The aim of the study was to determine the optimal location and instruments to reduce the number of catheter insertion attempts and to increase time without complications” Monasor-Ortolá et al (2019).

Abstract:

PURPOSE: In neonatal units, the use of peripheral venous catheters is a commonly used technique involving risks and local complications. Catheter duration and viability is limited and may involve multiple insertion attempts. Catheterization was considered successful when there were no local complications and the catheter was removed owing to completion of treatment. The aim of the study was to determine the optimal location and instruments to reduce the number of catheter insertion attempts and to increase time without complications.

DESIGN AND METHODS: A cross-sectional descriptive study was undertaken to analyze all the catheters inserted in the neonatal intermediate care unit of Vinalopó University Hospital (Elche, Spain). Between 2013 and 2017 the following variables were collected: sex, age, gestational age, and venipuncture site, as well as catheter type, number of insertion attempts, duration and complications.

RESULTS: A total of 929 catheters were analyzed with a mean duration of $46.5 \pm 33.9$ h, and were removed upon completion of treatment (success 38.3%). The preferred site was the
dorsal hand (48.2%) followed by the cubital fossa (20.1%). In both sites the success of the catheter and its duration was higher than the mean (42.4%; 43.9% and 49.4 ± 35.7; 50.3 ± 33.4 h respectively). The most frequent complications were extravasation (47.0%) and phlebitis (5.9%). Just one attempt was needed for 63.8% of cannulations of the dorsal hand, followed by 38.9% in the forearm. No significant differences were found in fixation type, sex, weight, gestational age or infusion type (continuous/intermittent).

CONCLUSIONS: The success of the technique is low. The preferred insertion sites with fewer complications, longer duration and fewer attempts were the dorsal hand and cubital fossa. With fewer attempts required for cannulation, better results were achieved on the dorsal hand.

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