This study analyzed 300 ultrasound-guided peripheral intravenous lines and 552 traditionally placed intravenous lines using patient records to determine the reason and timing for intravenous line removal” Desai et al (2018).

Abstract:
Background: Ultrasound-guided peripheral intravenous lines are frequently used in patients with difficult access. We have previously reported on the longevity and complication rates of ultrasound-guided peripheral intravenous lines, but there are limited data comparing outcomes of ultrasound-guided peripheral intravenous lines to traditionally placed peripheral intravenous lines in children. The aim of this study was to compare the longevity and complication rates of ultrasound-guided peripheral intravenous lines to traditionally placed intravenous lines in a pediatric population.

Methods: This study analyzed 300 ultrasound-guided peripheral intravenous lines and 552 traditionally placed intravenous lines using patient records to determine the reason and timing for intravenous line removal. A t-test was used to compare overall mean survival times, and a log-rank test was used to compare Kaplan-Meier survival curves. Complication rates were compared using a chi-squared test.

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Results: The survival times of ultrasound-guided peripheral intravenous lines (mean = 73 hours, SD = 68 hours) were significantly longer than those of traditionally placed intravenous lines (mean = 38 hours, SD = 29.4 hours), t(559) = 8.51, P < .0001. Kaplan-Meier survival analysis yielded a median ultrasound-guided peripheral intravenous line survival time of 143 hours (IQR = 68-246) and a median traditionally placed intravenous line survival time of 100 hours (IQR = 65-106) with a significant difference between the 2 survival curves by the log-rank test. There was also no significant difference in complication rates between ultrasound-guided peripheral intravenous lines (34.8%) compared to traditionally placed intravenous lines (31.8%), x2(1, N = 517) = 0.465, P = .50.

Conclusions: Our data suggests that ultrasound-guided peripheral intravenous lines are a viable option for children, including those with a history of difficult access. Survival times were longer for ultrasound-guided peripheral intravenous lines versus traditionally placed intravenous lines, and complication rates of the ultrasound-guided peripheral intravenous lines and traditionally placed intravenous lines were similar.

Full Text
Reference:
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