

No Clinical Benefit to Treatment of Male Urinary Tract Infection Longer than Seven Days: An Outpatient Database Study

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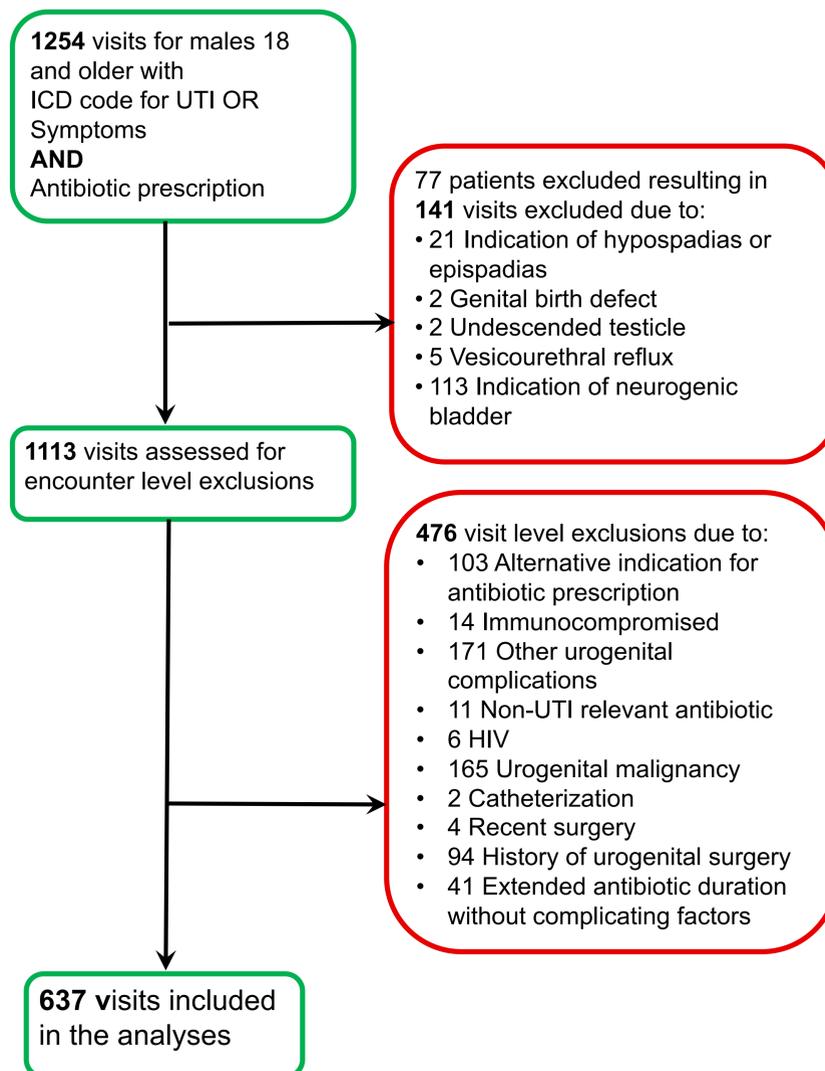
Background

- Urinary Tract Infections (UTI) are the most common bacterial infections in the United States and the most frequent cause of bacteremia in men.
- Although several recommendations regarding choice of antimicrobials have been outlined, the optimal duration of treatment remains uncertain due to lack of clinical trials, particularly among men with non-febrile UTI, the most commonly seen in outpatient clinics.
- We examined the relationship between treatment duration and UTI recurrence in a non-VA outpatient population with fewer comorbidities, and by differentiating between complicating conditions predisposing to UTI recurrence in our analysis.

Methods

- We conducted a retrospective cohort study using deidentified electronic health records for male patients 18 years and older from three types of outpatient specialty clinics (family medicine, urology and internal medicine).
- Exclusion criteria are outlined in Figure 1.
- All UTI-related visits were classified as an index case, an early recurrence, or a late recurrence.
- The primary exposure was treatment duration, dichotomized as short (≤ 7 days) or long (> 7 days).
- Visits were then classified as having or not having complicating factors, based on the presence of one or more visit-level diagnoses of the following: pyelonephritis, prostatitis, or nephrolithiasis.
- Multivariable logistic regression was used to examine the association between the treatment duration and UTI recurrence, with stratified analysis for subgroups of men with various complicating factors.

Figure 1. Selection process used to determine UTI visits

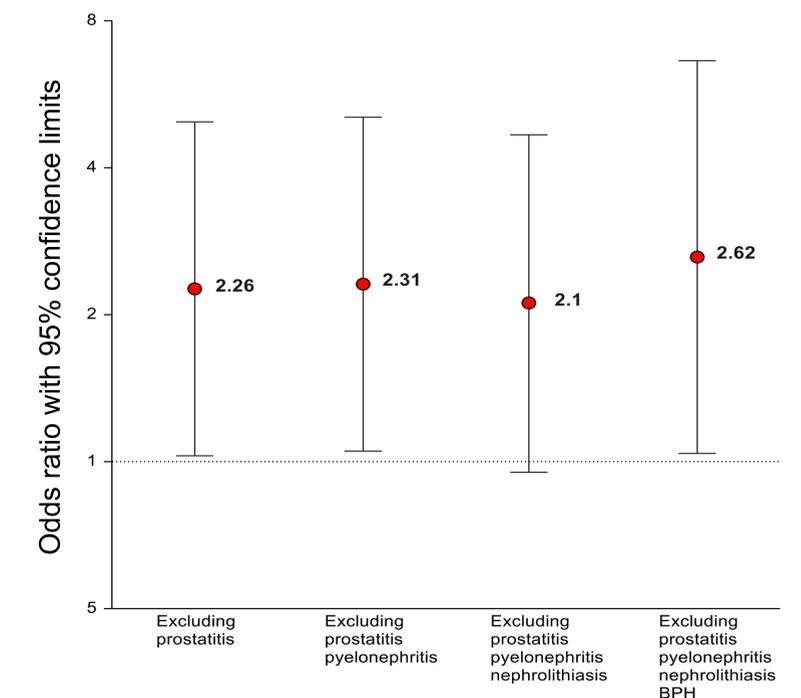


Results

Table 1. Comparison of patient characteristics, antibiotic choice and treatment duration stratified by the presence of complicating factors

n (%)	Visits without complicating factors (n=518)	Visits with complicating factors (n=119)	P Value
Age, median (IQR), y	57 (40-67)	52 (40-64)	0.10
Department			0.06
Family medicine	276 (53.3)	49 (41.2)	
Urology	211 (40.7)	61 (51.3)	
General internal medicine	31 (6.0)	9 (7.6)	
Fever	9/273 (3.3)	3/49 (6.1)	0.40
Diabetes mellitus	57 (11.0)	4 (3.4)	0.01
Charlson comorbidity index, median (IQR)	0 (0-0)	0 (0-1)	0.11
Benign prostatic hyperplasia	152 (29.3)	45 (37.8)	0.07
Antibiotic			0.85
Fluoroquinolones	362 (69.9)	82 (68.9)	
TMP-SMX	111 (21.4)	24 (20.2)	
Nitrofurantoin	27 (5.2)	7 (5.9)	
β -lactams	18 (3.5)	6 (5.0)	
Treatment duration			<0.0001
≤ 5 days	96 (18.6)	5 (4.2)	
> 5 & ≤ 7 days	167 (32.3)	13 (10.9)	
> 7 & ≤ 10 days	161 (31.1)	33 (27.7)	
> 10 & ≤ 14 days	93 (18.0)	29 (24.4)	
> 14 days	0 (0)	39 (32.8)	
Treatment duration, median (IQR), days	7 (7-10)	14 (10-28)	<0.0001

Figure 2. Risk of UTI recurrence higher with longer versus shorter treatment duration regardless of predisposing conditions



Conclusions

- Longer treatment duration in outpatient settings was associated with increased risk of recurrence of UTI in men without additional complicating factors.
- Shorter duration of antibiotic treatment for male UTI may lead to decreased risk of antibiotic resistance, fewer adverse effects, and lower costs