



The aim of this study was to assess the most reliable method for central venous catheter (CVC) tip placement in paediatric patients” Chaskar et al (2018).

Abstract:

OBJECTIVE: Central venous cannulation of the internal jugular vein is difficult in paediatric patients because of the small size of the vein and anatomic variations. Many studies have shown the accuracy of various formulae for calculating the depth of placement. The aim of this study was to assess the most reliable method for central venous catheter (CVC) tip placement in paediatric patients.

METHODS: Sixty-nine patients in the age groups from 0 to 12 years were divided in three groups for three published techniques for catheter tip placement. In Group E, catheter tip was placed at the distance measured from entry point to sternal angle. In Groups P and H, Peres and trans-oesophageal echocardiography (TEE)-derived formulae, respectively, were used for catheter placement. Post-procedure chest radiograph was performed for all patients, and tip position was recorded. Appropriate catheter tip position was considered just above or at the level of carina. The number of attempts and complications were recorded. Chi-square test was used for statistical analysis.

RESULTS: Of 69 patients, 65% of patients in Group P, 52% in group H and 91% in group E had appropriate CVC tip placement. The chi-square test showed that the difference in the number

of patients with appropriately positioned CVC tip among the three groups was statistically significant ($p=0.0134$), with intergroup analysis showing Group E to be superior. One patient had an episode of arrhythmia during guide wire insertion and was resuscitated successfully.

CONCLUSION: Catheter tip placement by external distance or landmark technique is a more accurate method for catheter placement than the Peres and TEE-based formulae. It does not require measurement of patients' height and reduces the chances of repositioning of catheter.

Reference:

Chaskar, V., Karnik, P.P., Dave, N.M. and Garasia, M. (2018) Comparative Study of Three Methods for Depth of Central Venous Catheter Placement in Children: An Observational Pilot Study. Turkish Journal of Anaesthesiology and Reanimation. 46(2), p.116-120.

doi: 10.5152/TJAR.2018.32748.

