

FACTORS AND BURDENS OF CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS IN A NEONATAL INTENSIVE CARE UNIT, SONGKHLA, THAILAND

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Abstract. Central line-associated bloodstream infections (CLABSI) result in higher mortality and longer lengths of hospital stay. The inclusion criterion was all neonates with central line used more than 48 hours. The case (CLABSI) and control (non-CLABSI) groups were analyzed in a Thai neonatal intensive care unit (NICU) to identify the incidence, associated factors, and burdens of CLABSI during 2014-2016. Over 3 years, there were 10,394 inborn live births and 1,498 NICU admissions. Central lines were inserted in 28.4% (425/1,498) of neonates. The cumulative incidence and incidence density of CLABSI were 3.06% (13/425) and 3.18 (13/4,088) per 1,000 line-days, respectively. The cases revealed significantly higher associations with gestational age, birth weight, extremely low birth weight infant, Apgar score at 5 minutes, and necrotizing enterocolitis (NEC) compared with the controls. By multivariate analysis, the cases were significantly associated with NEC [adjusted odd ratios (aOR) = 8.97; 95% confidence interval: 2.16–37.17; $p=0.002$] compared with the controls. The case fatality rate was higher among the cases (30.8%) than in the controls (11.7%) ($p=0.06$). Bronchopulmonary dysplasia (OR=5.23, $p=0.007$), retinopathy of prematurity (OR=3.57, $p=0.03$), and daily cost in the NICU (extra cost USD 31 per day, $p=0.04$) were higher in the cases. A neonate who has NEC should be monitored closely for CLABSI and their lines removed as early as possible.

Keywords: bacteremia, catheter-related infections, central venous catheters, cross infection, neonatal sepsis

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