

Urology QI Project 2016-2017

*Antimicrobial prophylaxis before simple
cystourethroscopy for patients with risk factors*

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AIM Statement

To improve antimicrobial prophylaxis by 20% before simple cystourethroscopy for patients with risk factors by May 2017.



Background

- Surgical site infections (SSIs) and urinary tract infections (UTIs) are a common cause of post-op patient morbidity
- UTIs are most common nosocomial infection and are frequently found in the post-operative period
- What is the evidence for peri-procedural antimicrobial prophylaxis (specifically in flexible cystoscopy)
- *FACTORS TO CONSIDER*
 - Ability of host to respond to infection
 - Amount of bacteria at surgical procedure site
 - All procedures entering urinary tract are considered “clean-contaminated”
 - Benefit of prophylaxis for potential morbidity of infection

Antimicrobial Prophylaxis

- AUA convened a Best Practice Policy to formulate recommendations on uses of antimicrobial prophylaxis during urologic surgery

Studies have shown rate of UTI after urodynamic studies and flexible cystoscopies to range up to 28.3% without antibiotic prophylaxis

Evidence in Literature

- ***Johnson et al., (2007)***
 - RCT of 2083 patients; randomly assigned to three arms: placebo, trimethoprim or cipro before flex. cystoscopy (FC)
 - Results:
 - Rate of bacteriuria reduced from 9% placebo to 5% (trimethoprim group) to 3% (cipro)
 - Odds of developing bacteriuria after FC are 5, 2, and 0.5 for placebo, trimethoprim, and ciprofloxacin groups respectively
 - **CONCLUSION: One dose of oral ciprofloxacin significantly reduces bacteriuria after FC**

Change Concept

- Guidelines (AUA) for RNs, MDs and patients to follow for antimicrobial prophylaxis before cystourethroscopy
- Our aim is to standardize the process of antimicrobial prophylaxis before simple cystourethroscopy for all patients identified with risk factors



AUA Recommendations

Procedure	Organisms	Prophylaxis Indicated	Antimicrobial(s) of Choice	Alternative Antimicrobial(s)	Duration of Therapy*
Lower Tract Instrumentation					
Removal of external urinary catheter	GU tract†	If risk factors‡,§	- Fluoroquinolone¶ - TMP-SMX¶¶	- Aminoglycoside (Aztreonam¥) ± Ampicillin¶¶ - 1st/2nd gen. Cephalosporin¶¶ - Amoxicillin/Clavulanate¶¶	=24 hours¶¶
Cystography, urodynamic study, or simple cystourethroscopy	GU tract	If risk factors§	- Fluoroquinolone - TMP-SMX	- Aminoglycoside (Aztreonam¥) ± Ampicillin - 1st/2nd gen. Cephalosporin - Amoxicillin/Clavulanate	=24 hours
Cystourethroscopy with manipulation	GU tract	All	- Fluoroquinolone - TMP-SMX	- Aminoglycoside (Aztreonam¥) ± Ampicillin - 1st/2nd gen. Cephalosporin - Amoxicillin/Clavulanate	=24 hours



AUA guidelines – Risk factors

- According to AUA guidelines, antimicrobial prophylaxis is indicated for patients with certain risk factors:
 - Advanced age
 - Poor nutritional status
 - Smoking
 - Chronic corticosteroid use, immunodeficiency
 - Externalized catheters, prolonged hospitalization
 - Anatomic anomalies of urinary tract
 - Distant coexistent infection



Initial Data

- Cystoscopy nurses surveyed: antimicrobial agent use staff dependent
- 27 patient charts reviewed
- 5/27 patients got antibiotics
- 15/27 patients had a risk factor listed in the AUA Best Practice statement
- Therefore, only 33% of patients with risk factors actually got antibiotics.
- 2/12 patients got antibiotics when they did not have risk factors



Change Ideas

Staff reminders



Does your patient need antibiotics?
Are they have...



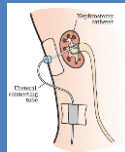
Advanced age



Immunodeficiency



Poor nutrition



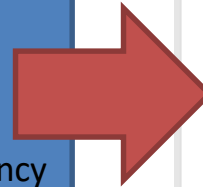
Externalized catheters,
prolonged hospitalization



Smoking history



Anatomic abnormalities



Expert Opinion Survey

Antibiotic Prophylaxis during cystoscopy Expert Opinion Survey

1. How do you feel about the AUA best practices guidelines for antibiotic prophylaxis prior to Urologic procedures?

2. Do you agree with the risk factors listed in the Best Practices guideline? Why or why not?

3. What are reasons why you would give someone antibiotics for their cystoscopy?

4. Which risk factors should be included? How many of them are patient factors? What data are you using to make this judgement?



Change Ideas: Staff Survey

- 4 Urology staff at 2 different institutions surveyed
 - AUA Best Practice statement too vague and broad (Smoking, Advanced age, immunodeficiency).
 - Differences between practice of Urology in America and Canada (e.g. more defensive medicine in America)
 - Most common reasons to prescribe antibiotic prophylaxis:
 - Unexpected procedure (e.g. dilation)
 - Current symptoms of infection
 - History of recurrent UTIs
 - Prior UTIs post-cystoscopy
 - Infected looking urine (cloudy, frank pyuria)
 - Neurological disease



CUA guidelines – Also Vague



Pre-procedural antibiotics show a strong trend towards reducing the risk of UTI, but not fever, after endoscopic urologic procedures. No adverse events associated with antibiotics were reported. Pre-procedural antibiotics should be considered in patients at high risk of infectious complications (Grade C, Level of Evidence IB). The choice of specific agent for prophylaxis should be based, in part, on the local epidemiology of drug resistance in potential uropathogens (Grade D, Level of Evidence IV)



Revised AIM Statement

- To standardize antibiotic prophylaxis for cystoscopy by identifying relevant risk factors

Strategy

- Prospective chart review of patients seen in cystoscopy clinic between January and May 2017 who got a cystoscopy excluding manipulation (e.g. intravesical injections, stent insertion, dilations)
- Collected information on whether patients got prophylaxis and why and compared with risk factors identified in the AUA Best Practice guidelines.

Results

- 55 charts reviewed
 - 6/55 patients given prophylaxis
 - Most common reason: signs of infected urine
 - 28/55 patients had AUA risk factors
 - Most common reason for discrepancy: advanced age (defined as age > 75), then smoking.
 - Most common reason for giving prophylaxis without AUA risk factors:
 - History of recurrent UTIs/UTIs post-cystoscopy
 - Patient preference

Limitations

- Observation bias
- Small sample size
- Difficult to implement
- Staff buy-in – difficult to change longstanding practice, especially in era of Antimicrobial Stewardship

Conclusions

- Advanced age and smoking not considered sufficient risk factors for abx prophylaxis.
- Additional considerations not included in guidelines should be considered
 - Mainly, infective risk (ie. evidence of current or recurrent infections)
- Room for revised standardized criteria for antibiotic prophylaxis

Questions

