The observational study evaluated the effectiveness in terms of reliability of the intracavitary tip location system (ITLS) method, better known as the ECG method, for the correct positioning of the catheter tip in patients with atrial fibrillation (AFIB); the method exploits the recording of the electrical potential produced by the f waves, expression of the fibrillation of the atrium typical in patients with this disease, the measurement is based on the calculation of the peak-to-peak value of the f waves” Albertini et al (2019). 

Abstract:

The peripherally inserted central catheters (PICCs) are third generation silicone or polyurethane catheters, used as venous accesses for long- and medium-term care, and recommended in therapies that require venous access for more than six days. Current implantation methods recommend the radiological method, using standard chest RX in antero-posterior projection, as a method of assessing the correct positioning of the catheter tip. The observational study evaluated the effectiveness in terms of reliability of the intracavitary tip location system (ITLS) method, better known as the ECG method, for the correct positioning of the catheter tip in patients with atrial fibrillation (AFIB); the method exploits the recording of the electrical potential produced by the f waves, expression of the fibrillation of the atrium typical in patients with this disease, the measurement is based on
the calculation of the peak-to-peak value of the f waves. They were implanted using this method 101 subjects with previous determination of anthropometric measurement, according to the rule of Peres modified according to Pittiruti, and then subjected to standard thoracic RX in projection antero-posterior and latero-lateral. Our study shows that 97% of the patients implanted with this method at radiological control had the PICC correctly positioned, at an average distance from the hull of 44.9mm; 100% of the patients did not present complications in either the short or medium term. The analysis of the data also shows that the anthropometric evaluations, carried out with the Peres method, corresponded to the correct radiological positioning of the catheter, evaluated with the hull method, only in 45.5% of cases. Our study tends to demonstrate that the ECG-ITLS method, used as a method of intra-procedural control of PICC-type CVC positioning, in patients with atrial fibrillation, has greater reliability than that of anthropometric measurement and equivalent to radiological measurement, but has less chance of incurring in error of reading or projection.

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