Session: 37. Bacteremia, CLABSI, and Endovascular Infections
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Background. Candida is the most common cause of invasive fungal infection in healthcare settings and is associated with significant increases in healthcare resource utilization and attributable mortality.

Methods. This study was conducted in a pediatric tertiary care hospital from Turkey. We conducted a retrospective analysis in children ≤18 years with blood culture-proven candidemia identified between December 2013 and November 2017. Sociodemographic variables, underlying condition, mortality, additional risk factors, origin of specimens were all recorded.

Results. A total of 236 episodes of candidaemia were identified over the study period. The median age of the patients was 600 days (4-6,482). 106 specimens (44.9%) were cultured from patients under 1 year of age and 15 of 106 specimens were cultured from neonates. The most frequently isolated Candida spp. were C. albicans (42.1%), followed by C. parapsilosis (30.5%), C. glabrata (7.6%), C. tropicalis (6.4%), C. krusei (2.5%), C. lusitaniae (2.1%), C. kefyr (0.8%), and C. pelliculosa (0.4%). In 11 of the 236 episodes (4.5%), two Candida spp were cultured at the same time. The most common co-infection was C. albicans and C. parapsilosis. 112 of the 236 episodes (47.5%) was due to central venous catheter-related bloodstream infection. 47.5% of these patients were receiving total parenteral nutrition at the time of candidemia. Concomitant coagulase negative staphylococcus bacteremia was present in 50 of 236 candidemia episodes (21.2%). Of 236 isolates, 74 (31.4%) was cultured from peripheral blood culture only, 95 (40.3%) from central venous catheter only, 67 (28.4%) from both peripheral and central catheter blood culture. Trombocytopenia was noted in 117 episodes (49.6%) and neutropenia in 45 episodes (19.1%). Of the 112 central venous catheter-related candidemia, 35 (31.3%) resulted in death within 30 days from the onset of candidaemia (Figure 1). In 49 (45%) episodes of central venous catheter-related candidemia, catheter was not removed and 40% of these episodes resulted as death. Catheter removal, trombocytopenia, total parenteral nutrition were found to be associated with increased mortality in children under 1 year of age (P < 0.001).

Conclusion. Clinicians must be aware of candidemia in children due to high risk of mortality.

Disclosures. All authors: No reported disclosures.

184. Channeling Alexander Fleming: Efficacy of Penicillin (PCN) to Treat Staphylococcus aureus (SA) Bacteremia
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Background. Staphylococcus aureus bacteremia (SAB) is associated with high morbidity and mortality rates. Data on epidemiology and outcomes of SAB in children is not as well described as in adults. The primary objective of this study was to describe clinical and microbiological cure rates of SAB in hospitalized children. Secondary objectives included time to clinical and microbiological cure, mortality, proportions of methicillin-sensitive and resistant SA (MSSA, MRSA) bacteremia, and antibiotic usage pattern.

Methods. This was an electronic chart abstraction conducted at a community hospital in the South Bronx, NY, of all pediatric cases of SAB (<21 years of age) from January 1, 2010 to March 30, 2017. Demographic, clinical and microbiological data along with risk factors for bacteremia were collected. Clinical cure was defined as resolution of acute symptoms and signs of SAB and microbiological cure was defined as documentation of first negative blood culture after initiation of treatment. Standard definitions were used for hospital-acquired (HA) and community-acquired (CA) isolates of SA.

Results. Of 41 patients, neonates comprised 12%, 1- to 23-month-old infants 56% and 2- to 17-year-olds 31%. Overall, 76% of patients had bacteremia due to MSSA, and 24% MRSA. MRSA was isolated in 37% of HA SAB compared with 14% of CA SAB (P = 0.15). The two highest risk factors identified for SAB were peripherally inserted central catheters (PICC, 29%) and skin and soft-tissue infections (22%). SAB in the neonatal period was associated with PICC lines when compared with children outside the neonatal period (80% vs. 22%, P = 0.02). Using available data, clinical and microbiological cure rates were similar at 73%. The median time to clinical cure was 5 days (interquartile range [IQR] 2–10) and to microbiological cure, 2 days (IQR 1–4). A 2-month-old infant died (mortality 2.4%). Initial antibiotic selection was vancomycin (39%), clindamycin (39%), and nafcillin (7%). The proportion of SA resistant to clindamycin was 22%.

Conclusion. Pediatric SAB was uncommon in this community hospital experience over 7 years and is associated with PICC lines in neonates. MSSA was more prevalent than MRSA. Initial antibiotic selection had anti-staphylococcal coverage in 85% of cases, while clindamycin resistance occurred in 22% of SA isolates.

Disclosures. All authors: No reported disclosures.

186. Risk Factors for Extended Spectrum β-Lactamase Bacteremia and External Application of a Clinical Prediction Tool
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Background. Extended spectrum β-lactamase (ESBL) bacteria are resistant to many antibiotics, which increases the risk of inadequate early antibiotic therapy.

| Antibiotic          | Success | Infection-related Mortality | Drug Reaction |
|---------------------|---------|----------------------------|--------------|
| Penicillin – our population | 79%     | 11%                        | 11%          |
| Historical Controls |         |                            |              |
| Cefazolin           | 71-93%  | 10-20%                     | 8%-12%       |
| Nafcillin           | 74-92%  | 15-25%                     | 17-29%       |
| Ceftriazone         | 45-77%  | 9-23%                      | 7-15%        |

Table 1: Comparison of PCN treatment of PSSA to Historical SA Controls
A previous single-center study had created a prediction tool to assist clinicians in identifying patients at risk for ESBL bloodstream infections. The purpose of our research project was to assess validity of this tool while also identifying risk factors for ESBL bacteremia within our own institution, which would allow for assessment of alternative prediction tools.

Methods. We performed a retrospective chart review of adult patients admitted to an urban university hospital who were found to have bacteremia with Escherichia coli, Klebsiella pneumoniae, and/or Klebsiella oxytoca between October 2016 and April 2018. Demographics and comorbidities were assessed, along with other potential risk factors including exposure to antibiotics and hospitalizations within the past 6 months.

Results. A total of 214 instances of bacteremia were identified and 14% were due to ESBL organisms. Risk factors for ESBL bacteremia in our cohort included history of positive culture for ESBL (RR = 5.9) or MRSA (RR = 3.5) and antibiotic usage in the past 6 months (RR = 2.3). Patients with ESBL bacteremia were hospitalized longer (mean 16 days vs. 6 days for non-ESBL), received longer durations of antibiotic therapy (11.7 days vs. 5.3 days), and were exposed to greater numbers of different antibiotics (1.9 vs. 0.7) in the previous 6 months. Multivariate logistic regression showed that history of prior ESBL infection (OR 14.7, CI 1.8–120) and increasing number of different antibiotic classes administered in the prior 6 months (OR 4.3, CI 1.7–11.2) were significant risk factors for ESBL bacteremia. The previously created prediction tool did not sufficiently differentiate higher and lower risk for ESBL bacteremia in our cohort.

Although risk prediction modeling might better assess risk across institutions, we could expect these score systems to contribute to reducing unnecessary FUBC and should be investigated further.

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