Other Antibiotic Use

Variable	Total (n = 127)	Pre-group (n = 56)	Post-group (n = 71)	p-value
	n (%)			
Inpatient FQ (y/n)	32 (25.2)	22 (39.3)	10 (14.1)	0.001[A]
All Discharge Antibiotics				0.038[A]
Beta-lactam	34 (26.8)	15 (26.8)	19 (26.8)	
Nitrofurantoin	31 (24.4)	8 (14.3)	23 (32.4)	
SMX/TMP	24 (18.9)	10 (17.9)	14 (19.7)	
FQ	38 (29.9)	23 (41.1)	15 (21.1)	

SMX/TMP = sulfamethoxazole/trimethoprim; FQ = fluoroquinolone; A = Chi-Square test

Risk Factors for FQ Use at Discharge

Variable	Individual Variables		Multiple Variable Model	
	OR (95% CI)	P-value	aOR (95% CI)	P-value
Post- vs. Pre-Group	0.304 (0.133-0.692)	0.005	0.493 (0.138-1.762)	0.277
Inpatient FQ Use	10.529 (3.692-30.03)	<.001	13.43 (3.821-47.205)	<.001
Insurance	0.500 (0.188-1.335)	0.167	0.289 (0.113-0.744)	0.01
Male Gender	1.529 (0.441-5.304)	0.504		
CrCL	1.006 (1-1.012)	0.045		
SCr	1.119 (0.858-1.459)	0.407		
Allergies	0.843 (0.373-1.904)	0.68		
WBC	1.036 (0.909-1.182)	0.596		
Platelets	1.003 (0.999-1.007)	0.176		
Age	0.982 (0.957-1.008)	0.179		

OR = odds ratio

Conclusion: Suppression of FQ susceptibilities on pan-susceptible urine isolates for *Klebsiella* sp. and *E. coli* was associated with a decrease in FQ prescribing at discharge for AUC. Patients who received FQ while inpatient were 13.4 times more likely to be continued on FQ at discharge. Overall, prescribing of FQ for AUC was inappropriate, and stewardship programs should implement FQ suppression policies to improve FQ prescribing at discharge.

Disclosures: **All Authors**: No reported disclosures

71. Impact of Prospective Audit and Feedback on Fluoroquinolone Use: A Large Academic Medical Center Experience

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Fluoroquinolones are an effective class of antimicrobials; however, their use is not without consequence. Recent warnings have resulted in the FDA recommending to reserve this class for infections lacking alternative options. Antimicrobial stewardship significantly reduces targeted antimicrobial use, improves susceptibility patterns, decreases rates of *Clostridium difficile* infection (CDI), and reduces healthcare-associated costs. Literature on fluoroquinolone stewardship by antimicrobial stewardship programs report similar outcomes in addition to reductions in rates of extended-spectrum beta-lactamase (ESBL)-producing and methicillin-resistant *S. aureus* (MRSA) infection.

Methods: This study was a retrospective cohort study of adult patients receiving at least 3 days of a fluoroquinolone for an indication of pneumonia or urinary tract infection. Retrospective orders were assessed for prescribing patterns, duration of therapy, and antibiotic choice by indication. The primary outcome was reduction of fluoroquinolone consumption as a result of a prospective audit and feedback intervention, determined with days of therapy (DOT) and DOT per 1000 patient days. Secondary outcomes included hospital length-of-stay (LOS), 3-month post-exposure incidence of CDI, ESBL and MRSA infections, percentage of interventions accepted, and QT prolongation events. Mann-Whitney U was used to determine statistical significance for DOT and LOS, unpaired student t-test was used for DOT per 1000 patient days.

Results: 333 patients were reviewed. Fluoroquinolone median days-of-therapy (DOT) was significantly reduced in the intervention phase (7 vs. 4 days, P < 0.001). Median LOS was 8 days for the cohort and did not differ between groups. After adjusting for identifiable alternative causes, no difference in QT prolongation, CDI or ESBL infection was observed. However, these results were limited by lack of diagnostic testing for QT prolongation and inability to assess for other contributing factors related to infection control.

Conclusion: Antimicrobial stewardship is an effective intervention to reduce fluoroquinolone use. An increased LOS was not observed despite patients switching to parenteral therapies. More data is needed to assess differences related to adverse events.

Disclosures: **All Authors**: No reported disclosures

72. Improving Antibiotic Prescribing in Interventional Radiology Using Clinical Decision Support Tools to Assess Penicillin Allergies

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Patients labeled with penicillin allergies often receive alternative antibiotics, leading to increased cost, higher risk of adverse events, and decreased efficacy of procedural prophylaxis. However, most of those patients can tolerate a cephalosporin. University of Washington Medical Center – Montlake (UWMC-ML) Interventional Radiology (IR) frequently administer a pre-procedure prophylactic cephalosporin. We worked with the clinicians in IR to develop tools to allow them to better assess penicillin allergies, make the most appropriate antibiotic choice, and update the patient's allergy documentation.

Methods: We identified all patients who underwent procedures in IR between 2017–2019. Chart review was done to determine the procedures performed, patient demographic information, allergies, allergy documentation, and prophylactic antibiotics received.

In May 2020 we implemented new Clinical Decision Support tools, including an online assessment app (https://tinyurl.com/IRPCNAllAssess) and handouts to guide antibiotic decision making to clinicians in IR.

Results: From 2017 to 2019, 381 patients underwent 958 procedures in IR. Of those, 379 patients underwent 496 procedures for which the recommended first line choice for antibiotic prophylaxis is a cephalosporin. Of patients who received pre-procedure prophylactic antibiotics for those procedures, 15.9% [n=11] of patients with penicillin allergies received the first line antibiotic, compared to 89.9% [n=319] of patients without a reported penicillin allergy. Since implementation, the online app has been used to evaluate 9 patients, of whom 8 had penicillin allergies. All 8 patients safely received the first line antibiotic (3 were delabeled, 4 reported a history of mild reactions, and 1 reported a history of an immediate IgE mediated response to penicillin but safely received cefazolin).

Conclusion: IR evaluates hundreds of patients who may receive prophylactic antibiotics each year. By providing tools to assess penicillin allergies, we were able to improve both their prescribing and de-label patients which will provide a much broader impact on their care than on just their current procedure. Our free tool can be accessed at the website above, and we will demonstrate in person.

Disclosures: **All Authors**: No reported disclosures

73. Improving Cephalosporin Utilization in the Emergency Department for Penicillin Allergic Patients

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Penicillin (PCN) allergies impact acute-care antibiotic prescribing practices, limit the use of first-line antibiotic agents and are associated with poor patient outcomes. Cephalosporins (CPN) are inconsistently prescribed to patients reporting PCN allergies despite reported low allergy cross-reactivity. The purpose of this study is to assess the impact of an education intervention on prescribing practices for CPN use in PCN allergic patients in the emergency department (ED).

Methods: This is a retrospective study evaluating all PCN allergic patients receiving a CPN in the ED from 07/01/2018 to 07/31/2019. The education intervention (consisting of circulating a locally developed guideline directing ED physicians to optimal CPN use given a designated PCN allergy along with lectures on suitable use of the guideline in recurring in-person sessions) occurred during 01/2019. We compared patient characteristics, CPN use, PCN allergy notation and adverse reactions between the "pre" (07/01/2018 – 12/31/2018) and "post" (02/01/2019 – 07/31/2019) groups.