To compare the effectiveness and safety in the insertion of femoral central venous catheters guided by ultrasound (US) versus the anatomical method (LM) in critical care pediatric patients” Pietroboni et al (2019).

Abstract:

BACKGROUND: Central venous cannulation (CVC) is common and necessary in pediatric intensive care. However, this procedure is not without risks or complications. Although CVCs have classically been placed following anatomical landmarks, the use of ultrasound guidance has largely replaced the latter, given its better profile of efficacy and safety, demonstrated at least in adult populations.

OBJECTIVES: To compare the effectiveness and safety in the insertion of femoral central venous catheters guided by ultrasound (US) versus the anatomical method (LM) in critical care pediatric patients.

METHODS: 100 patients were randomized: 50 were assigned to the US group and 49 to the LM group. In the LM group the traditional method consisted in palpating the femoral artery pulse as a; in the US group the CVC was inserted using a real time technique. Success at the first attempt, overall success in cannulation, number of attempts and arterial puncture were the variables studied in both groups.
RESULTS: Success at the first attempt and overall success in cannulation were significantly higher in the US group versus the LM (US 42% vs. LM 18%, p 0.011, US 84% vs. LM 51% p <0.001, respectively). The incidence of puncture of the femoral artery was lower in the US group (LM 12 vs. US 5, p 0.056) without achieving statistical significance. CONCLUSIONS: According to our results, the placement of central venous access via the femoral approach should be preferably performed under ultrasound guidance, however, further studies in larger populations are needed to confirm this findings.

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