The aim of the conducted study was to evaluate the effect of two PN delivery techniques (PICC and PVC) on anthropometric parameters and neurodevelopment of VLBW newborns” Aldakauskienė et al (2019).

Abstract:

Background and Objectives: In very low birth weight (VLBW) newborns, parenteral nutrition (PN) is delivered via a peripheral venous catheter (PVC), a central venous catheter (CVC), or a peripherally inserted central venous catheter (PICC). Up to 45% of PICCs are accompanied by complications, the most common being sepsis. A PVC is an unstable PN delivery technique requiring frequent change. The growth and neurodevelopment of VLBW newborns may be disturbed because of catheters used for early PN delivery and complications thereof. The aim of the conducted study was to evaluate the effect of two PN delivery techniques (PICC and PVC) on anthropometric parameters and neurodevelopment of VLBW newborns.

Materials and Methods: A prospective randomized clinical trial was conducted in VLBW (≥750⁻<1500 g) newborns that met the inclusion criteria and were randomized into two groups: PICC and PVC. We assessed short-term outcomes (i.e., anthropometric parameters from birth until corrected age (CA) 36 weeks) and long-term outcomes (i.e., anthropometric parameters from CA 3 months to 12 months as well as neurodevelopment at CA 12 months according to the Bayley II scale). Results: In total, 108 newborns (57 in the PICC group and 51 in the PVC group) were randomized. Short-term outcomes were assessed in 47 and 38 subjects, and long-term outcomes and neurodevelopment were assessed in 38 and 33 subjects of PICC and PVC groups, respectively. There were no differences observed in anthropometric parameters between the subjects of the two groups in the short- and long-term. Mental development index (MDI) < 85 was observed in 26.3% and 21.2% (p = 0.781), and psychomotor development index (PDI) < 85 was observed in 39.5% and 54.5% (p = 0.239) of PICC and PVC subjects, respectively. Conclusions: In the short- and long-term, no differences were observed in the anthropometric parameters of newborns in both groups. At CA 12 months, there was no difference in neurodevelopment in both groups.

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