical efficacy of 5 days 93%; 3 days less effective, do not need 7 days. Not many ecological side-effects.
TMP-SM X 160/800 BID x3 days **$1.32***	Clinical efficacy: 93%; Same with trimethoprim 100 mg BID alone. Use often prompts short term resistance.
Fosfomycin (Monurol) 3gm sachet In a single dose **$51***	Clinical efficacy: 91% (single trial); Most labs do not do sensitivities.
Second-line therapy	
Fluoroquinolones: ciprofloxacin 250mg BID x3 days; **$2.10** levofloxacin 250 mg or 500mg once daily x3 days; **$2.01***	Clinical efficacy: 90%; Resistance in USA is rising. Many more ecological side-effects.
Beta-lactams: amoxicillin-clavulanate x 5 days; **$10.29*** cednir, cefaclor, cefpodixime x 5 days; **$63***	Clinical efficacy: 89%; Fewer efficacy data on narrow spectrum cephalosporins.

- MAC pricing(what managed care will pay pharmacies) and add $2-3 for dispensing

Treatment of Pyelonephritis

Antimicrobial Regimen	Efficacy
ciprofloxacin 500 mg BID X 7 days; levofloxacin 750 mg once daily X 5 days	Clinical efficacy: cipro 96%; levo 86%
TMP-SMX160/800 mg BID X 14 days	Clinical efficacy: 83%; 92% if pathogen a susceptible E coli strain vs. 35% if not susceptible.
Oral beta-lactams for 10-14 days	Efficacy is inferior to TMP-SMX and fluoroquinolones and higher relapse rates.

Management Follow-up

- If symptoms of cystitis occur more than a month after successful treatment of a UTI, **use a first line, short course regimen.**
- If the recurrence is within 6 months of the last successful treatment **use a first line antibiotic other than the last one used, particularly if SMX-TMP was used the first time.** (Clin Infect Dis 2002;34:1061-6)
- After treatment for simple cystitis or pyelonephritis, **no need for urine culture in asymptomatic women.**
- In women with recurrent uncomplicated cystitis or pyelonephritis, routine urologic evaluation with ultrasound or CT scanning has a low yield and is NOT recommended.
- Save radiologic workup for patients with persistent hematuria, those with pyelo with persistent fever after 48 hrs of antibiotics, those with symptoms suggestive of stones and women with two or more episodes of pyelonephritis.

Take Home

1) History is quite useful: dysuria + frequency without vaginal discharge or irritation = cystitis

2) With good history, do not need dip, UA or culture

3) If *E.coli* sensitivity >80% to TMP-SMX, it is the drug of choice

4) Culture urine only if no resolution of symptoms or recurrence of symptoms in 2 weeks.

5) If recurrence of symptoms within 6 months, use a different antibiotic, as resistance will be high.

6) No need for urine culture following treatment in asymptomatic patients with either cystitis or pyelonephritis.

7) Our office has utilized a telephone protocol using these criteria with clinical success. If you would like a copy, e-mail me.