

## **Implementation of electrocardiographic-guided tip positioning for peripherally inserted central catheter was safe and effective in this study and led to an improved high value and cost-conscious care” Bloemen et al (2018).**

Abstract:

**INTRODUCTION:** Peripherally inserted central catheters are venous devices intended for short to medium periods of intravenous treatment. Positioning of the catheter tip at the cavoatrial junction is necessary for optimum performance of a peripherally inserted central catheter. In this study, safety, effectiveness and cost-effectiveness of electrocardiographic-guided peripherally inserted central catheter positioning in a Dutch teaching hospital were evaluated.

**METHODS:** All patients who received a peripherally inserted central catheter in 2016 using electrocardiographic guidance were compared to those where fluoroscopy guidance was used in a prospective non-randomized cohort study. Relevant data were extracted from electronic health records. Cost-effectiveness analysis was performed.

**RESULTS:** A total of 162 patients received a peripherally inserted central catheter using fluoroscopy guidance and 103 patients using electrocardiographic guidance in 2016. No significant difference was found in malposition, infection or other complications between these groups. Due to personnel reduction and omission of fluoroscopy costs, cost reduction for each catheter insertion was €120 in the first year and, as a result of discounted acquisition costs, €190 in subsequent years.

**DISCUSSION:** The positioning results and complication rate are comparable to the previously reported literature. The cost reduction may vary in different hospitals. Other benefits of the electrocardiographic-guided technique are omission of X-ray exposure and improved patient service.

**CONCLUSION:** Implementation of electrocardiographic-guided tip positioning for peripherally inserted central catheter was safe and effective in this study and led to an improved high value and cost-conscious care.



Reference:

Bloemen, A., Daniels, A.M., Samyn, M.G., Janssen, R.J. and Elshof, J.W. (2018)  
Electrocardiographic-guided tip positioning technique for peripherally inserted central  
catheters in a Dutch teaching hospital: Feasibility and cost-effectiveness analysis in a  
prospective cohort study. *The Journal of Vascular Access*. March 1st. .

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