early in their hospitalization, half were considered appropriate based on our guideline. Quality improvement initiatives are needed to improve implementation of the network guideline to reduce the overuse of antibiotics for management of COVID-19. Additionally, procalcitonin may be a helpful tool for hospitalized veterans with COVID-19.

Funding: None
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s24–s25
doi:10.1017/ash.2022.99

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship

Assessing the association between cefepime percentage free trough level and neurotoxicity

Aleena Zia; Armisha Desai; Molly Tieman and Haley Pritchard

Background: Cefepime has a known association with neurotoxicity due to its ability to cross the blood–brain barrier. The symptoms of neurotoxicity are highly variable. It has been postulated that cefepime neurotoxicity is associated with elevated levels of the drug. However, studies assessing for an association between serum drug level and the incidence of neurotoxicity have yet to establish a consistent threshold. We assessed serum cefepime levels and incidence of neurotoxicity to help develop a dosing strategy to minimize adverse effects. **Method:** In total, 32 inpatients admitted from January 2019 to November 2021 who received cefepime according to institutional standard dosing regimens for at least 72 hours were reviewed by infectious diseases pharmacists who obtained serum cefepime levels and performed pharmacokinetic analyses to obtain percentage free trough levels. Cefepime percentage free trough levels were defined as therapeutic if they were above the known minimum inhibitory concentration (MIC) of the treated organism and were <40 μg/mL. Patient charts were reviewed for clinical findings consistent with cefepime-induced neurotoxicity. Numerical and statistical analyses were performed to assess factors with a significant association with neurotoxicity. **Results:** Overall, 16 (47.1%) patients showed some evidence of neurotoxicity, 9 (56.3%) of whom had a likely alternate clinical cause of symptoms (Table 1). We did observe that patients with creatinine clearance <60 mL/min were more likely to have symptoms concerning for neurotoxicity. **Conclusions:** Cefepime percentage free trough levels were highly variable, and no association with neurotoxicity was observed. Patients with decreased creatinine clearance were significantly more likely to develop neurologic findings consistent with cefepime-induced neurotoxicity. Further study is needed to establish a relationship between cefepime pharmacokinetic values and incidence of neurotoxicity.

Table 1. Distribution of Neurotoxicity with Cefepime Percent Free Trough

CrCl (mL/min)		N= neurologic symptoms reported (median percent free trough, μg/mL)	N = likely alternate explanation for neurotoxicity	N = no neurotoxicity (median percent free trough, μg/mL)
>90	Subtherapeutic	0	0	0
	Therapeutic	4 (16.1)	1	7 (11.5)
	Supratherapeutic	2 (60.15)	2	3 (52.8)
60-90	Subtherapeutic	0	0	1 (1.8)
	Therapeutic	3 (2.6)	2	3 (21.4)
	Supratherapeutic	3 (67.6)	2	2 (76.9)
30-59	Subtherapeutic	0		0
	Therapeutic	1 (27.9)	1	0
	Supratherapeutic	0	0	0
≤30	Subtherapeutic	0	0	0
	Therapeutic	1 (35.4)	1	0
	Supratherapeutic	2 (78.4)	0	0

Table 2. Patient Characteristic and Cefepime Level Distribution

	Total patients (N = 32)	N = subtherapeutic (median percent free trough, μg/mL)	N = therapeutic (median percent free trough, μg/mL)	N = supratherapeutic (median percent free trough, μg/mL)
Age (years)				
≤40	10	0	6 (7.7)	4 (54.05)
41-64	10	0	8 (21.05)	2 (49.0)
≥65	12	1 (1.8)	5 (9.3)	6 (72.5)
Sex				
Male	16	0	11 (7.7)	5 (76.6)
Female	16	1 (1.8)	8 (19.8)	7 (53.6)
Weight (adjusted, kg)				
≤50	2	0	0	2 (78.4)
51-70	12	1 (1.8)	8 (22.95)	3 (53.6)
71-90	16	0	10 (9.6)	6 (54.05)
≥90	2	0	1 (38.3)	1 (67.6)
CrCl (mL/min)				
>90	16	0	11 (11.5)	5 (53.6)
60-90	12	1 (1.8)	6 (8.35)	5 (67.6)
30-59	1	0	1 (27.9)	0
≤30	3	0	1 (35.4)	2 (78.4)

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s25
doi:10.1017/ash.2022.100

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship

Implementing Leading antimicrobial stewardship practices in United States hospitals – A qualitative study

Salome Chitavi; Mike Kohut; Barbara Braun; Meghann Adams and David Hyun

Background: In May 2018, The Joint Commission, The Pew Charitable Trusts, and the CDC cosponsored a meeting of experts who identified 6 evidence-based leading practices that antimicrobial stewardship programs (ASPs) should be doing beyond having basic infrastructure for improving antibiotic prescribing. The Joint Commission Department of Research working with external experts in 2020 conducted a prevalence study to assess what proportion of Joint Commission-accredited hospitals had implemented the 6 leading practices identified (results presented at SHEA Spring 2021). In this qualitative study, we collected information about how hospitals implemented ASP leading practices to identify facilitators and barriers to implementation among diverse hospitals. **Methods:** We conducted in-depth telephone interviews with a subset of ASP leaders from hospitals that participated in the 2020 prevalence study. We used purposive sampling to select 30 hospitals from 288 hospitals based on leading practices implemented, hospital size, and system membership. An experienced qualitative researcher (M.K.) not previously affiliated with the Joint Commission interviewed all participants using a semistructured interview guide. The framework method of analysis was used to review and organize data. We used the constant comparative approach to ensure that factors were not missed. Each transcript was reviewed by at least 2 researchers who compared coded findings in group discussion sessions. Two researchers independently identified key factors and combined findings following discussion and review. We focused on super factors that are relevant to implementing multiple leading practices. **Results:** ASP leaders from 30 hospitals were interviewed. Participating hospitals were evenly distributed across hospital size (10 small, 10 medium, 10 large) and membership in a health system (16 system, 14 nonsystem). At least 14, (46.7%) interviewees had pharmacist in their title; 11 (36.7%) had pharmacist-antimicrobial stewardship; and 5 (16.6%) had other titles (eg, infection preventionist). Super factors included ASP team capacity, ID expertise, having a physician champion, relationships with clinicians and relevant departments, structure of electronic health records, adequate software, and information technology resources. Small and rural nonsystem hospitals often lacked

resources related to ID expertise, dedicated staff, and software tools, whereas hospitals that belong to a system benefit from centralized ID expertise and technical infrastructure provided. **Conclusions:** Specific factors related to personnel, relationships and IT resources have an outsized impact on implementing multiple leading antimicrobial stewardship practices in hospitals. Hospital ASPs could benefit by targeting resources toward these areas.

Funding: None
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s25–s26
doi:10.1017/ash.2022.101

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship
Systematic review of antibiotic stewardship interventions for urinary tract infection management in the ambulatory setting
Sonal Munsiff; Alexandra Sakai and Ghinwa Dumyati

Background: Urinary tract infections (UTIs) are common indications for antibiotics in ambulatory setting, and inappropriate use is prevalent. Fluoroquinolones account for 40% of antibiotics prescribed for uncomplicated UTIs, despite clinical guidance against their use as firstline agents. We conducted a systematic review to determine which antibiotic stewardship intervention(s) are effective in improving antibiotic prescribing for UTIs in the ambulatory setting. **Methods:** Following PRISMA guidelines, English-language literature from 1995 to September 21, 2021, was searched for articles about antimicrobial stewardship, UTI, and ambulatory setting from PubMed, Embase, and Central. Additional articles were identified from authors' collections and references of pertinent articles. Studies were included if the authors implemented intervention targeting adults 18 years and older in outpatient setting (excluding emergency departments). Interventions were categorized into Guideline Development and Dissemination (GDD), Audit and Feedback, Clinical Decision Support System (CDSS), and Multimodal Interventions. **Results:** The literature search identified 1,899 papers; 14 papers were included in this review; and 4 additional papers were identified from other sources. The main interventions were GDD in 6 studies, audit and feedback in 3 studies, CDSS in 4 studies, and multimodal interventions in 5 stidues. These studies had heterogeneity of the practice settings and interventions. Moreover, 11 studies targeted primary care, 2 studies targeted urgent care, 1 study targeted both primary and urgent care, 2 studies were conducted in spinal cord injury clinics, and 2 studies were conducted in hospital-wide outpatient sites. Outcomes included (1) statistically significant increase in guideline-concordant antibiotic prescribing in 12 studies (range, 4.6%–246%); (2) statistically significant decrease in fluoroquinolone prescriptions (range, 9.1%–86.3%) in 7 of 9 studies focusing on fluoroquinolones; (3) significant decreases in drug resistance in urine pathogens in 2 studies that evaluated this. Provider education, in conjunction with passive CDSS tools, such as integrating order sets for UTI prescriptions with prefilled instructions into electronic medical records appeared most beneficial. Several studies have investigated negative impact and have found no increase in retreatment rates or worse outcomes. **Conclusions:** Our systematic literature review identified a limited number of studies with a variety of interventions that improved antibiotic use for UTIs in the ambulatory care setting. Provider education, in conjunction with CDSS tools, can be less time-consuming than audit and feedback and can target a large number of providers and practices. Future studies need to address sustainability over longer periods and should target specialty clinic populations because they have high burden of patients with multidrug-resistant UTI organisms.

Funding: None
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s26
doi:10.1017/ash.2022.102

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship
Antibiotic use and impact on illness course in children with influenza-like-illness in the emergency department
Nicole Poole; Sean O'Leary; Suchitra Rao; Krithika Suresh and Angela Moss

Background: Child absenteeism from childcare or school leads to economic loss from parental work absenteeism, overutilization of acute-care resources, and excess medicalization of children with minor illnesses. We sought to determine the difference in days missed from childcare or school and days of illness for children with influenza-like illness (ILI) in the emergency department (ED) who are or are not prescribed an antibiotic. **Methods:** We conducted a secondary data analysis of a prospective randomized control trial evaluating the impact of rapid molecular testing on provider decision making. The study included children aged 2 months–12 years attending childcare or school seen in the ED from December 2018 through December 2019 with ILI (CDC definition) with parental survey completion 10 days after their ED visit. The primary exposure was receipt of antibiotics over the course of illness, which was assessed by chart review and parent survey. The primary outcome was number of days missed from class. The secondary outcome was number of days of illness after initial ED visit. Wilcoxon tests were used to compare missed class days or illness days by antibiotic receipt. Multivariable negative binomial regression was used to analyze outcomes, controlling for clinically important patient characteristics. **Results:** Of 251 children included in this study, the median age was 4.2 years (IQR, 1.6–7.0); 52% were male, 40% were White, 54% were Hispanic, and 75% had government insurance. Antibiotics were prescribed in 26% of ILI encounters. There was no statistically significant association between antibiotic receipt and number missed class days (2.0 days [IQR, 1.0–4.0] vs 3.0 days [IQR, 1.0–5.0]; P = .08) or illness days (4.0 days [IQR, 3.0–7.0] vs 5.0 days [IQR, 3.0–7.0]; P = .13) after the initial ED visit. After adjusting for covariates, there was no significant difference in missed class days or illness days for patients prescribed antibiotics in relation to days sick before ED visit. The rates of missed class days and illness days were 87% and 30% greater, respectively, in patients with additional medical visits during the course of illness. **Conclusions:** Days sick prior to ED presentation and receipt of an antibiotic for ILI had no influence on child absenteeism or illness duration. However, children missed more class and received more antibiotics if they had multiple medical visits during an illness. Further study is needed on sociobehavioral factors leading to medicalization of children with minor illnesses and its impact on the unnecessary use of antibiotics.

Funding: None
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s26
doi:10.1017/ash.2022.103

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: *C. difficile*
In veteran outpatients, antibiotics remain significant risk factor for community-acquired *Clostridiodes difficile* infection
Ukwen Akpoji; Brigid Wilson; Tayoot Chengsupanimit; Sunah Song; Taissa Bej; Robin Jump and Federico Perez

Background: An estimated 30% of antibiotic prescriptions in outpatient settings may be inappropriate. Antibiotic exposure increases an individual's risk of *Clostridioides difficile* infection (CDI). To assess the prevalence of community-acquired CDI (CA-CDI) among patients without recent hospitalization and to examine the influence of outpatient antibiotic exposure on the risk of acquiring CA-CDI in this population, we examined a 2-year cohort of patients seen in primary care clinics at VA community-based outpatient clinics (CBOCs) associated with a large VA medical