

Abstract:

BACKGROUND: Central venous catheterization (CVC) is an indispensable route of venous access in management of critically ill patients. Potential CVC related complications include mechanical and infectious complications.

OBJECTIVE: To determine type, incidence and risk factor of CVC related complications in pediatric patients.

MATERIAL AND METHOD: Prospective observational study of all patients who underwent CVC in pediatric intensive care unit (PICU) at Queen Sirikit National Institute of Child Health, over a 1-year period.

RESULTS: The study included 137 patients, of whom 63.5% were males. The mean age was 36.7 ± 4.4 months. There were 204 CVC attempts with total indwell time of 2,002 days. The rate of mechanical complication was 19%, including failure to place catheter (9.3%), hematoma (4.9%), arterial puncture (2%) and pneumothorax (1.5%). Patient body mass index (BMI) $> 30 \text{ kg/m}^2$, internal jugular venous catheterization, and longer insertion time (> 30 minutes) were associated with high mechanical complication rates. The incidence density of catheter related blood stream infection (CRBSI) was 7.5/1,000 catheter-days. Femoral vein placement had significant higher incidence of CRBSI.

CONCLUSION: CVC related complications are comparable to previous studies. Risk factors of mechanical complications include high BMI, internal jugular venous catheterization and longer insertion time. Femoral venous catheterization is the only risk factor for CRBSI.

Reference:

Srisan, P., Juhong, S. and Kanjanapatanakul, W. (2014) Central venous catheterization related complications in Pediatric Intensive Care Unit at Queen Sirikit National Institute of Child Health. *Journal of the Medical Association of Thailand*. 97(Suppl 6), p.S83-8.