



We sought to estimate the incidence of and identify the risk factors for complications associated with PICCs in an advanced registered nurse practitioners (ARNP)-driven programme” Badheka et al (2019).

Abstract:

OBJECTIVES: The use of peripherally inserted central catheters (PICCs) are an integral part of caring for hospitalised children. We sought to estimate the incidence of and identify the risk factors for complications associated with PICCs in an advanced registered nurse practitioners (ARNP)-driven programme.

DESIGN: Retrospective cohort study.

SETTING: Single-centre, large quaternary children’s hospital.

PARTICIPANTS: Hospitalised children who had PICC inserted from 1 January 2010 to 31 December 2016.

INTERVENTIONS: None.

MEASUREMENT AND MAIN RESULTS: A total of 2558 PICCs were placed during the study period. Mean age at PICC insertion was 8.7 years, mean dwell time was 17.7 days. The

majority of PICCs (97.8%) were placed by ARNP. Most were placed in a single attempt (79.6%). Mean PICC residual external length outside was 2.1 ± 2.7 cm. The rate of central line-associated bloodstream infection (CLABSI), thrombosis and significant bleeding were 1.9%, 1% and 0.2%, respectively. The CLABSI rate in infants and early childhood was higher than those aged ≥ 5 years (2.8%, 3.1%, respectively vs 1.3%). In a multivariate analysis after adjustment of confounding effects of race and gender, infants (OR= 2.24, CI=1.14 to 4.39, $p=0.02$) and early childhood cohort (OR=2.37, CI=1.12 to 5.01, $p=0.02$) were associated with significantly higher odds of developing CLABSI compared with ≥ 5 years old. In the early childhood cohort, PICCs with longer residual external catheter length (OR=1.30, 95% CI=1.07 to 1.57, $p=0.008$) and those placed in the operating room (OR=5.49, 95% CI=1.03 to 29.19, $p=0.04$), were associated with significantly greater risk of developing CLABSI.

CONCLUSIONS: The majority of PICCs were successfully placed by ARNPs on the first attempt and had a low incidence of complications. Infants required more attempts for successful PICC placement than older children. The presence of residual external catheter length and placement in the operating room were independent predictors of CLABSI in younger children.

You may also be interested in...

PICC related complications literature review

Safety of Peripherally Inserted Central Catheter use in OPAT for children

Outcomes PICC placement in extremely preterm infants

Full Text

Reference:

Badheka, A., Bloxham, J., Schmitz, A., Freyenberger, B., Wang, T., Rampa, S., Turi, J., Allareddy, V., Auslender, M. and Allareddy, V. (2019) Outcomes associated with peripherally inserted central catheters in hospitalised children: a retrospective 7-year single-centre experience. *BMJ Open*. 9(8), p.e026031. doi: 10.1136/bmjopen-2018-026031.

