Results. Of 408 patient of community-onset KP BSI, 70 (17%) were ESBL-KP BSI patients. ESBL-KP isolates most frequently carried CTX-M-1 group ESBL (74%, n = 52), followed by CTX-M-9 group ESBLs (16%, n = 11). Most prevalent sequence type (ST) among ESBL-KP isolates was ST48 (14%, n = 10). Among non-ESBL-KP isolates, ST23 was most prevalent (21%, n = 70). Analyzing with multivariate analysis, recent admission to long-term care hospital within 3 months (OR, 5.2; 95% CI, 2.1–15.6; P = 0.001), previous usage of trimethoprim-sulfamethoxazole (OR, 11.5; 95% CI, 2.7–48.6; P = 0.001), expanded-spectrum cephalosporin (OR, 2.2; 95% CI, 1.2–3.9; P = 0.01), and previous use of urinary catheter (OR, 2.3; 95% CI, 1.1–4.5; P = 0.02) were identified as independent risk factors for community-onset ESBL-KP BSI.

Conclusion. Recent admission to long-term care hospital, use of urinary catheter, recent usage of antibiotics were identified as risk factors for community-onset ESBL-KP BSI. Strict antibiotic stewardship and infection control measures in long-term care hospital are needed.

Results. Of 408 patient of community-onset KP BSI, 70 (17%) were ESBL-KP BSI patients. ESBL-KP isolates most frequently carried CTX-M-1 group ESBL (74%, n = 52), followed by CTX-M-9 group ESBLs (16%, n = 11). Most prevalent sequence type (ST) among ESBL-KP isolates was ST48 (14%, n = 10). Among non-ESBL-KP isolates, ST23 was most prevalent (21%, n = 70). Analyzing with multivariate analysis, recent admission to long-term care hospital within 3 months (OR, 5.2; 95% CI, 2.1–15.6; P = 0.001), previous usage of trimethoprim-sulfamethoxazole (OR, 11.5; 95% CI, 2.7–48.6; P = 0.001), expanded-spectrum cephalosporin (OR, 2.2; 95% CI, 1.2–3.9; P = 0.01), and previous use of urinary catheter (OR, 2.3; 95% CI, 1.1–4.5; P = 0.02) were identified as independent risk factors for community-onset ESBL-KP BSI.

Conclusion. Recent admission to long-term care hospital, use of urinary catheter, recent usage of antibiotics were identified as risk factors for community-onset ESBL-KP BSI. Strict antibiotic stewardship and infection control measures in long-term care hospital are needed.

Disclosures. All authors: No reported disclosures.

477. Characterization of Extended-Spectrum B-Lactamase (ESBL) Producing Gram-Negative (GN) Urinary Tract Infections (UTIs) in Pediatric Patients

Leslie Stach, PharmD; Regina Orbach, PharmD and Kanokporn Mongkolratananothai, MD; Children Hospital Los Angeles, Los Angeles, California

Session: 52. HAI: MDRO – GNR Epidemiology, ESBL Producers
Thursday, October 3, 2019: 12:15 PM

Background. There has been an increase in antimicrobial resistance among GN pathogens, not only in adults, but also pediatrics. UTIs are common in pediatrics; however, reports of pediatric UTI with ESBL producing GN are limited.

Methods. All urine cultures positive for ESBL producing GN from 5/1/18 to December 31/18 were retrospectively reviewed. Proven infection (PI) defined as ≥50,000 colony-forming units (CFU)/mL of bacteria plus pyuria or positive leukocyte esterase for catheterized or clean catch specimens. Relapsed infection defined as same pathogen cultured within 30 days of infection. Abnormal urinary tract systems or functions (AUTS) include neurogenic bladder, structural anomalies, or intermittent catheterization.

Results. A total of 107 urine cultures for ESBL producing GN, from 85 patients, were included. Majority of specimens (78/107 (73%)) were obtained from the ED or outpatient clinics. 43% of specimens were from patients with AUTS. E. coli was the majority (95%) of ESBL isolates. 57% of ESBL producing GNs were susceptible to amoxicillin/clavulanate (AC) or trimethoprim/sulfamethoxazole (TMP/SMX). 88% were nitrofurantoin susceptible. Only 1 isolate was meropenem resistant. Antibiotics (ABX) were prescribed for UTI in 67/107 episodes. However, only 52 episodes were PI. Of these, 38 were empirically treated with oral ABX and 29 with intravenous ABX. The most commonly prescribed empiric ABX were oral cephalexin (25/67, 37%). Ineffective empiric ABX for UTI was very common, 83% (43/52). Of these, 5/43 never received effective therapy and none had relapse. Most common duration of ABX was 10 days (range 5–17 days.) 43% (23/52) of PI were treated with oral AC or TMP/SMX. 15% (8/52) of PI were treated with nitrofurantoin. 12% of PI were treated with a once-daily aminoglycoside. Only 6% of PI were treated with a carbapenem.

Conclusion. Many ESBL UTI isolates remain susceptible to oral ABX. Although small number of patients treated with ineffective ABX did not return with relapsed infection. Non-carbapenem ABX are a reasonable option to minimize selective pressure or unnecessary use. Empirc narrow-spectrum antibiotic therapy may still be appropriate.

Disclosures. All authors: No reported disclosures.

478. Outcomes of Extended-Spectrum β-Lactamase Producing Escherichia coli Bloodstream Infection in Neutropenic Patients with Hematological Malignancies

Sadal Aslam, MD, MS1; James Denham, MS2 and John Greene, MD2, University of South Florida, Tampa, Florida; Moffitt Cancer Center, Tampa, Florida

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Background. Infections with extended-spectrum β-lactamase (ESBL) producing Enterobacteriaceae is an emerging problem leading to poor clinical outcomes and increased mortality. The purpose of this study was to determine the prevalence, risk factors and outcomes of ESBL-producing E. coli (EC) in bloodstream infection (BSI) of neutropenic patients with hematological malignancies and compare the difference with Non-ESBL producing EC.

Methods. Through an IRB approved protocol, a retrospective cohort study was conducted at the H. Lee Moffitt Cancer Center from January, 2007 till October, 2017. Of the 310 records, who had +ive blood cultures for E. Coli, a total of 63 neutropenic patients with hematological malignancies were identified based on the bloodstream infections with ESBL-EC and Non ESBL-EC. Data included demographics, underlying malignancy, type of bone marrow transplant, duration of neutropenia, antibiotics use pre and post culture, length of hospital stay, severity of infection, ventilator use, and mortality data.

Results. A total of 310 cases with hematological malignancy and neutropenia were reviewed, 63 were identified as +ive blood culture for E. Coli. Out of the 63 cases, 17 were ESBL-EC +ive and 46 were non-ESBL-EC. The prevalence of ESBL-EC was highest in the year 2015 (29.4%) and decreased in the subsequent years (Figure 1). The mean ages of the two groups were 53.59±12.4 and 60.82±11.1, respectively. The mean ages of the two groups were 53.59±12.4 and 60.82±11.1, respectively. The average length of stay for the ESBL-EC group was 26.59±11.2 days, longer than the non-ESBL-EC group 21.96±11.2. Days of neutropenia in non-ESBL vs. ESBL-EC were 9 days ± 8.3, and 19 days ± 22.0, respectively, P < 0.01. No differences were observed in the 30–60 day mortality and other outcomes listed in Table 1.

Conclusion. The prevalence of ESBL-EC was observed to be higher in patients who were neutropenic for longer duration, were older and resulted in longer hospital stay. Early identification and empirical therapy in neutropenic patients suspected to have ESBL-EC infection is crucial. Also, the infection with ESBL-EC was fragil. After higher rates, perhaps infection control, lab reporting changes, antibiotic stewardship and transmission-based precautions might have played a role.