

QA
Outpatient Rx of Uncomplicated UTI's
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What's Complicated

Elderly > 65 and Young < 15

- Immunosuppression
- Males
- Sx's >7 days
- Pregnancy
- Recent Abx use within past month
- Hospital Acquired
- Functional or Anatomic Abnormalities
- Indwelling Catheter
- CVA Tenderness
- Recent Urinary Tract Procedure
- Gross Hematuria
- Diabetes Mellitus
- Fever >3 days

Study

- Uncomplicated UTI's by diagnostic codes.
- Look at UA's and symptoms prior to UA
- Sx's:
 - suprapubic tenderness
 - urinary frequency
 - urinary urgency
 - dysuria

What do we look for in a UA?

What we are prescribing?

For how long?

Epidemiology - UTI

- 1997
- estimated 3.6 million visits generating 1.6 billion in direct costs
- 50-60% of adult women report having a UTI in the past
- Sexually active younger women have 0.5 UTI's per person-year
- One study of sexually active college women showed an active female with intercourse 3X/week had a 2.6X greater chance of UTI than a female with no partners
- COSTLY and COMMON

Microbiology

- Escherichia coli ~ 80-85% of isolates
- By far most common
- Staphylococcus saprophyticus 2nd most common cause
- Followed by Proteus mirabilis, Klebsiella, Enterococci, Pseudomonas, Staph, etc.

Altru #'s

- 54% E. coli
- 11% K. pneumo
- 10% E. faecalis
- 5% Coag -ve staph
- Rest <4% (Pseudomonas, sa, enterococci (other species))

Pathogenesis

- Fecal flora contaminates the vaginal flora and enter the urethra and bladder
- This stimulates a host response leading to symptomatology
- Contamination is most commonly aided by intercourse, but also poor hygiene, etc.

Symptoms

- Suprapubic Tenderness
 - ~20% of Uncomplicated UTI patients
- Dysuria
 - LR of 1.3
 - Sens ~ 87% ; Spec ~ 32%
- Urinary urgency
 - LR of 1.5
 - Sens ~ 39%; Spec ~ 74%
- Urinary urgency
 - LR of 1.5
 - Sens ~39%; Spec ~ 74%
- Urinary frequency
 - LR of 1.3
 - Sens ~ 87%; Spec ~32%
- Dysuria and frequency without history of vaginal discharge or irritation have greater 90% likelihood of cystitis (+LR = 24)

UA

- Leukocyte Esterase
 - Sens 75-95%
 - Spec >94%
- Nitrite
 - Sens 35-80%;
 - Spec >95%
 - Limited to nitrite producing bacteria (eliminates Staph sap, enterococci, etc.)
 - Falsely negative often with dilute urine
- Bacteria
 - Sens 40-70%
 - Spec 85-90%
- 1+ or greater pyuria
 - Sens 95%
 - Spec 70%
 - > 6 wbc/hpf

Urine Culture

- Gold Standard >100,000 CFU for diagnosis
- Most likely not indicated for acute uncomplicated UTI
- Indicated if failure of therapy or complicating factors
- May obtain if symptoms not classic for UTI
- May be indicated in future if outpatient treatment failure rates climb
- Not just lab-based resistance
- Cost 30-50\$

Treatment

- 50-60% of Uncomplicated UTI's will resolve spontaneously
- Some may take up to 2 months before resolution

Why Treat?

- Decreased Pyelonephritis (Unproven)
- Decreased loss of work
- Decrease days with symptoms
- No relation to UTI's and renal function ever proven

What to use and how long?

- 3 day therapy as effective as 5 or > for symptomatic control
- 5 or > therapy obtained slightly higher bacteriologic cures vs. 3 day therapy
- All have similar efficacies with no one treatment length clinically proven to be better than another.

Some Rx Regimens

- Cipro 250 mg PO BID X 3 days
 - \$8.10
- TMP/SMX 160/800 PO BID X 3 days
 - \$7.95
- Nitrofurantoin (Macrobid) 100 mg PO BID X 7 days
 - \$30.55
 - Less effective than TMP/SMX in some studies because of poor activity against proteus, klebsiella, and some enterococcus
- Trimethoprin 100 mg PO BID X 3 days
 - \$8.70

Study Statistics (Initial 10-06)

- Population
- Females
- Age 18-61
- Mean: 32.6
- Faculty- 9 ; Residents- 42
- Symptoms
 - Frequency 46/51
 - Urgency 35/51
 - Dysuria 43/51
 - Suprapubic Tenderness 25/51
 - 2 or more Symptoms 48/51
 - 3 or more Symptoms 34/51

Urinalysis

UA Stats

- Nitrite- 7/50
- Leukocyte Esterase- 45/50
- Pyuria- 43/50
- Bacteria- 46/50
- Culture- 11/50
 - 6 E.coli
 - 1 resistant to TMP/SMX
 - Enterobacter cloacae; 1 Gardnerella; 1 Staph sapro; 2 negative
- Faculty 1/7; Residents 10/44

Rx Breakdown

- TMP/SMX - 31/51
 - DS BID X 3 = 26
 - DS BID X 10 = 1
 - DS BID X 5 = 1
 - DS BID X 6 = 1
 - DS BID X 7 = 2
 - Failures = 4 , 13%
- Nitrofurantoin - 5
 - 100mg BID
 - x 2 days, 5
 - x 5 days; 2
 - x 7 days; 2
 - Failures = 1, 20%

Studies of note

Barry, et al. Evaluation of suspected UTI in ambulatory women: A cost-utility analysis of office-based strategies
Journal of Fam Prac 1997: 44: 49-60

- LOE - 1B (individual RCT)
 - in favor of empiric treatment (1/2 cost adjusted vs dipstick and Rx) for symptomatic uncomplicated UTI
 - Design cost-effective analysis

Saint, et al. • The effectiveness of a clinical practice guideline for the management of presumed uncomplicated UTI in women. American Journal of Medicine. 1999: 106: 636-41

- Implemented a "Protocol" for phone treatment of UTI's vs. teaching of MD, PA's, NP's about UTI management
- Nurses phone system had better compliance and cost was less
- Disadvantage was STD's were missed
- LOE • 4 (Case Series)
- Satisfaction
 - 95% for phone and 85% would rather be treated by phone triage than a office visit

Rx

- Start with TMP/SMX DS BID X 3 days or Cipro 250 mg BID X 3 Days
- Don't obtain cultures if not indicated (which would make the UTI complicated anyway)
- Treatment Failures
 - UA with culture and change abx

Study Review (Data: 10-06 to now)

- Population
- Females
- Age 16-65
- Mean: 34
- Total Chart Reviewed = 40
- Symptoms
 - Frequency 34/40
 - Urgency 26/40
 - Dysuria 30/40
 - Suprapubic Tenderness- 22/40
 - Like Prior UTI • 13/40
 - 2 or more Symptoms- 40/40
 - 3 or more Symptoms- 23/40

Abx Use

- Bactrim 17/40
- Cipro 22/40
- Amox 1/40 (Breast Feeding was reason)
- UA's stil Done
 - 9/40
 - All positive
 - No cultures performed

Outcomes

- 2 repeat visits
 - Both for continued dysuria
 - Both had negative UA's on revisit

Summary/ Conclusion

- Sensitivity and Specificity of 2 or more symptoms is as predictive for UTI as a UA
- UA's should be held for a clinical suspicion of UTI, but not a clear picture
- Empiric Treatment without UA is Cost Effective
- Visit with a health professional is still indicated for most so that STD's, etc aren't missed
- Quality of Care will be unchanged

References

Mehnert, et al. Diagnosis and management of uncomplicated urinary tract infections. *American Family Physician*. 2005; 72: 451-6

Uncomplicated urinary tract infection in women. - www.guideline.gov

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Barry, et al. Evaluation of suspected UTI in ambulatory women: A cost-utility analysis of office-based strategies *Journal of Fam Prac* 1997; 44: 49-60

Bent S, et al. Does this woman have an acute uncomplicated urinary tract infection? *JAMA* 2002;287:2701-10.

INFO POEMS - website