To describe CLABSI events and identify risk factors for development of CLABSI in a resource-limited NICU” Geldenhuys et al (2017).

Abstract:

BACKGROUND: The rate of central-line-associated bloodstream infection (CLABSI) in South African (SA) public sector neonatal intensive care units (NICUs) is unknown. Tygerberg Children’s Hospital (TCH), Cape Town, introduced a neonatal CLABSI surveillance and prevention programme in August 2012.

OBJECTIVES: To describe CLABSI events and identify risk factors for development of CLABSI in a resource-limited NICU.

METHODS: A retrospective case-control study was conducted using prospectively collected NICU CLABSI events matched to four randomly selected controls, sampled from the NICU registry between 9 August 2012 and 31 July 2014. Clinical data and laboratory records were reviewed to identify possible risk factors, using stepwise forward logistic regression analysis.

RESULTS: A total of 706 central lines were inserted in 530 neonates during the study period. Nineteen CLABSI events were identified, with a CLABSI rate of 5.9/1 000 line days. CLABSI
patients were of lower gestational age (28 v. 34 weeks; p=0.003), lower median birth weight (1 170 g v. 1 975 g; p=0.014), had longer catheter dwell times (>4 days) (odds ratio (OR) 5.1 (95% confidence interval (CI) 1.0 – 25.4); p=0.04) and were more likely to have had surgery during their NICU stay (OR 3.5 (95% CI 1.26 – 10); p=0.01). Significant risk factors for CLABSI were length of stay >30 days (OR 20.7 (95% CI 2.1 – 203.2); p=0.009) and central-line insertion in the operating theatre (OR 8.1 (95% CI 1.2 – 54.7); p=0.03). Gram-negative pathogens predominated (12/22; 54%), with most isolates (10/12; 83%) exhibiting multidrug resistance.

CONCLUSION: The TCH NICU CLABSI rate is similar to that reported from resource-limited settings, but exceeds that of high-income countries. Prolonged NICU stay and central-line insertion in the operating theatre were important risk factors for CLABSI development. Intensified neonatal staff training regarding CLABSI maintenance bundle elements and hand hygiene are key to reducing CLABSI rates.

Reference:


Thank you to our partners for supporting IVTEAM