

The purpose of this study was to determine the effect of catheter dwell time on risk of CLABSI" Greenberg et al (2015).

Abstract:

BACKGROUND AND OBJECTIVE: Central venous catheters in the NICU are associated with significant morbidity and mortality because of the risk of central line-associated bloodstream infections (CLABSIs). The purpose of this study was to determine the effect of catheter dwell time on risk of CLABSI.

METHODS: Retrospective cohort study of 13 327 infants with 15 567 catheters (93% peripherally inserted central catheters , 7% tunneled catheters) and 256 088 catheter days cared for in 141 NICUs. CLABSI was defined using National Health Surveillance Network criteria. We defined dwell time as the number of days from line insertion until either line removal or day of CLABSI. We generated survival curves for each week of dwell time and estimated hazard ratios for CLABSI at each week by using a Cox proportional hazards frailty model. We controlled for postmenstrual age and year, included facility as a random effect, and generated separate models by line type.

RESULTS: Median postmenstrual age was 29 weeks (interquartile range 26-33). The overall incidence of CLABSI was 0.93 per 1000 catheter days. Increased dwell time was not associated with increased risk of CLABSI for PICCs. For tunneled catheters, infection incidence was significantly higher in weeks 7 and 9 compared with week 1.

CONCLUSIONS: Clinicians should not routinely replace uninfected PICCs for fear of infection but should consider removing tunneled catheters before week 7 if no longer needed. Additional studies are needed to determine what daily maintenance practices may be associated with decreased risk of infection, especially for tunneled catheters.

Reference:

Greenberg, R.G., Cochran, K.M., Smith, P.B., Edson, B.S., Schulman, J., Lee, H.C., Govindaswami, B., Pantoja, A., Hardy, D., Curran, J., Lin, D., Kuo, S., Noguchi, A., Ittmann, P., Duncan, S., Gupta, M., Picarillo, A., Karna, P., Cohen, M., Giuliano, M., Carroll, S., Page, B., Guzman-Cottrill, J., Walker, M.W., Garland, J., Ancona, J.K., Ellsbury, D.L., Laughon, M.M. and McCaffrey, M.J. (2015) Effect of Catheter Dwell Time on Risk of Central Line-Associated Bloodstream Infection in Infants. Pediatrics. November 16th. .

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