Survey of central venous catheter practices in Australian and New Zealand neonatal units

Abstract:

BACKGROUND: Infection is the most common problem with central venous catheters (CVCs) in neonates. There are two published guidelines, including the Centers for Disease Control and Prevention (CDC), for the prevention of intravascular catheter-related infection that describes evidence-based practice to reduce nosocomial infection.

OBJECTIVE: Our aims were to survey current medical and nursing management of central venous catheters in tertiary neonatal intensive care units in Australia and New Zealand and to compare with the CDC evidence-based practice guideline.

METHODS: A cross sectional survey was performed across 27 Australian and New Zealand neonatal units in September 2012. Two web-based questionnaires were distributed, one to medical directors related to the insertion of CVCs while CVC “maintenance” surveys were sent to nurse unit managers.

RESULTS: Seventy percent (19/27) medical management and 59% (16/27) on nursing management surveys were completed. In all neonatal intensive care units (NICUs) there were guidelines for CVC maintenance and for 18 out of 19 there were guidelines for insertion. In
the seven units using femoral lines, three had a guideline on insertion and four for maintenance. CVC insertion was restricted to credentialed staff in 57.9% of neonatal units. Only 26.5% used full maximal sterile barriers for insertion. Skin disinfection practices widely varied. Dressing use and dressing change regimens were standardised; all using a semi-permeable dressing. Duration of cleaning time of the access point varied significantly; however, the majority used a chlorhexidine with alcohol solution (68.8%). Line and fluid changes varied from daily to 96 h. The majority used sterile gloves and a sterile dressing pack to access the CVC (68.8%). In the majority of NICUs stopcocks were used (62.5%) with a needle-less access point attached (87.5%). In less than 50% of NICUs education was provided on insertion and maintenance.

CONCLUSION: There is diversity of current practices and some aspects vary from the CDC guideline. There is a need to review NICU current practices to align with evidence based guidelines. The introduction of a common guideline may reduce variations in practice.