



Survey of Ultrasound-guided Peripheral Intravenous Practices: A Report of Supply Usage and Variability Between Clinical Roles and Departments

Ultrasound-guided peripheral intravenous reports of supply usage and variability between clinical and departmental roles

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Summary and Methods

In this article, the authors publish results from a 2019 survey of 1,475 participants, representing a diverse demographic of clinicians who perform ultrasound-guided peripheral intravenous (UGPIV) insertions. Variabilities between procedures and supplies were analyzed and discussed within different departments and revealed a need for clinical education on guidelines and compliance to promote standardization of supplies for UGPIV procedures.

Discussion and Results

Peripheral intravenous (PIV) catheter insertion has become more difficult to establish with multifactorial patient conditions over time. For this reason, ultrasound-guided peripheral cannulation has improved success rates with difficult-to-access veins.

Difficult vein access has been reported in 60% of patients. PIV insertion uses an aseptic technique, and while they present less infection risk than central catheters, bacterial contamination is still of concern with PIVs.

The Association for Vascular Access (AVA) guidelines suggest the use of a sterile transducer cover for any vascular access procedures, including UGPIV. However, the survey shows almost one-third of respondents reporting no use of a transducer cover during UGPIV and 11% reporting it was not important, contrary to studies that show bacterial contamination rates of up to 23% with ultrasound probes. Variability with the type of gel used was also noted within all departments surveyed. Transparent dressings used on transducers are controversial and discouraged in the literature due to adhesive residue that can be left behind and potentially damage the surface of the probe. In this survey, one-third of respondents also reported always using transparent dressings as ultrasound probe barriers. The authors recommended further investigation of transparent dressing usage on ultrasound probes due to concerns over their application, asepsis, and aggressive adhesives.

Aseptic technique was reportedly breached during post-procedure gel clean-up by 52% of vascular access specialists. The UGPIV insertion clean-up time of gel from the site was between 30 seconds and 1 minute in cases by 56% of emergency room respondents. Forty-one percent of vascular access specialists also reported inadequate removal of ultrasound gel after UGPIV procedures, which can cause securement and dressing adherence issues and lead to catheter failure and accidental dislodgment.

Conclusions

This survey was conducted with a range of facility sizes and experienced practitioners from a variety of departments. The authors recommend investigation of guideline application and evaluation of policy compliance to promote standardization of practices with UGPIV insertions. Further evaluation and compliance should address the use of transducer covers and transparent dressings, as well as the inadequate removal of gel after procedures that affect securement issues and accidental dislodgement of PIV catheters.

Author Commentary

"Gel-free insertion practices have been described in the literature and may increase procedural safety and aseptic technique, while reducing costs."

