Poster 995

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Antimicrobial Stewardship through the Characterization of Inappropriate Antibiotic Therapy for Urinary Tract Infections in the Emergency Department

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Background

- Urinary tract infections (UTIs) account for > 25 million ED visits per year
- Clinicians in the ED lack the tools to determine microbial presence in patients with uncomplicated UTI, resulting in empiric decision-making regarding treatment. [1]
- Current IDSA guidelines recommend floroquinolones (FQ) as first line for acute pylenephritis only; treatment of cystitis should include nitrofurantoin or TMP-SMX (where local resistance rates <20%)[2]
- **Our hospital wide antibiogram reports the following resistance rates** for common uropathogens :

	Ciprofloxacin	TMP-SMX	Ceftriaxone
Enterococcus spp.	29	*	*
S. aureus	55	5	*
E. coli	35	35	7
K. pneumonia	16	22	17
P. mirabilis	28	23	5

Objectives

- Determine rates of inappropriate use of broad spectrum antibiotics for patients that meet the criteria for uncomplicated UTI per the 2012 IDSA guidelines.
- Define rates and identify predictors of inappropriate antimicrobial use in the ED

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Methods

- Prospective observational study of females between 18 and 65 exhibiting signs of UTI in an inner-city academic ED.
- Enrollment conducted Monday to Friday, 8 am-7 pm, and Saturday to Sunday, 9am-5pm.
- Clinical decision-making at discretion of the individual healthcare provider.
- Demographic, behavioral, and clinical data collected by direct patient interview, and treatment information collected from the healthcare provider.
- SAS 9.3 was used for all analyses.

Results

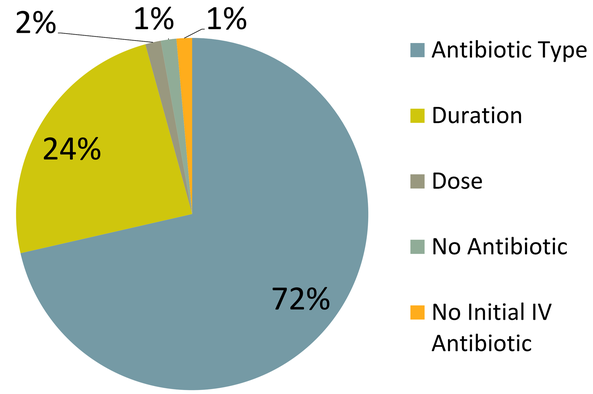
- **150** patients enrolled
- **70** excluded from analysis due not meeting definition of uncomplicated UTI

PATIENT AND UTI CHARACTERISTICS

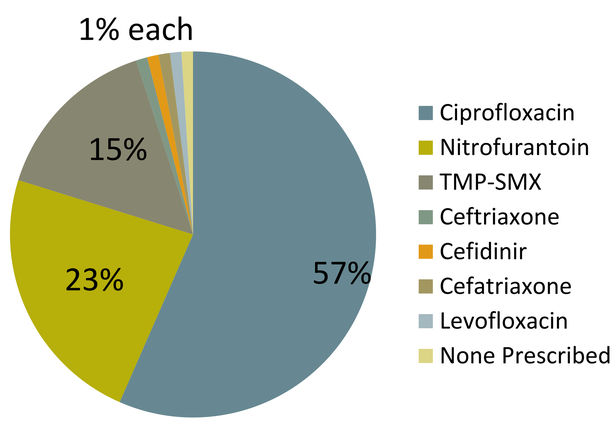
Characteristic (N=80)	Frequency (%)
Age (years)	Mean= 30.8 (18-64)
Race	59% Black 25% White 7% Hispanic 9% Other
Sexually Active	79%
Prior History of UTI	58%
Onset of Symptoms (days)	Mean= 4.26 (0-30)
Clinical Diagnosis	64% UTI; Site Unspecified 18% Pyelonephritis 15% Cystitis 3% Other
Fever	10%
Flank and/or back pain	47%

DESCRIPTION OF NONADHERENCE

- Management of **69% (55)** of cases did not adhere to IDSA guidelines.



ANTIBIOTICS USED



PREDICTORS OF NONADHERENCE

Characteristic	p-value, OR, and 95% CL
Prior History Of UTI	OR=0.21, 95% CL (0.06, 0.77) p=0.019
Nitrites	OR=0.19, 95% CL (0.05, 0.73) p=0.015

Preliminary Conclusions

- Majority of UTI treatment does not adherent to 2011 IDSA recommendations.
- Of 37 patients who reported no fever or flank/back pain, 63% (23) received ciprofloxacin and 35% (8) of those had antibiotic duration ≥4 days, indicating tendency of overtreatment in ED
- **Patients with prior history of UTI and positive nitrites in a urinalysis were less likely to receive non-adherent treatment.**
- Provider type was not significantly associated with non-adherence

Limitations

- Small convenience small limited to single institution
- Final ICD-9 codes not necessarily reflective of working diagnosis
- Not all clinically related factors that might have necessitated antibiotic prescription could be accounted for in this study

References

[1] Caterino JM, Ting SA, Sisbarro SG, Espinola JA, Camargo CA Jr. Age, nursing home residence, and presentation of urinary tract infection in U.S. emergency departments, 2001-2008. *Acad Emerg Med.* 2012 Oct;19(10):1173-80. doi: 10.1111/j.1553-2712.2012.01452.x.

[2] Gupta, K Hooton T, Naber I, et al. International Clinical Practice Guidelines for the Treatment of Acute Uncomplicated Cystitis and Pyelonephritis in Women: A 2010 Update by the Infectious Diseases Society of America and the European Society for Microbiology and Infectious Diseases. *CID. 2011; 52: 111-120.*