

Conclusion. GC and CT infections increased between 2013 and 2017 in VA. Although females comprise 10% of the VA population, they proportionally had increased GC and CT positive Results. VA providers could improve retesting practices 3–12 months post-infection for patients with GC and/or CT.

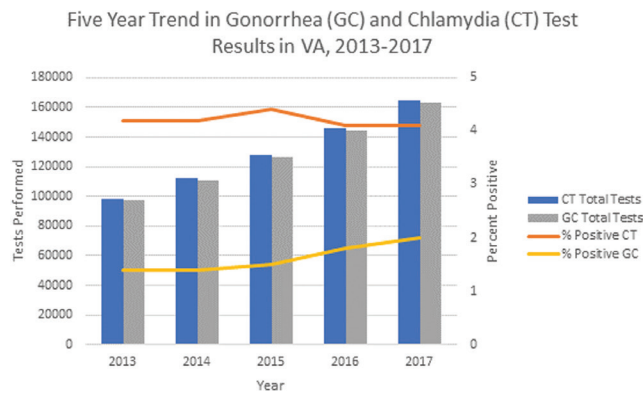
Table. Demographic Factors and Repeat Testing in Gonorrhea (GC) and Chlamydia (CT) Infections in VA, January 1, 2013–December 31, 2017.

	GC N = 641,535	CT N = 648,320	GC+CT N = 638,361
Unique patients tested	414,316	417,641	407,708
Total positive results	10,587	27,306	1,935
Unique positive patients	9,149	24,257	1,804
Female:male ^a	1,109:8,040	7,600:16,657	291:1,513
Average age (range)	40 (17–87)	31 (13–88)	36 (17–84)
Repeat testing performed (% of total positive results) ^b	2,702 (26)	7,906 (29)	593 (31)

^aOverall, VA population is 10% female (www.womenshealth.va.gov).

^bAny GC/CT test 3–12 months after a positive result.

Figure: Five-Year Trend in Gonorrhea (GC) and Chlamydia (CT) Test Results in VA, January 1, 2013–December 31, 2017.



Disclosures. All authors: No reported disclosures.

1500. At Risk Drinking Is Common Among HIV-Infected Department of Defense (DoD) Beneficiaries But Was Not Associated with Prevalent GC/CT Infections

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Session: 149. Sexually Transmitted Infections

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Background. At-risk drinking and sexually transmitted infections (STIs) are both common among HIV-infected patients. Nearly 50% of subjects in the US Military Natural History Study (NHS), a cohort of HIV-infected DoD beneficiaries, report alcohol misuse. Nonetheless, few studies have examined whether at-risk drinking, a modifiable risk factor, is associated with STIs in this population. We examined the relationship between alcohol use and prevalent gonorrhea (GC) and chlamydia (CT) infections.

Methods. Consented NHS subjects underwent genitourinary (GU) and extragenital nucleic acid amplification testing (NAAT) for GC/CT infections and responded to

a behavioral survey to describe substance use and sexual risk. At-risk drinking was defined as consumption of >4 drinks/day or 14 drinks/week. Logistic regression was used to examine the association of at risk drinking and GC/CT infections.

Results. A total of 472 men were included with a median age of 41 years (IQR 31, 51); 44% were African American. Male sexual partners were reported by 90%. At-risk drinking (54%) and having sex while drunk in the last 6 months (21%) was commonly reported. Overall, 15% (n = 70) had either GC or CT infection. With respect to anatomic site, 11% had anorectal infections (GC = 4%; CT = 7%), 5.3% had pharyngeal infection (GC 3.8%; CT –1.4%) and, 2.3% had GU infection (GC 0.6%; CT 1.7%). In univariate analysis, younger age, multiple male sexual partners, having sex while drunk, and concurrent partnership were associated with STI diagnosis. In the adjusted model, multiple male partners and concurrent sex remained significant (see table).

Conclusion. At-risk drinking remains common in the NHS; however, it was not associated with GC/CT infections. We observed a high prevalence of GC/CT infection, emphasizing the importance of ongoing screening of this high-risk population. Although strategies to reduce alcohol use are unlikely to reduce STIs in our population, these strategies are necessary to reduce other adverse health consequences associated with alcohol use.

Characteristics	Odds Ratio (95% CI)
Age per 10-year increase	0.81(0.64, 1.02)
Male sex partner (last 3 months)	
None	Ref
1–4	4.1 (1.2–13.6)
>5	5.5 (1.5–21.1)
Concurrent sex (last 3 months)	
No	Ref
Yes	2.03 (1.04–3.96)

Disclosures. All authors: No reported disclosures.

1501. Comparative Effectiveness of Antibiotic Therapy for the Outpatient Treatment of Urinary Tract Infections Among Otherwise Healthy, Premenopausal Women

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Session: 150. Urinary Tract Infection

Friday, October 5, 2018: 12:30 PM

Background. The comparative effectiveness of antibiotics for empiric therapy for urinary tract infection (UTI) is not well established. We sought to estimate the risk of treatment failure by guideline-recommended agent for treatment of UTI in otherwise healthy, premenopausal women.

Methods. Using US commercial insurance claims data (2006–2015), we conducted a retrospective cohort study of nonpregnant women 18–44 years who received an outpatient diagnosis of UTI with a prescription for an antibiotic with activity against common uropathogens. For each antibiotic agent, we estimated the daily cumulative risk and 95% confidence intervals (CIs) of treatment failure defined by a subsequent UTI-related antibiotic prescription since the index prescription. Propensity-score weighting accounted for patient-, geographic-, and provider-level characteristics.

Results. Among 1,100,661 eligible women, the majority received second-line fluoroquinolones (43%), first-line trimethoprim-sulfamethoxazole (28%), or first-line nitrofurantoin (24%). Seven-day and 30-day treatment failure occurred in 8.4% (n = 92,382) and 20.5% (n = 225,746) of women, respectively. Among initiators of first-line agents, the 7-day weighted cumulative incidence estimates of treatment failure were lower for nitrofurantoin (6.0%, 95% CI, 5.9%–6.1%) vs. trimethoprim-sulfamethoxazole (8.8%, 95% CI, 8.7%–9.0%). Among initiators of second-line agents, treatment failure did not differ between fluoroquinolones (5.0%, 95% CI, 4.9%–5.1%), narrow-spectrum β -lactams (5.1%, 95% CI, 4.9%–5.4%), or broad-spectrum β -lactams (5.3%, 95% CI, 4.9%–5.7%). Among initiators of nonguideline recommended β -lactams, treatment failure was 9.6% (95% CI, 9.0%–10.3%). Results were similar for 30-day treatment failure, with the exception of lower risk for fluoroquinolones compared with other second-line agents.

Conclusion. The risk of treatment failure differs widely by antibiotic agent, with substantial differences between two first-line agents. Understanding the effectiveness of antibiotic therapy is critical to guide clinical decision making, reduce suboptimal antibiotic prescribing, and prevent antibiotic resistance and other adverse events.

Disclosures. All authors: No reported disclosures.

1502. Identifying Risk Factors for Recurrent Urinary Tract Infections Among Female Outpatients

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Session: 150. Urinary Tract Infection
Friday, October 5, 2018: 12:30 PM

Background. Up to 44% of women who experience a urinary tract infection (UTI) develop a recurrent infection (rUTI) within one year. Insufficient evidence about risk factors for recurrence limits clinicians' ability to identify women at risk for rUTI who may benefit from further interventions.

Methods. We conducted a retrospective cohort study of women age ≥18 years who presented for treatment of a UTI at Oregon Health & Science University ambulatory care clinics between 2011 and 2016. Pregnant women as well as those with a recent urinary catheter, genitourinary (GU) procedure, or hospitalization were excluded. The outcome was defined as the first episode of rUTI within one year of an index UTI. Demographics, biologically relevant comorbidities, and the antibiotic prescribed to treat the index UTI were evaluated as potential risk factors for first rUTI using multivariable logistic regression. A best subsets approach was used to determine the most parsimonious model.

Results. A total of 3,632 patients met inclusion criteria. The mean age of the cohort was 50 ± 20 years and 12% had a diabetes diagnosis. To treat their index UTI, 36% of women were prescribed fluoroquinolones, 33% sulfamethoxazole and/or trimethoprim, and 25% nitrofurantoin. Over the study period, the cumulative incidence of first rUTI was 16% (95% confidence interval (CI): 15.3%, 17.7%); 35% (95% CI: 31%, 39%) of these patients had >1 rUTI. Our model identified age (Odds ratio (OR): 1.02; 95% CI: 1.01, 1.02), urban residence (OR: 1.78; 95% CI: 1.28, 2.57), and neurologic disease diagnosis (OR: 1.46; 95% CI: 1.13, 1.89) affecting GU function (e.g., multiple sclerosis or spinal cord injury) as significant, independent risk factors of first rUTI after adjusting for the confounding effects of diabetes, obesity, and history of stroke or other cerebrovascular disease.

Conclusion. Diagnosis of neurologic disease that impacts GU function, age, and urban residence were identified as significant risk factors for first rUTI. The antibiotic selected to treat patients' index UTI was not a significant risk factor for first rUTI. Future studies are needed to identify risk factors beyond what is currently captured discretely in the electronic health record to address critical gaps in our understanding of risk factors for rUTI.

Disclosures. J. C. McGregor, Merck: Grant Investigator, Research grant

1503. No Benefit to Treating Male UTI for Longer Than 7 Days: An Outpatient Database Study

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Session: 150. Urinary Tract Infection
Friday, October 5, 2018: 12:30 PM

Background. The optimal approach for treating outpatient male urinary tract infections (UTI) is unclear. We studied the current management of male UTI in private outpatient clinics, and evaluated antibiotic choice, treatment duration, and the outcome of recurrence of UTI.

Methods. Visits for all male patients 18 years of age and older during 2011–2015 with ICD-9 Codes for UTI or associated symptoms were extracted from the EPIC Clarity Database of two family medicine, two urology and one internal medicine clinics. For each eligible visit in which an antibiotic was prescribed, we extracted data on the antibiotic used, the duration of treatment, recurrent UTI episodes, as well as patient medical and surgical history. Urologic anatomic abnormalities were an exclusion criterion (Figure 1).

Results. Six hundred thirty-seven eligible visits were included for 573 unique patients (mean age 53.7 (±16.7 years)). Fluoroquinolones (FQs) were the most commonly prescribed class of antibiotic (69.7%), followed by trimethoprim-sulfamethoxazole (TMP-SMX) (21.2%), nitrofurantoin (5.3%) and β-lactams (3.8%). Use of FQ was lower in the age group of 55 years and above than <55 years (65.4% vs. 74.6% respectively, $P < 0.01$). Visits in the urology department were less likely to be treated with TMP-SMX, but more likely to be treated with a β-lactam. Those with a higher Charlson Comorbidity Index were more likely to be treated with β-lactams. Nitrofurantoin use was higher for men 55 years of age and above compared with those younger (7.4% and 3% respectively, $P < 0.01$). Overall, the rate of recurrence was 5.6%. Recurrence was not significantly different between longer (>7 days) and shorter (≤7 days) treatments. In the multiple regression analysis, predictors of longer treatment duration included presence of complicating factors (pyelonephritis, nephrolithiasis or prostatitis), use of nitrofurantoin or β-lactams, and visits seen in urology. The presence of fever, diabetes, and BPH, as well as patient race, were not associated with antibiotic choice or treatment duration.

Conclusion. Men with UTIs are most frequently prescribed FQ. Providers' choice of antibiotic was influenced by patient age and comorbidities, while treatment duration was influenced by presence of complicating factors.

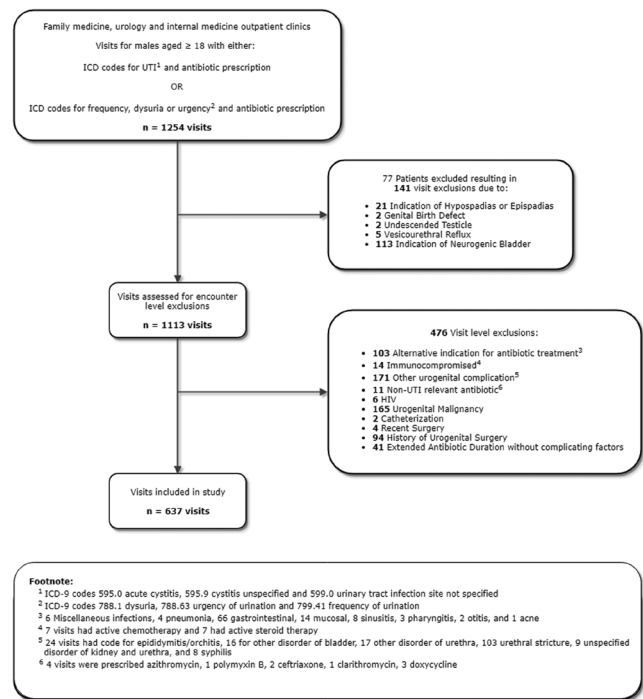


Figure 1. Inclusion and exclusion criteria

Disclosures. B. W. Trautner, Paratek: Consultant, Consulting fee; Zambon: Consultant, Consulting fee and Research grant. K. Gupta, Paratek Pharmaceuticals: Consultant, Consulting fee; Iterum Therapeutics: Consultant, Consulting fee; Tetrphase Pharmaceuticals: Consultant, Consulting fee. L. Grigoryan, Zambon Pharmaceuticals: Grant Investigator, Research grant.

1504. Patient Demographics and Comorbidity Profiles Associated with Hospitalized Patients Admitted with Resistant vs. Susceptible Urinary Tract Infections (UTIs): A Multicenter Analysis

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Session: 150. Urinary Tract Infection
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Background. A significant percentage of patients admitted to the hospital with UTI are infected with ESBL positive and quinolone-resistant (FQ NS) enterobacteriaceae (ENT) that can complicate patient outcomes due to potentially inadequate antibiotic therapy. We used a large national multicenter database to ascertain the demography associated with susceptible and resistant UTI and the underlying comorbidities.

Methods. We analyzed the first positive ENT urine culture ≤3 days from admission in those with a discharge primary or secondary UTI ICD10 code from 68 US hospitals from October 1, 2015–2017 (BD Insights, Franklin Lakes, NJ). Patient demographics were identified using AHRQ classifications to assess for specific risk factors and categorized by ESBL and FQ resistance status. Healthcare-associated (HCA) episodes were defined as admissions from another care facility, admission in the prior 30 days, and presence of dialysis or cancer comorbidity. The Fisher's exact test was used to test for significance.

Results. Of 16,022 adults (mean age 69.5 years; 77.7% female) with culture positive ENT UTI were identified; 11.0% ($n = 1,763$) were ESBL +, 31.3% ($n = 5,017$) were FQ NS and 8.9% ($n = 1,433$) being both ESBL + and FQ NS. Admissions with ESBL + /FQ NS were significantly more likely to be male, admitted with HCA risk factors and with higher important comorbidities.

Demographic	ESBL - /FQ S	FQ NS	ESBL + /FQ NS
N (%)	10,784 (67.3%)	5,017 (31.3%)	1,433 (8.9%)
% Male	2,252 (20.9%)	1,284 (25.6%)	401 (28.0%)*
%HCA	2,716 (25.2%)	1,505 (30.3%)	489 (34.1%)*
Deficiency anemias	2,840 (26.3%)	1,563 (31.2%)	508 (35.5%)*
Renal failure	2,196 (20.4%)	1,227 (24.5%)	402 (28.1%)*
Chronic pulmonary disease	2,009 (18.6%)	1,191 (23.7%)	345 (24.1%)*
Diabetes	1,947 (18.1%)	1,095 (21.8%)	318 (22.2%)*
Diabetes w/ chronic complications	1,872 (17.4%)	979 (19.5%)	313 (21.8%)*
Congestive heart failure	1,648 (15.3%)	1,011 (20.2%)	292 (20.4%)*

* $P < 0.0002$ vs. ESBL/FQ S; ^ $P < 0.0032$ FQ NS vs. ESBL+/FQ NS; ‡ $P < 0.0012$ FQ NS vs. ESBL/FQ S.