Our primary objective was to determine the proportion of patients that required CVC after USPIV. Our secondary objective was to determine if classic risk factors for difficult vascular access were predictive of future CVC placement” Pare et al (2018).

Abstract:
Objectives: Ultrasound guided peripheral intravenous catheters (USPIV) are frequently utilized in the Emergency Department (ED) and lead to reduced central venous catheter (CVC) placements. USPIVs, however, are reported to have high failure rates. Our primary objective was to determine the proportion of patients that required CVC after USPIV. Our secondary objective was to determine if classic risk factors for difficult vascular access were predictive of future CVC placement.

Methods: We performed a retrospective review for patients treated at a large academic hospital. Patients were identified by electronic health record and were restricted to age older than 21 years, had received USPIV, and admittance. Exclusion criteria included an existing CVC. Descriptive statistics, t-tests, chi-square proportions, and logistic regression were performed to test associations.

Results: Of 363 eligible patients, 20 were excluded allowing for 343 for analysis. Of 343, 45 (13.1% 95% CI 9.9–17.1%) required CVC after USPIV. For secondary outcomes, no expected characteristics (diabetes, end-stage renal disease, IV drug abuse, peripheral vascular disease, or sickle cell disease) were predictive of CVC placement. The only predictive variables were admission to ICU/stepdown and length of stay. Each additional day of hospitalization had an OR 1.11 (95% CI 1.06–1.16%) of having a CVC placed.

Conclusion: Of those admitted after USPIV placement, approximately 7 out of every 8 patients did not require a subsequent CVC. Of the nearly 1 in 8 patients that required a CVC, factors associated with CVC placement were admission to a higher level of care and length of stay.

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