Impact of elective replacement of peripheral intravenous cannulae in neonates | 1

Abstract:

Background: Newborns admitted to neonatal units often require vascular access. Peripheral intravenous cannulas allow essential medication, fluids, and/or parenteral nutrition to be delivered. Peripheral intravenous cannulas are often associated with complications, such as extravasation, infiltration, phlebitis, leakage, spontaneous dislodgement, and catheter-associated blood stream infection.

Methods: A secondary analysis of a randomized controlled trial evaluating standard replacement versus elective replacement (72-96 h) of peripheral intravenous cannula was conducted in a tertiary-level neonatal unit in Melbourne, Australia. The main outcome of this analysis was to assess the risk of combined adverse events associated with elective replacement of peripheral intravenous cannula. A cost analysis of the intervention was also conducted.

Results: Combined adverse outcomes noted per infant were 48 (87.27%) in the standard replacement group versus 44 (75.86%) in the elective replacement group (RR 0.87; 95% CI 0.71-1.04, p = 0.15). In terms of combined adverse outcome per 1000 intravenous hours, there was a significant risk ratio of 0.81 in the elective group compared with the standard group (95% CI 0.65-0.98, p = 0.04). Gestation (adjusted odds ratio (AOR) 0.58; 95% CI 0.35-0.96, p = 0.03), male gender (AOR 4.65; 95% CI 1.07-20.28, p = 0.04), elective replacement (AOR 0.12; 95% CI 0.03-0.68, p = 0.01), and the total number of re-sites (AOR 27.84; 95% CI 4.61-168.18, p < 0.001) were significant risk factors associated with adverse events. There were also significantly higher costs involved with elective replacement.

Conclusion: Elective replacement of peripheral intravenous cannulas was not shown to reduce the risk of combined adverse events. Elective peripheral intravenous cannula replacement also incurred a higher cost.

Reference: