The objective of the current study was to compare the contrast extravasation rate for ultrasound-guided peripheral intravenous (USGPIV) catheter placement by emergency nurses with peripheral intravenous catheters placed by standard landmark techniques” Favot et al (2019).

Abstract:

INTRODUCTION: Vascular access procedures are among the most commonly performed procedures in the emergency department. The objective of the current study was to compare the contrast extravasation rate for ultrasound-guided peripheral intravenous (USGPIV) catheter placement by emergency nurses with peripheral intravenous catheters placed by standard landmark techniques.

METHODS: A retrospective chart review of all ED patients at our urban tertiary-care institution who underwent contrasted computed tomography examination and suffered contrast extravasation events was performed. A logbook of all ED patients who underwent USGPIV placement and an institution-wide electronic patient safety incident-reporting system was reviewed for all contrast extravasation events between May 2014, and February 2017. Data were analyzed using descriptive statistics, Student t-tests for continuous data, and χ2 or Fisher’s exact test for categorical data.

RESULTS: One thousand five hundred USGPIV catheters were placed by 27 emergency nurses. Contrast material was administered 29,508 times, and, of these, 291 were administered via USGPIV placement. There were 74 peripheral IV lines with documented contrast extravasations (0.25%) as reported in the safety-event database; 12 (4.1%) were from the USGPIV population, and 62 (0.21%) occurred in the standard landmark technique population. Relative risk of contrast extravasation events with USGPIV placement was 19.4 (95% confidence interval , 10.6-35.6), and the absolute risk difference was 3.9% (95% CI 1.6%-6.2%).

DISCUSSION: USGPIV placement by trained emergency nurses has higher rates of contrast extravasation than with standard landmark technique placement.
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