The EA-DIVA score is a simple tool to identify patients at high risk of peripheral difficult intravenous access” Civetta et al (2018).

Abstract:

INTRODUCTION: Providing peripheral intravenous access is one of the most commonly performed technical procedures in hospitals and it is mandatory for all patients undergoing surgery. Obtaining peripheral intravenous access may be difficult and this may cause delays in patient management, increased risk of adverse events and hospitalization costs. The aim of this study is to develop and validate a scale to identify patients at risk of peripheral difficult intravenous access, applicable to any adult patient undergoing surgery.

METHODS: A monocentric, observational study was conducted on adult surgical patients between September 2015 and April 2016. The primary outcome was the identification of parameters that could detect peripheral difficult intravenous access. Several parameters were taken into consideration, including patient details, healthcare professionals, and setting. The sample data were randomly divided into two subsets: a multivariate analysis was performed on the first one to define the Enhanced Adult DIVA score; the second subset was used for its validation.

RESULTS: We included 1006 patients (607 in the derivation, 399 in the validation cohorts respectively). The peripheral intravenous access was difficult in 127 patients (12.6%). The EA-DIVA score was devised with a score ranging from 0 to 12. The receiver operating characteristic (ROC) curve area under the curve (AUC) in the validation subset was 0.94. The validation study suggested a cut-off score of 8, which maximizes sensitivity (85.5%) and specificity (89.2%) in detecting difficult peripheral intravenous access, with a positive predictive value of 56% and a negative predictive value of 97.5%.

DISCUSSION: The EA-DIVA score is a simple tool to identify patients at high risk of peripheral difficult intravenous access. Its implementation is recommended in order to optimize peripheral intravenous access procedures.

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