Presentation Type:
Poster Presentation

Resource Constraint Hindering Infection Prevention and Control: Evidence From Tertiary-Care Public Hospitals in Bangladesh

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Background: Despite gradual economic growth in Bangladesh, healthcare facilities are still resource limited and do not measure up to the standard to practice for infection prevention and control (IPC) in reducing the risk of hospital-acquired infections. We assessed the existing resources and facilities in tertiary-care public hospitals to guide a context-specific low-resource IPC intervention for routine use in Hospital wards. **Methods:** We conducted the study in 3 tertiary-care hospitals from November 2017 to January 2018. The study team collected data on existing facilities and resources associated with IPC strategy from hospital records, semi-structured interviews with different level healthcare staff (n = 176) and spot checks (n = 30). **Results:** The mean bed occupancy rates for study hospitals were 165%, 200%, and 150%, respectively, on admission days. Among study wards, medicine ward (230%) had the highest bed occupancy rate. Different types of patients were placed together in the wards, and there were no isolation areas for highly infectious patients. Moreover, 22%–58% posts of physicians, 15%–20% of nurses and 38%–42% of support staff were vacant against the authorized posts in these hospitals. There were no usable handwashing facilities for support staff, patients, and family caregivers; however, all the allocated handwashing facilities for physicians and nurses were functional. On average, 50% fewer surgical gloves were provided than were actually required. Although supplies of masks were available in the surgery theater, no supplies in general wards were recorded. Disposable nasal cannula for oxygen and nebulizer masks was unavailable; hence, providers had to reuse this equipment for multiple patients. Most of the autoclave machines (20 of 30) were nonfunctional; therefore, one-third of the surgical instruments could not be sterilized by autoclaving. None of the hospital wards followed the 3 steps of surface cleaning, and no segregation of hazardous wastes was observed. All kind of wastes were dumped in the selected open area within the hospital premises. Healthcare workers (n = 110) directly involved in patient care reported that hand hygiene is usually not possible between patient visits. High turnover of patients and shortage of healthcare staff were reported as major barriers to IPC practices, specifically hand hygiene and environmental cleaning. There was no active committee nor specific training program on IPC for healthcare staff. **Conclusions:** Existing resources and facilities of these hospitals did not support a standard IPC strategy. Coordination from policy level to implementation with proper allocation of resources is required to ensure a practical IPC strategy.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.1003

Presentation Type:
Poster Presentation

Review of *Candida dubliniensis* at a Pediatric Hospital

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Background: *Candida dubliniensis* is a worldwide fungal opportunistic pathogen, closely related to *C. albicans*. Originally identified in patients infected with HIV in Dublin, Ireland, *C. dubliniensis* has emerged as a pathogen in other immunocompromised individuals, including patients receiving chemotherapy and transplant recipients. Pediatric epidemiological data for this organism are limited. **Methods:** We report a descriptive review of *C. dubliniensis* isolates recovered between January 2018 and June 2019 at a large tertiary-care pediatric institution in Columbus, Ohio. **Results:** *C. dubliniensis* was identified in 48 patients in the 18-month review period. In total, 67 positive cultures were collected in these patients with the following distribution of sources: 44 sputum (66%), 11 bronchoalveloar lavage fluid (16%), 4 blood (6%), 3 wounds (4%), 2 esophageal (3%), 2 peritoneal fluid (3%), and 1 vaginal (1%). Of the 48 patients in whom *C. dubliniensis* was identified, 35 (73%) were patients with cystic fibrosis. Also, 8 patients (17%) were considered to have clinical infections and received antifungal therapy: 3 patients with pneumonia, 2 patients with esophagitis, 1 patient with peritonitis, 1 patient with

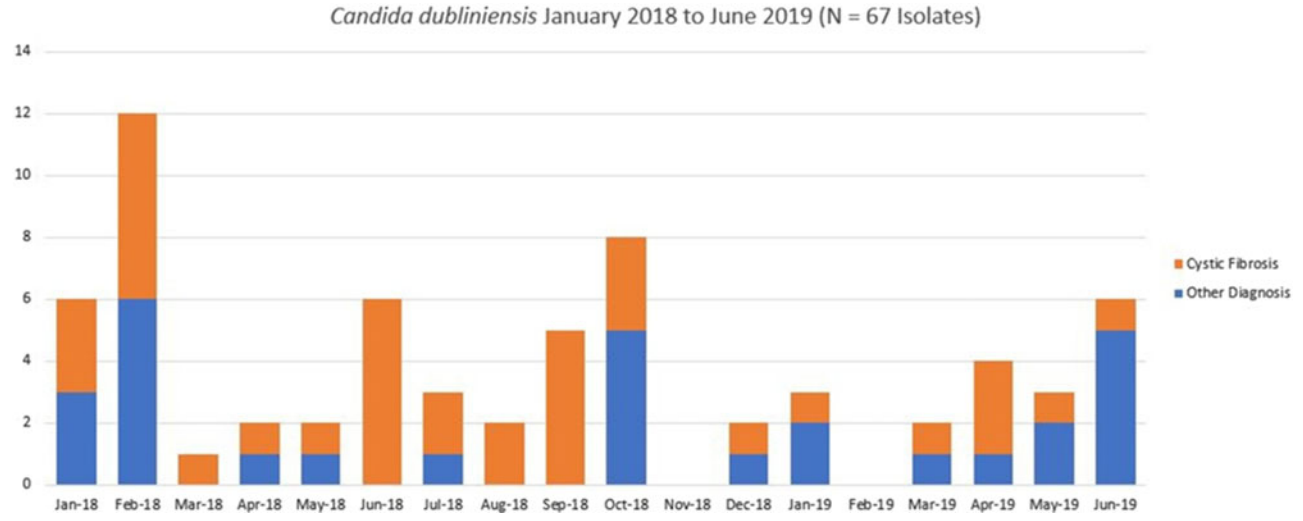

Fig. 1.

https://doi.org/10.1017/ice.2020.1004 Published online by Cambridge University Press

catheter-related bloodstream infection, and 1 patient with disseminated candidiasis. The remaining 40 patients (83%) were considered colonized. **Conclusions:** We report a descriptive series over 18 months of clinical isolates with *C. dubliniensis* recovery at a pediatric institution. Most isolates were identified as colonizing strains in patients with cystic fibrosis. *C. dubliniensis* was a rare cause of invasive disease in our institution, with only 8 cases identified.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.1004

Presentation Type:
Poster Presentation

Risk Factors and Mortality in Pediatric Patients with *Stenotrophomonas maltophilia* Bacteremia

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Background: *Stenotrophomonas maltophilia (S. maltophilia)* is an opportunistic and nosocomial pathogen that can cause an invasive and fatal infection, particularly in hospitalized and immunocompromised patients. However, little is known about the impact of *S. maltophilia* bacteremia in pediatric patients. Therefore, we aimed to identify risk factors for mortality, antibiotic susceptibility of *S. maltophilia*, and mortality rates in pediatric patients with *S. maltophilia* bacteremia. **Methods:** We conducted a retrospective cohort study by identifying all *S. maltophilia*–positive blood cultures in the microbiology laboratory database between January 2007 and December 2018 from hospitalized pediatric patients (age, 1–14 years) at King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia. After identifying patients with *S. maltophilia* bacteremia, medical charts were reviewed for demographics, clinical data, and outcome within 7 days of bacteremia diagnosis. Risk factors associated with mortality in *S. maltophilia* bacteremia patients were determined using univariate and multivariate analyses. **Results:** Overall, 68% of pediatric patients with *S. maltophilia* bacteremia were identified. The most common underlying primary diagnoses were malignancy (29.4%), congenital heart diseases (16.2%), anemia (14.7%), and primary immunodeficiency (11.8%). All infections were nosocomial infections, and (88.2%) bacteremia cases were central-line–associated bloodstream infections. The risk factors associated with mortality as determined by univariate analysis were ICU admission ($P < .001$), intubation ($P = .001$), neutropenia ($P = .008$), prior use of carbapenem ($P = .002$), thrombocytopenia ($P = .006$), and

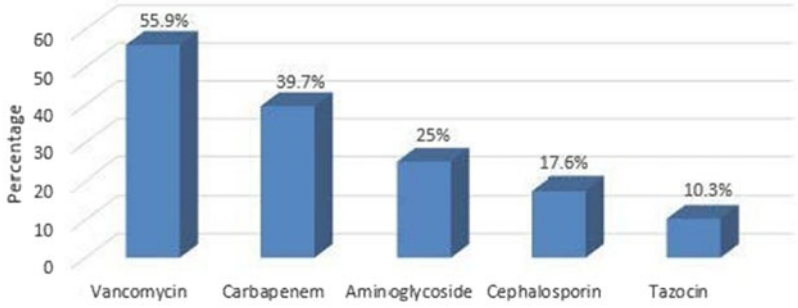

Figure 1: Antibiotics used 14 days prior to *S. maltophilia* bacteremia.

Fig. 1.

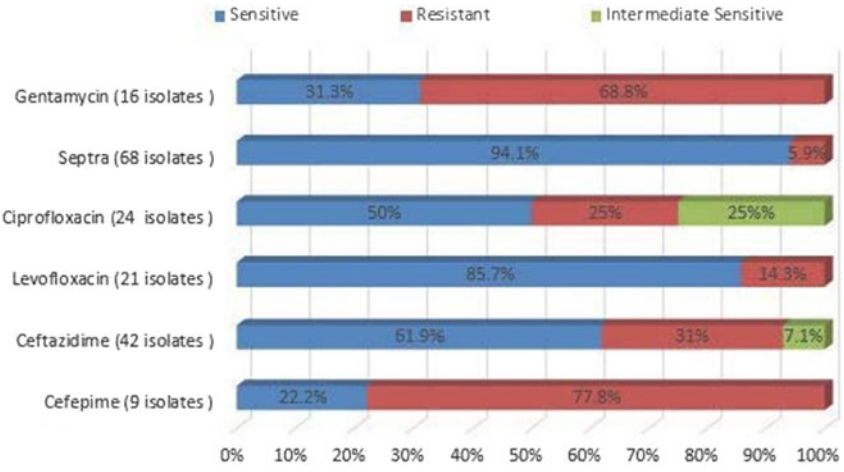

Figure 2: Antibiotic susceptibility of *S. maltophilia* blood isolates

Fig. 2.

https://doi.org/10.1017/ice.2020.1004 Published online by Cambridge University Press