



The aim of this review was to identify and summarize published formulae for the correct positioning of the CVC tip in children and to discuss the benefits of these formulae for the daily routine” Cleff et al (2018).

Abstract:

BACKGROUND: Correct positioning of a central venous catheter (CVC) tip in pediatric patients is very important. Malpositioning may lead to direct complications, such as arrhythmia and increase the risk of thrombosis, infections, valve failures or pericardial tamponade.

OBJECTIVE: The aim of this review was to identify and summarize published formulae for the correct positioning of the CVC tip in children and to discuss the benefits of these formulae for the daily routine.

MATERIAL AND METHODS: A systematic and standardized search in Medline and PubMed was performed to identify published formulae. Formulae for insertion depth of the CVC tip over the right internal jugular vein are discussed. The keywords “pediatric” or “pediatric”, “children”, “central venous catheter”, “CVC”, “central venous”, “length”, “insertion”, “optimal”, “formula”, “depth”, “correct position” and “right position”, “internal jugular vein” were used to identify the formulae.

RESULTS: A total of 854 publications were found and 127 publications were analyzed. The

publications were subsequently assessed and classified independently by a specialist in anesthesiology and a specialist in pediatrics. A total of six publications described different body height-based formulae for calculation of a CVC insertion depth. No prospective evaluation of these formulae was performed to show if it is possible to place a CVC tip at the optimal position.

CONCLUSION: The benefit of a formula for daily practice is very limited due to the problem of choosing the right insertion point. The recommended insertion depth should be considered as an indicator and a verification of the CVC tip position should be done using an imaging technique.

Reference:

Cleff, C., Boensch, M., Eifinger, F. and Hinkelbein, J. (2018) Correct positioning of central venous catheters in pediatrics : Are current formulae really useful? *er Anaesthesist*. May 7th.

..

doi: 10.1007/s00101-018-0446-1

