

To assess the prevalence of central line-associated bloodstream infections in pediatric patients with and without chylothorax after cardiac surgery and identify risk factors that predict those patients at highest risk for developing a central line-associated bloodstream infection” Waterhouse et al (2018).

Abstract:

OBJECTIVES: To assess the prevalence of central line-associated bloodstream infections in pediatric patients with and without chylothorax after cardiac surgery and identify risk factors that predict those patients at highest risk for developing a central line-associated bloodstream infection.

DESIGN: Retrospective single-center cohort study.

SETTING: A PICU located within a tertiary-care academic pediatric hospital.

PATIENTS: All pediatric patients admitted to the PICU after cardiac surgery between 2008 and 2014.

INTERVENTIONS: None.

MEASUREMENTS AND MAIN RESULTS: We identified 1,191 pediatric cardiac surgery patients in the study time frame, of which 66 (5.5%) had chylothorax. Patients with chylothorax were more likely to have a central line-associated bloodstream infection (23% vs 3.8%; $p < 0.001$). Patients with both chylothorax and central line-associated bloodstream infection had longer durations of central venous catheter, higher Risk Adjustment Congenital Heart Surgery score, longer PICU stay, and higher mortality compared with patients with chylothorax who did not have a central line-associated bloodstream infection. Multivariable analysis identified higher Risk Adjustment Congenital Heart Surgery score, longer duration of central venous catheter, and higher chest tube output at 24 hours after initiating treatment for chylothorax to be predictive of increased central line-associated bloodstream infection risk in patients with chylothorax.

CONCLUSIONS: The prevalence of central line-associated bloodstream infection is higher in

pediatric patients with chylothorax after heart surgery. In patients with chylothorax, complexity of surgery, central venous catheter duration, and chest tube output are associated with increased risk for developing a central line-associated bloodstream infection. Using this knowledge will allow us to identify patients at increased risk for central line-associated bloodstream infections and to focus extra prevention efforts on them.

Reference:

Waterhouse, S.G., Vergales, J.E., Conaway, M.R. and Lee, L. (2018) Predictive Factors for Central Line-Associated Bloodstream Infections in Pediatric Cardiac Surgery Patients With Chylothorax. *Pediatric Critical Care Medicine*. June 19th. .

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