

“NICU line infection rates decreased with implementation of CABSIs prevention protocols. Despite this implementation, catheters placed in the NICU continued to have higher infection rates.” Freeman et al (2015).

Reference:

Freeman, J.J., Gadepalli, S.K., Siddiqui, S.M., Jarboe, M.D. and Hirschl, R.B. (2015) Improving central line infection rates in the neonatal intensive care unit: Effect of hospital location, site of insertion, and implementation of catheter-associated bloodstream infection protocols. Journal of Pediatric Surgery. February 7th. .

Abstract:

INTRODUCTION: Catheter associated blood stream infections (CABSIs) are morbid and expensive for all ages, including neonates. Thus far, the impact of CABSIs prevention protocols, such as insertion and maintenance bundles, in the neonatal intensive care unit (NICU) is largely unknown. We hypothesized that lines placed in the operating room (OR) would have a lower infection rate due to established insertion protocols and a more sterile environment.

METHODS: A retrospective chart review of NICU patients who received a percutaneous or tunneled central venous catheter between 2005 and 2012 was performed. ECMO cannulas, PICC and umbilical catheters were excluded. Variables of interest included demographics, anatomical site, hospital location, line days, and line infection. Line infection was defined as a positive blood culture drawn through the catheter.

RESULTS: A total of 368 catheters were placed in 285 NICU patients. Majority of catheters (65.5%) were placed in OR. Saphenous and femoral veins were most common anatomical sites (50.8%). Twenty-eight catheters were infected (7.6%). After adjusting for preoperative antibiotics, anatomical site, and SNAPPE-II scores, lines placed in OR were three times less likely to become infected (Odds Ratio=0.32, p=0.038). Although implementation of CABSIs prevention protocols resulted in statistically significant reductions in infection (Odds Ratio=0.4, p=0.043), lines placed in the OR remained less likely to become infected.

CONCLUSIONS: NICU line infection rates decreased with implementation of CABSIs prevention protocols. Despite this implementation, catheters placed in the NICU continued to have higher infection rates. As a result, when patient status allows it, we recommend that central lines in newborns be placed in the operating room.



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