Successful intravenous catheter placement plays a vital role in the pediatric emergency department. We assessed pediatric emergency department-related factors associated with difficult intravenous catheter placement” Lee et al (2019).

Abstract:

BACKGROUND: Successful intravenous catheter placement plays a vital role in the pediatric emergency department. We assessed pediatric emergency department-related factors associated with difficult intravenous catheter placement.

METHOD: We retrospectively reviewed the electronic medical records of patients younger than 18 years who had an intravenous catheter placement attempt during their pediatric emergency department stay. Difficult intravenous access was defined as intravenous catheter placement requiring more than one attempt. The demographic-, clinical- and procedure-related factors were collected, and a logistic regression analysis was used to evaluate the factors associated with difficult intravenous access.

RESULT: In total, 925 patients were enrolled, and 77 (8.32%) cases had difficult intravenous access. The median age of the patients was 3.0 (interquartile range = 1-9) years, and 496 (53.6%) patients were male. After adjustment, we found that age (odds ratio = 0.91, 95% confidence interval = (0.85-0.98), p = 0.01); a history of prematurity (odds ratio = 2.31, 95% confidence interval (1.08-4.98), p = 0.03); the intravenous catheter insertion site (foot versus hand odds ratio = 5.65, 95% confidence interval = (2.97-10.75); p < 0.001); and the experience of the provider (<6 months versus ≥12 months odds ratio = 4.59, 95% confidence interval = (1.92-11.01), p = 0.01) were associated with difficult intravenous access. However, the acuity of disease, crowdedness at the pediatric emergency department, sex, vein visibility, vein palpability, intravenous catheter size, patients' experience with intravenous access, and time of day were not significantly correlated with difficult intravenous access. CONCLUSION: The success rate of intravenous catheter placement at the pediatric emergency department could be improved by experienced providers. The acuity of disease and crowdedness at the pediatric emergency department were not significantly associated factors.
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