

To describe the frequency of and factors associated with prolonged peripheral intravenous catheter (PIV) insertion in the resuscitation area of a pediatric emergency department (PED)” Vukovic et al (2016).

Abstract:

OBJECTIVE: To describe the frequency of and factors associated with prolonged peripheral intravenous catheter (PIV) insertion in the resuscitation area of a pediatric emergency department (PED).

METHODS: Video-based study of a consecutive sample of non-trauma patients undergoing PIV insertion in the resuscitation area of a PED. Pre-existing videos were the main data source. The primary outcome was patients with prolonged duration of PIV insertion (> 90 seconds from start of first attempt to successful flush/blood draw). Logistic regression identified variables independently associated with prolonged PIV insertion.

RESULTS: 151 consecutive non-trauma patients underwent PIV insertion during a 2.5 month period. Sixty-nine patients (46%) had prolonged PIV insertion, including 14 for whom PED providers failed to insert PIVs. For patients with successful PIV insertion by PED providers, median duration was 48 sec (interquartile range 23, 295). Vascular access was ultimately achieved for 13 patients (93%) with initial insertion failure by the PED team (10 non-PED personnel, 3 intraosseous lines), with a median duration of 26.7 min (IQR 19.9, 34.2). Age \leq 2 years (OR_{adj} 6.9, 95% CI 2.9, 16.1) and musculoskeletal contractures (OR_{adj} , 5.3, 95% CI 1.6, 17.2) were independently associated with prolonged PIV insertion.

CONCLUSION: Prolonged PIV insertion is common in a PED resuscitation area. When PED providers could not insert a PIV, time to insertion was very long. Young patients and those with contractures were at particular risk for prolonged and failed PIV placement. When emergent vascular access is required, alternative approaches should be considered early for these patients.

Reference:

Vukovic, A.A., Frey, M., Byczkowski, T., Taylor, R. and Kerrey, B.T. (2016) Video-based assessment of peripheral intravenous catheter insertion in the resuscitation area of a



pediatric emergency department. Academic Emergency Medicine. January 30th. .

doi: 10.1111/acem.12927.

Thank you to our partners for supporting IVTEAM