Quality Report

Standardizing Umbilical Catheter Usage in Preterm Infants

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ABSTRACT

BACKGROUND AND OBJECTIVE: Absence of guidelines on umbilical arterial catheter (UAC) and umbilical venous catheter (UVC) use and inability to predict the hospital course may sway the frontline staff to overuse umbilical catheters in preterm infants. Our objective was to evaluate the feasibility of implementing guidelines standardizing the use of umbilical catheters and its impact on the incidence of sepsis and resource use.

METHODS: All inborn infants delivered at <33 weeks’ gestation and admitted to the NICU were included in this quality improvement study. The primary outcome was proportion of infants receiving umbilical catheters. Secondary outcomes were central venous catheter (CVC) use and central line–associated bloodstream infection (CLABSI).

RESULTS: The proportion of infants receiving UACs and UVCs was significantly lower in postintervention (sustainment) phase than in the preintervention phase (93 [42.3%] vs 52 [23.6], \( P = .0001 \)) and (137 [62.6%] vs 93 [42.3%], \( P = .0001 \)), respectively. There was no corresponding increase in the proportion of infants receiving peripherally inserted central catheters (PICCs) or surgical CVCs (SCVCs) during the sustainment phase. There was a significant reduction in the proportion of infants receiving CVCs (UVC, PICC, and SCVC) in the sustainment phase. The incidence of CLABSI was similar in the preintervention and sustainment phases.

CONCLUSIONS: Implementation of guidelines standardizing the use of umbilical catheters in the NICU is feasible. Fewer infants were exposed to the risk of UVC or UAC, and fewer resources were used.

Key Words: newborn umbilical catheter infection ventral line

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