475. Surveillance of Hemodialysis Events: A Prospective Multicenter Study, First Report from Turkey

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Background. With the increasing numbers of hemodialysis (HD) patients, HD-related infections are becoming common. However, there is neither a surveillance system nor a study to reveal the HD-related infection rates in Turkey. We aimed to investigate the infection rate among HD outpatients and current status in our country.

Methods. A multicenter prospective surveillance system is performed to investigate the infection incidence among HD patients. We implemented a central database for data collection with a web interface compatible with mobile devices. CDC National Healthcare Safety Network (NHSN) dialysis event (DE) protocol is adopted for definitions and reporting. Dialysis event rates are calculated for each vascular access type and medium and large (>300 beds) hospitals, specifically candidemia and Gram-negative bacteremia (table). S. Aureus and Candida species represented 57% of all HOBSIs. Facility and system events were trended monthly over time based on individual and all organisms combined and provided an objective assessment of invasive infections over time (figure).

Conclusion. Automated reporting of HOBSI for common organisms associated with invasive disease provides an objective method to evaluate infection prevention in medium and large hospitals and potentially benchmarking based on hospital characteristics in the future.

Table 1: Isolated microorganisms

| Microorganism                | Fistula | Catheter | Total | n (%) |
|------------------------------|---------|----------|-------|-------|
| Staphylococcus coagulase-negative | 3       | 7        | 10    | 27    |
| Staphylococcus aureus        | 2       | 5        | 7     | 18.9  |
| Escherichia coli             | 1       | 5        | 6     | 16.2  |
| Klebsiella pneumonia         | 1       | 3        | 4     | 10.8  |
| Enterobacter spp.            | 1       | 2        | 3     | 8.1   |
| Pseudomonas aeruginosa       | 0       | 3        | 3     | 8.1   |
| Enterococcus faecalis        | 0       | 2        | 2     | 5.4   |
| Candida spp.                 | 0       | 1        | 1     | 2.7   |
| Enterococcus faecium         | 1       | 0        | 1     | 2.7   |
| Total                        | 9       | 28       | 37    | 100   |

Disclosures. All authors: No reported disclosures.

476. Introducing Hospital Onset Bloodstream Infection (HOBSI) as a Tool to Evaluate Infection Prevention: Assessment of 51 US Hospitals

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Session: 57. HAI: Surveillance + Reporting
Thursday, October 5, 2017: 12:30 PM

Background. Currently, publicly reported infections include a few types of events, and do not provide a comprehensive picture on overall infection prevention practices. Hospital-onset bloodstream infection (HOBSI), regardless of source, reflects invasive infection from an at risk patient population in inpatient healthcare settings.

Methods. Using one infection prevention surveillance system, we identified all invasive blood cultures for 5 organisms commonly associated with healthcare infections (Staphylococcus aureus, Escherichia coli, Klebsiella pneumoniae, Pseudomonas aeruginosa, and Candida species) over the 12 months of 2016, across 51 acute care hospitals. Each HOBSI was counted once per patient and was classified based on the NHSN definition. Validation was performed comparing individual site laboratory microbiology data to the surveillance system report.

Results. A total of 1,053 HOBSI events occurred over 2,797,568 patient-days at an aggregate rate of 3.76 per 10,000 patient-days. Small (<100 beds) hospitals had very low event rates. There were significant differences between medium (100–300 beds) size and large (>300 beds) hospitals, specifically candidemia and Gram-negative bacteremia (table). S. Aureus and Candida species represented 57% of all HOBSIs. Facility and system events were trended monthly over time based on individual and all organisms combined and provided an objective assessment of invasive infections over time (figure).

Conclusion. Automated reporting of HOBSI for common organisms associated with invasive disease provides an objective method to evaluate infection prevention in medium and large hospitals and potentially benchmarking based on hospital characteristics in the future.

Table: HOBSI Event Rates per 10,000 Patient-Days Over 12 Months Period for 51 hospitals

| Microorganism          | Mean Rate per 10,000 Patient-Days |
|------------------------|-----------------------------------|
| All HOBSI              | 2.98                              |
| Staphylococcus aureus  | 0.49                              |
| Escherichia coli       | 0.13                              |
| Klebsiella pneumonia   | 0.29                              |
| Pseudomonas aeruginosa | 0.20                              |
| Candida species        | 0.08                              |

Figure: HOBSI Aggregate Rate Monthly Trend (Per Organism)
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477. Comparison of Clinical Characteristics and Outcomes Between Community-Acquired and Healthcare-Associated Bacteremia Cases due to Bacteroides Species

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Session: 57. HAI: Surveillance + Reporting

Thursday, October 5, 2017: 12:30 PM

Background. Differences in clinical characteristics and outcomes between community-acquired (CA) and healthcare-associated (HCA) Bacteroides bacteremia cases are not well known.

Methods. We evaluated all positive blood cultures between March 2012 and December 2016 in a Japanese 781-bed acute hospital. Identification and susceptibility was performed based on CLSI criteria, and MALDI-TOF has been used since January 2015 in addition to conventional methods.

Results. Of 3,611 bacteremia cases, 266 (7.4%) were due to obligately anaerobic bacteria, such as Clostridium species (n = 97 [36.5%]), Fusobacterium species (15 [7.5%]), and Bacteroides species (65 [24.4%]), of which 31 (47.7%) were HCA and 34 (52.3%) were CA. In 22 (33.8%) cases, >2 blood cultures were positive. B. fragilis was most frequently isolated (n = 25 [38.5%]), then B. thetaiotaomicron (n = 9 [13.8%]), B. vulgatus (n = 5 [7.7%]), B. uniformis (n = 3 [4.6%]), and B. distasonis (n = 2 [3.1%]). B. aerofaciens (n = 2 [3.1%]), B. capillosus (n = 1 [1.5%]), and B. ovatus (n = 1 [1.5%]). After introducing MALDI-TOF, the number of unidentified Bacteroides species fell from 12 (18.5%) to 5 (7.7%). Sensitivity to ampicillin/subbac
tam, cefmetazole, and clindamycin was 85.2%, 92.6%, and 59.3%, respectively. Most species were less susceptible to vancomycin, carbapenems, and amikacin.

Conclusion. There was significantly higher 7- and 30-day mortality in HCA than in CA cases (P = 0.03).

Disclosures. All authors: No reported disclosures.

478. Hospital Onset Staphylococcus aureus Bacteremia is a Better Measure than MRSA Bacteremia in Assessing Infection Prevention: Evaluation of 51 US Hospitals

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Thursday, October 5, 2017: 12:30 PM

Background. Central-line associated bloodstream infections (CLABSI) are a subset of hospital-onset bacteremia and fungemia (HOB), a potential indicator of healthcare-associated infections (HAI) that can be objectively and directly obtained from electronic health records. We undertook a pilot study to elucidate the causes and determine the preventability of HOB.

Methods. HOB was defined as growth of a microorganism from a blood culture obtained ≥3 calendar days after admission in a hospitalized patient. A random sampling of HOB events across 2 academic hospitals and a pediatric intensive care unit in a third academic hospital were identified between October 1, 2014 and September 30, 2015. Medical records were reviewed to identify potential risk factors and sources of bacteremia. Two physicians used underlying patient factors, microorganism, and other clinical data to rate the preventability of each HOB event in an “ideal hospital” on a 6-point Likert scale.

Results. Medical records for 60 HOB events (20 in each hospital) were reviewed. The most common organisms were coagulase-negative Staphylococcus (28%) and Candida spp. (17%) (Figure 1). The most likely sources of bacteremia and fungemia included CLABSI (28%) and skin contaminants/commensals (17%) (Figure 2). Forty-nine percent of HOB events not attributed to skin commensals were rated as potentially preventable (Figure 3). Fifty percent of HOB events randomly sampled across 2 hospitals occurred in an intensive care unit. Central venous catheters, urinary...