
Abstract:

OBJECTIVE: To assess whether introduction of an evidence-based percutaneously inserted central catheter (PICC) care bundle reduced the risk of central line-associated bloodstream infection (CLABSI), thus altering the comparative risk of CLABSI in infants.

STUDY DESIGN: This retrospective cohort study included all infants for whom an umbilical venous catheter (UVC) was placed as part of routine care between Jan 1, 2006, and Dec 31, 2009, a period during which standardized PICC insertion and care bundles were introduced. Duration of UVC use was divided in ≤7 days and >7 days.

RESULTS: Infants in the ≤7 days UVC group had 1.0 CLABSI/1000 catheter days, and infants in the >7 days UVC group had 4.0 CLABSI/1000 catheter days (P < .001). Controlling for birth weight, gestational age, and antibiotic use, the >7 days UVC group had a greater risk of CLABSI (OR, 5.48) than the ≤7 days UVC group. CLABSI rate increased more rapidly in UVC than PICC with increasing duration of catheter rose.

CONCLUSIONS: Replacement of a UVC with a PICC when central venous access is needed after 7 days of age may reduce CLABSI.