radiograph (P=0.031). These data suggest potentially consequential interruptions and delays in pulmonary TB diagnosis during the COVID-19 period.

Disclosures. **Susan Bulter-Wu, PhD , Cepheid** (Consultant)

194. Progression of an Uncomplicated Urinary Tract Infection Among Female Patients with Susceptible and Non-Susceptible Urine Isolates: Findings from an Integrated Delivery Network

Jason Shafrin, PhD[1]; Alen Marijam, MSc[2]; Ashish V. Joshi, PhD[3]; Fanny S. Mitrani-Gold, MPH[3]; Katie Everson, MSc[4]; Rifat Tuly, MPH[1]; Peter Rosenquist, MSc[5]; Michael Gillam, MD[6]; Maria Elena Ruiz, MD[7]; [1]PRECISIONxtract, Los Angeles, CA, USA; [2]GlaxoSmithKline plc., Collegeville, PA; [3]GlaxoSmithKline plc, Collegeville, PA; [4]PRECISIONheor, Austin, TX; [5]PRECISIONheor, Washington, DC; [6]MedStar Health, Washington, DC ; [7]MedStar Washington Hospital Center, Washington, DC

Session: O-39. UTIs

Background. Uncomplicated urinary tract infection (uUTI) is often treated empirically without antibiotic (AB) susceptibility testing; however, antimicrobial-resistant bacteria could lead to suboptimal treatment and progression to complicated UTI (cUTI). We examined the likelihood of uUTI progression to cUTI in patients with susceptible and non-susceptible uropathogens.

Methods. We performed a retrospective cohort study using data from a large Mid-Atlantic US integrated delivery network's electronic health records from July 1, 2016 to March 31, 2020. Patients included were female, aged ≥ 12 years with incident uUTI (diagnosis code or urine culture), and given an oral AB ± 5 days of diagnosis and ≥ 1 antibiotic susceptibility test. The primary outcome was progression to cUTI, defined as: new fever, nausea, or vomiting, in addition to uUTI symptoms; or receipt of intravenous antibiotic 3–28 days after index uUTI. Probability of progression to cUTI was assessed comparing patients with non-susceptible and susceptible isolates, with 1:1 propensity score matching. Patients retained for analysis had a nonzero predicted probability of being in the case and control group and were retained for analysis only if there were patients in the mirror group with similar propensity scores. Data were analyzed with logistic regression. Sensitivity analyses were performed to test the robustness of the primary analysis (**Table**).

Results. A total of 2565 patients were included: 1030 (40.2%) had non-susceptible isolates and 1535 (59.8%) had susceptible isolates. Mean age was 43.5 years and 59.5% of the cohort was White. After propensity score matching, patients with non-susceptible isolates were more than twice as likely to progress to cUTI versus patients with sensitive isolates (10.7% versus 4.9%; odds ratio, 2.35; p < 0.001; **Figure**). In sensitivity analyses, patients with non-susceptible isolates remained significantly more likely to progress to cUTI (p ≤ 0.009), excluding those receiving fluoroquinolones only (**Table**).

Figure. Probability of progression to cUTI

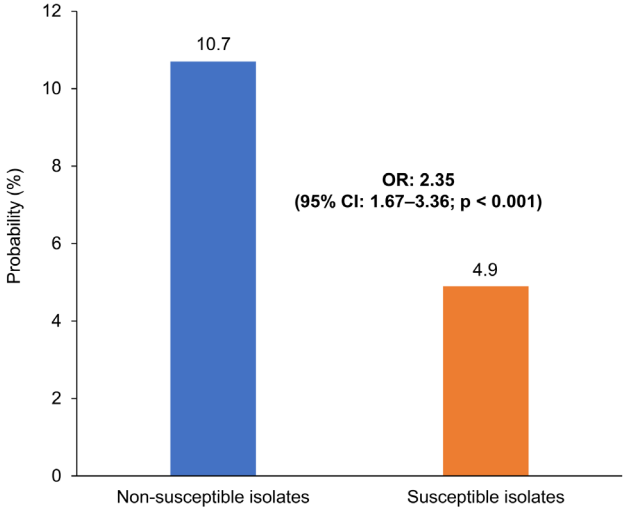

Table. Sensitivity analyses of the probability of uUTI progressing to cUTI in patients with non-susceptible versus susceptible isolates (matched population)

Sensitivity analysis	Probability of progressing to cUTI	
	Difference	p-value
Baseline (N=1009*)	0.060	**< 0.001**
Strict exclusion (n=661)†	0.039	**0.009**
Excluding other infections (n=995)‡	0.058	**< 0.001**
FQ-only (n=166)§	0.036	0.387

*Population size after matching; †including only patients with a documented uUTI diagnosis *and* positive urine culture; ‡including only patients with no other acute/semi-acute infections within 14 days of index uUTI; §including only patients initiating therapy with FQ: FQ was singled out because as of 12 May 2016 a black-box warning has been added to the label and outcomes with FQ are therefore of interest. Bold p values are statistically significant (p < 0.05).

cUTI, complicated urinary tract infection; FQ, fluoroquinolone; uUTI, uncomplicated urinary tract infection.

Conclusion. Patients with uUTI and AB-resistant isolates were significantly more likely to progress to cUTI than those with susceptible isolates. This finding highlights the need for greater understanding of antimicrobial resistance and has implications for the clinical management of uUTI.

Disclosures. **Jason Shafrin, PhD**, **Precision Medicine Group** (Employee, Former employee of Precision Medicine Group, which received funding from GlaxoSmithKline plc. to conduct this study) **Alen Marijam, MSc**, **GlaxoSmithKline plc.** (Employee, Shareholder) **Ashish V. Joshi, PhD**, **GlaxoSmithKline plc.** (Employee, Shareholder) **Fanny S. Mitrani-Gold, MPH**, **GlaxoSmithKline plc.** (Employee, Shareholder) **Katie Everson, MSc**, **Precision Medicine Group** (Employee, Employee of Precision Medicine Group, which received funding from GlaxoSmithKline plc. to conduct this study) **Rifat Tuly, MPH**, **Precision Medicine Group** (Employee, Employee of Precision Medicine Group, which received funding from GlaxoSmithKline plc. to conduct this study) **Peter Rosenquist, MSc**, **Precision Medicine Group** (Employee, Employee of Precision Medicine Group, which received funding from GlaxoSmithKline plc. to conduct this study) **Michael Gillam, MD**, **MedStar Health** (Employee, Employee of MedStar Health and received funding from GlaxoSmithKline plc. through Precision Medicine Group to conduct this study) **Maria Elena Ruiz, MD**, Nothing to disclose

195. Intravenous to Oral Antibiotics Versus Intravenous Antibiotics: A Step-Up or a Step-Down for Extended Spectrum Beta-Lactamase Producing Urinary Tract Infections?

Kelly C. Gamble, PharmD[1]; Dusten T. Rose, PharmD, BCIDP, BCPS (AQ-ID), AAHIVP[2]; Julia Sapozhnikov, PharmD, BCIDP[3]; [1]Ascension Seton, Austin, TX; [2]Seton Healthcare Family, Austin, TX; [3]Ascension Texas- Dell Children's Medical Center of Central Texas, Austin, Texas

Session: O-39. UTIs

Background. The treatment of extended-spectrum beta-lactamase (ESBL)-producing urinary tract infections (UTI) may include either intravenous (IV) or oral (PO) antibiotics, according to the Infectious Diseases Society of America guidelines for resistant gram negative infections. The purpose of this study is to evaluate if PO step-down antibiotics, the switch group, compared to continued IV therapy in these UTIs affects clinical outcomes.

Methods. This multicenter retrospective cohort study was conducted in hospitalized patients with an ESBL-producing UTI between July 2016 and March 2020. The control group received a complete antibiotic course with a carbapenem. The switch group was transitioned to an oral agent within five days from initiation of a carbapenem. The primary endpoint was a composite all-cause clinical failure, which was defined as readmission or hospital mortality within 30 days of hospital discharge or a change in antibiotic during hospital admission. The secondary endpoints included individual components of the primary outcome, readmission indication, inpatient length of stay, direct antibiotic costs, and adverse events.

Results. The study included 153 patients: 95 and 58 patients in the control and switch groups, respectively. Demographics between the two groups were similar (Table 1). The mean ± SD duration of therapy was 8.7 ± 3.1 and 7.1 ± 3.3 days, respectively. Four oral agents were used for step-down therapy (Figure 1). The primary outcome occurred in 28% in both groups (27 vs 16 patients, p=0.91). The individual components of the primary outcome and readmission indication were also similar: readmission (93% vs 94%, p=0.95), readmission due to a recurrent UTI (33% vs 25%, p=0.73), hospital mortality (7% vs 6%, p=1.0), and change in antibiotic (0% vs 2%, p=0.38). The median (IQR) length of stay and direct antibiotic cost in the control and switch groups were 8 (6) vs 5 (2) days (p< 0.01) and $278 ($244) vs $180 ($104) (p< 0.01), respectively. Adverse events were similar in both groups except for diarrhea (15% vs 2%, p=0.01).

Table 1. Baseline Demographics. SD: standard deviation, ICU: intensive care unit, qSOFA: quick Sequential Organ Failure Assessment, ESBL: extended spectrum beta-lactamase, UTI: urinary tract infection

Demographic	Control (n=95)	Switch (n=58)
Age, years (mean ± SD)	68 ± 17	68 ± 19
Male, n (%)	28 (29.5)	20 (34.5)
Race, (%)		
Caucasian	52 (54.7)	36 (62.1)
Hispanic/Latino	24 (25.3)	12 (20.7)
African American	15 (15.8)	6 (10.3)
Other	4 (4.2)	4 (6.9)
Past Medical History, n (%)		
Diabetes	44 (46.3)	28 (48.3)
Chronic kidney disease	22 (23.2)	28 (48.3)
Cardiovascular	70 (73.7)	44 (75.9)
Pulmonary	16 (16.8)	4 (6.9)
Malignancy	17 (17.9)	6 (10.3)
Charlson Comorbidity Score (mean ± SD)	4.8 ± 2.7	4.5 ± 2.5
ICU admission, n (%)	26 (27.4)	5 (8.6)
qSOFA (mean ± SD)	1.0 ± 0.9	0.6 ± 0.7
History of ESBL-producing organism, n (%)	19 (20)	9 (15.5)
UTI classification		
Uncomplicated cystitis	9 (9.5)	7 (12.1)
Complicated cystitis	62 (65.3)	42 (74.2)
Immunocompromised	7 (7.4)	5 (8.6)
Kidney stones	4 (4.2)	4 (6.9)
Obstruction	7 (7.4)	4 (6.9)
Ureteral stents	4 (4.2)	4 (6.9)
Neurogenic bladder	2 (2.1)	3 (5.2)
Pyelonephritis	17 (18)	7 (12.1)
Catheter-related	7 (7.4)	2 (3.4)
Organism		
E. coli	74 (77.9)	46 (79.3)
K. pneumoniae	19 (20)	8 (13.8)
K. oxytoca	1 (1.1)	4 (6.9)
P. mirabilis	2 (2.1)	0 (0)

SD: standard deviation, ICU: intensive care unit, qSOFA: quick Sequential Organ Failure Assessment, ESBL: extended spectrum beta-lactamase, UTI: urinary tract infection