2170. Association of Active Surveillance and Decolonization Program on Incidence of Clinical Cultures Growing Staphylococcus aureus in the Neonatal Intensive Care Unit;
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Background. Staphylococcus aureus (S. aureus) is a common cause of neonatal infections. Our aim was to determine sustainability of a program of active surveillance cultures and decolonization on the incidence of positive S. aureus clinical cultures.

Methods. We performed a retrospective cohort study of neonates admitted to a tertiary NICU from April 1, 2011 to June 30, 2016. We compared the incidence of S. aureus-positive clinical cultures before and after implementation of the program. S. aureus-positive cultures were defined as non-surveillance cultures that grew S. aureus. Cultures of specimens were considered unique events if collected from the same body site at least 30 days apart or from different body sites at least 14 days apart. Hospital-onset cultures were defined as clinical culture growth observed more than two days after admission. Hospital-onset cultures were used as comparison, as cultures obtained in the first 48 hours should not be affected by the program and the effect may be more pronounced. We used 2-sided Poisson tests for comparing independent incidence rates and interrupted time series analysis.

Results. There were 70 and 72 positive cultures in the pre (29,220 patient-days) and post (47,135 patient-days) intervention periods, respectively. Overall, there was a 36% reduction in the incident rate of S. aureus-positive cultures (IRR=0.64, 95% CI 0.460–0.884). Prior to the intervention, the quarterly rate of positive cultures did not change over time (Figure 1a). After implementation, there was a non-significant immediate 24.1% reduction in S. aureus cultures (IRR=0.76, 95% CI 0.35–1.65), after which positive cultures decrease by 4.1% per quarter (IRR=0.995, 95% CI 0.93–0.99). When examining the hospital-onset cultures, there was a 43% decrease, when comparing the two periods (IRR=0.57 95% CI 0.411–0.801). After implementation of the program, there was a similar immediate non-significant decrease of hospital-onset S. aureus cultures of 7.7% (IRR=0.621, CI 0.24–1.58), and a non-significant immediate 1% per quarter decrease in hospital-onset positive cultures (Figure 1b) (IRR=0.97, CI 0.92–1.023).

Conclusion. Active surveillance and decolonization may effectively and sustainably decrease S. aureus-positive clinical cultures in the NICU.

Disclosures. All authors: No reported disclosures.

2172. Prevalence and Characteristics of qacA/B-positive Methicillin-resistant Staphylococcus aureus (MRSA) Bloodstream Infection Isolates in a Tertiary Hospital
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Background. The increasing use of chlorhexidine (CHG) for MRSA decolonization has raised concerns about the emergence of resistance or tolerance to these agents.

Methods. We evaluated the frequency and characteristics of qacA/B chlorhexidine tolerance genes among MRSA bloodstream infection (BSI) isolates at a tertiary hospital in Korea. MRSA BSI isolates collected from 2011 to 2016 was examined for carriage of qacA/B genes and high-level mupirocin resistance. Staphylococcal cassette chromosome mec (SCCmec) and spa typing was also performed.

Results. Of the 203 MRSA BSI isolates, 57 (28.1%) were positive for qacA/B, 6 (3%) were positive for smr, and 15 (7.4%) were mupirocin resistant. Table 1 shows characteristics of qacA/B-positive vs. qacA/B-negative MRSA BSI. Patients with qacA/B-positive isolates were more often diagnosed with nosocomial BSI and catheter related BSI, but were less often diagnosed with bone and soft-tissue infections. The qacA/B-positive isolates were more often resistant to mupirocin, clindamycin, and ciprofloxacin and more often had a CHG MIC of > 4 mg/L. The qacA/B-positive isolates were more likely to belong to SCCmec II or III (84.2% vs. 38.5%, P < 0.001), which are common healthcare-associated (HA) MRSA strains in Korea. Most common spa types in qacA/B positive isolates were t2460 (64.9%) and t9353 (14.0%).

Conclusion. The qacA/B carriage among MRSA BSI isolates are not uncommon in this study and showed the features of HA-MRSA BSI.

Table 1. Characteristics of qacA/B-positive vs. qacA/B-negative MRSA BSI.

| Characteristics | qacA/B (+) (n = 57) | qacA/B (-) (n = 146) | P |
|----------------|---------------------|---------------------|---|
| Age, median (years) | 72 (60–84) | 69 (56–75) | 0.062 |
| Nosocomial BSI | 44 (77.2) | 61 (41.8) | < 0.001 |
| Catheter-related BSI | 35 (61.4) | 41 (28.1) | < 0.001 |
| Primary BSI | 14 (24.6) | 38 (26.0) | 0.999 |
| Bone and soft-tissue infections | 4 (10.8) | 33 (22.6) | 0.009 |
| Pneumonia | 2 (5.5) | 12 (8.2) | 0.358 |
| Other infections | 2 (5.5) | 13 (8.9) | 0.242 |
| Clindamycin resistant | 56 (98.2) | 96 (65.8) | < 0.001 |
| Ciprofloxacin | 56 (98.2) | 56 (38.4) | < 0.001 |
| Vancomycin MIC >= 2mg/L | 17 (29.8) | 26 (17.8) | 0.084 |
| Chlorhexidine MIC | 54 (87.4) | 50 (34.2) | < 0.001 |
| SCCmec II | 37 (64.9) | 39 (27.3) | < 0.001 |
| SCCmec III | 11 (19.3) | 16 (11.2) | 0.168 |
| SCCmec IV | 9 (15.8) | 88 (61.5) | < 0.001 |
| 30 day mortality | 14 (24.6) | 35 (25.0) | 0.999 |

Data are no. % of cases

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