



In difficult access patients, nurses were more successful in obtaining IV access using US guidance than palpation SOC technique. Lengthier placement times were observed more frequently when the SOC IV technique was used” Bahl et al (2016).

Abstract:

OBJECTIVE: This study analyzed outcomes associated with nurse-performed ultrasound (US)-guided intravenous (IV) placement compared to standard of care (SOC) palpation IV technique on poor vascular access patients.

METHODS: This was a randomized, prospective single-site study. Phase 1 involved education/training of a cohort of nurses to perform US-guided IVs. This consisted of a didactic module and hands-on requirement of 10 proctored functional IVs on live subjects. Phase 2 involved patient enrollment. emergency department patients meeting strict criteria of poor access were randomized to US-guided or SOC palpation arm. A functional IV placed by a study nurse was considered successful. Unsuccessful placement implied the study nurse failed, and a rescue IV was attempted. Time to IV placement was the total time required to obtain a functional IV and, if needed, a rescue IV.

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RESULTS: A total of 124 subjects were enrolled; 63 were randomized to the US-guided arm, and 61 were randomized into the SOC arm; 2 patients were excluded, leaving 59 patients. Success rate was 76% for the US-guided arm and 56% for the SOC arm ($P=.02$). Compared to the SOC arm, the odds ratio for success for the US-guided arm was 2.52 (95% confidence interval, 1.09-5.92). The mean time to IV placement for the US-guided arm was 15.8 and 20.7 minutes for the SOC arm ($P=.75$).

CONCLUSION: In difficult access patients, nurses were more successful in obtaining IV access using US guidance than palpation SOC technique. Lengthier placement times were observed more frequently when the SOC IV technique was used.

Reference:

Bahl, A., Pandurangadu, A.V., Tucker, J. and Bagan, M. (2016) A randomized controlled trial assessing the use of ultrasound for nurse-performed intravenous placement in difficult access patients in the ED. The American Journal of Emergency Medicine. July 1st. .

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