“The use of a closed catheter access system reduced the BSI in low birth weight preterm infants” Rundjan et al (2015).

Reference:

Rundjan, L., Rohsiswatmo, R., Paramita, T.N. and Oeswadi, C.A. (2015) Closed catheter access system implementation in reducing the bloodstream infection rate in low birth weight preterm infants. Frontiers in Pediatrics. March 16th. eCollection 2015.

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Abstract:

BACKGROUND: Bloodstream infection (BSI) is one of the significant causes of morbidity and mortality encountered in a neonatal intensive care unit, especially in developing countries. Despite the implementation of infection control practices, such as strict hand hygiene, the BSI rate in our hospital is still high. The use of a closed catheter access system to reduce BSI related to intravascular catheter has hitherto never been evaluated in our hospital.

OBJECTIVE: To determine the effects of closed catheter access system implementation in reducing the BSI rate in preterm neonates with low birth weight.

METHODS: Randomized clinical trial was conducted on 60 low birth weight preterm infants hospitalized in the neonatal unit at Cipto Mangunkusumo Hospital, Jakarta, Indonesia from June to September 2013. Randomized subjects either received a closed or non-closed catheter access system. Subjects were monitored for 2 weeks for the development of BSI based on clinical signs, abnormal infection parameters, and blood culture.

RESULTS: Closed catheter access system implementation gave a protective effect toward the occurrence of culture-proven BSI (relative risk 0.095, 95% CI 0.011-0.85, p = 0.026). Risk of culture-proven BSI in the control group was 10.545 (95% CI 1.227-90.662, p = 0.026). BSI occurred in 75% of neonates without risk factors of infection in the control group compared to none in the study group.

CONCLUSION: The use of a closed catheter access system reduced the BSI in low birth weight preterm infants. Choosing the right device design, proper disinfection of device, and appropriate frequency of connector change should be done simultaneously.

Full Text

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