

...interventions associated with peripheral intravenous catheterization first attempt success in pediatric inpatients and emergency department patients who require vascular access for therapeutic interventions” Parker et al (2016).

Abstract:

Aim: To identify interventions associated with peripheral intravenous catheterization first attempt success in pediatric inpatients and emergency department patients who require vascular access for therapeutic interventions.

Background: Unsuccessful peripheral intravenous catheterization puts children at risk for increased pain and treatment delays. Effective interventions to increase peripheral intravenous catheterization first attempt success are unclear.

Design: Systematic review of randomized controlled trials according to the Cochrane Handbook for the Systematic Review of Interventions.

Data Sources: Through November and December 2014 we searched 10 databases including MEDLINE (OVID), EMBASE (OVID) and CINAHL (EBSCO) without date limits. The references of articles were also reviewed. We included full text reports of randomized controlled trials testing intervention first attempt success rates versus standard of care.

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Review Methods: According to inclusion and exclusion criteria set a priori, data were extracted using a standardized tool. We assessed for risk of bias with the Cochrane Collaboration Risk of Bias Tool. Due to unclear reporting narrative synthesis was used to report results.

Results: Four cluster randomized control trials and ten randomized control trials involving 4539 participants ranging from 15.6 days to 16 years of age met our inclusion criteria. We

excluded the four cluster trials from meta-analysis due to unclear reporting. Interventions did not increase first attempt success rate compared with standard of care.

Conclusions: There was insufficient evidence to support the use of ultrasound, infrared light, or transillumination. Interventions to reduce children's pain did not decrease first attempt success. Research examining between-clinician proficiency and persistence differences is absent.

Reference:

Parker, S.I.A., Benzies, K. and Hayden, K.A. (2016) A Systematic Review: Effectiveness of Pediatric Peripheral Intravenous Catheterization Strategies. *Journal of Advanced Nursing*. November 16th. .

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