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Abstract:

BACKGROUND: Among preterm infants, the peripherally inserted central catheter (PICC) is the standard line for central venous access; however, its placement exposes them to hypothermia and pain. Ultrasound (US)-guided central line insertion may be less morbid than standard PICC line.

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AIMS: To determine the ease, success rate, and morbidity associated with US-guided central line insertion in the internal jugular vein (IJV) by comparing it to the standard PICC line placement.

MATERIALS AND METHODS: This is a single-center nonrandomized prospective study evaluating preterm infants between October 2013 and June 2014. Patients were allocated into two groups: The standard group (control group) who underwent blind PICC line insertion and the intervention group who underwent a percutaneous US-guided central line insertion in the IJV. The epicutaneo-cava-catheter was used in both groups.

RESULTS: Fifty neonates were enrolled on study. A statistically difference in favor of US-IJV insertion was noted concerning the rate of successful first attempt ($P < 0.001$), insertion ($P = 0.001$), and procedure duration ($P < 0.001$) and number of trials ($P < 0.001$) compared to PICC. No difference in complications ($P = 1.000$) was noted.

CONCLUSION: US guided catheterization of the IJV technique is faster than PICC line

insertion with higher rates of successful first attempt and insertion, less procedure duration and fewer number of trials compared to PICC line insertion. There were no differences in complications.

Reference:

Al Hamod, D.A., Zeidan, S., Al Bizri, A., Baaklini, G. and Nassif, Y. (2016) Ultrasound-guided Central Line Insertion and Standard Peripherally Inserted Catheter Placement in Preterm Infants: Comparing Results from Prospective Study in a Single-center. North American Journal of Medical Sciences. 8(5), p.205-9.

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