Background. Recurrent central line-associated bloodstream infections (CLABSIs) in children present a unique challenge to infection prevention efforts but guidelines for management are lacking.

Methods. We reviewed CLABSIs data at Texas Children's Hospital (TCH) from fiscal years (FY) 2017-2019. A chart review to characterize clinical features, risk factors, and outcomes of patients with recurrent CLABSIs in FY2019 was performed. Descriptive statistics and Fisher's exact test were used.

Results. Recurrent CLABSIs increased from FY 2017-2019 (20% (26/126) to 33% (44/132) in patients). In FY2019, 15 patients accounted for 46 CLABSIs (Figure 1). Underlying conditions included aplastic anemia (4), hemophagocytic lymphohistiocytosis (3), malignancy (4), genetic disease (2), congenital heart disease (1) and biliary atresia (1). Two-thirds of the CLABSIs occurred in the setting of severe neutropenia (ANC < 100 cells/mm3) though only 16 (36%) were classified as mucosal barrier injury. The median time between line insertion and date of infection was 41 days (range 1-105). Line type included central venous catheters (25, 57%), peripherally inserted central catheters (17, 39%) and implantable ports (2, 5%). Most lines (80%) had dual lumens. The most common organisms included: Gram-negative bacilli (15), coagulase negative staphylococci (14), viridans group streptococci (6) Candida spp. (5), Enterococcus faecalis (3) and Staphylococcus aureus (3). Four CLABSIs were polymicrobial. Patients with >2 CLABSIs were more likely to have subsequent infections with the same organism as compared to patients with only 2 CLABSIs (P=0.01). Lines were removed promptly (19, 43%), had delayed removal (removal >72 hours from infection date) (10, 23%) or remained in place (15, 34%). Lines were removed for all episodes of fungemia (5/44) and for most Gram-negative infections (10/12). Six of 7 Escherichia coli CLABSIs were breakthrough fluoroquinolone-resistant infections in patients on levofloxacin.

Single Episode and Recurrent CLABSIs at Texas Children’s Hospital for Fiscal Year 2019

87 (67)
44 (33)
16 (12)
9 (7)
12 (9)
7 (5)
No of CLABSIs

Conclusion. Recurrent CLABSI accounted for a third of CLABSIs in FY2019. Line management was not a key contributor to recurrent CLABSI. Breakthrough CLABSI and levofloxacin prophylaxis need further investigation. For patients with CLABSIs due to Staphylococcal decolonization may be considered.

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1376. Oral Vancomycin as Secondary Prophylaxis Against Clostridioides difficile Infection in Pediatric Patients

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Results. A total of 153 patients were screened for inclusion, of which 32 and 47 patients were assigned to the OVP and no OVP group, respectively. Median age was 8.6 years and the most common comorbidities were malignancy (47%) and immunosuppression (46%). Median time since last CDI to study inclusion was 64.5 days in the OVP group and 90 days in the no OVP group, P=0.329. Compared to the no OVP group, OVP patients had longer hospital stays (5 vs 14 days, P=0.001) and more concomitant antibiotic exposure (8 vs 12.5 days, P=0.001). Median duration of OVP was 12 days. CDI recurrence occurred in 12 patients and was significantly lower in the OVP vs no OVP group (3.1% vs 23.4%, odds ratio, 0.106, 95% confidence interval, 0.013-0.860) (P=0.022). VRE was not isolated in any patients. After adjustment in a multivariate analysis, only secondary OVP remained as a protective factor against recurrence (odds ratio, 0.088; 95% confidence interval, 0.009-0.748; P=0.027).

Conclusion. Secondary OVP effectively reduces the risk of recurrent CDI in pediatric patients with a history of CDI while receiving systemic antibiotics. Future prospective studies should validate these findings.

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