

The aim of this study was to compare success rates, dwell times and complications of peripheral venous long cannulas (LCs) inserted under ultrasound guidance with those of SCs in children” Paladini et al (2018).

Abstract:

OBJECTIVES: Most children admitted to the emergency department (ED) require peripheral venous access (PVA), which is often difficult to perform or is unsuccessful. Ultrasound guidance helps with the placement of peripheral short cannulas (SC), but it has a limited cannula duration and a high risk of developing complications. The aim of this study was to compare success rates, dwell times and complications of peripheral venous long cannulas (LCs) inserted under ultrasound guidance with those of SCs in children.

METHODS: We prospectively studied all children older than 10 years of age admitted to our paediatric ED requiring PVA for an expected therapy of more than 5 days. In children with difficult intravenous access (DIVA), after two unsuccessful attempts of ‘blind’ placement of SCs, LCs (20 G, 8 cm) were inserted in the deep veins of arms using ultrasound guidance and the direct Seldinger technique.

RESULTS: LC placement (n=20) was successful in 100% of the cases. LC dwell time was 9.2 ± 6.0 days, and most catheters were electively removed because they were no longer indicated. SC (n=20) placement showed a shorter dwell time duration, 3.2 ± 2.1 days ($p<0.0001$), with complications occurring in 70% of the cases compared with 25% of cases in patients with LC ($p=0.002$). No local or major infectious complications were reported with LC placement.

CONCLUSIONS: Ultrasound-guided placement of LC was associated with a low risk of catheter failure and complications compared with the ‘blind’ placement of SC. LC placement may be considered a valid option in patients with DIVA requiring PVA in paediatric ED or in children who are candidates for infusion therapy expected to last longer than 5 days.

Reference:

Paladini, A., Chiaretti, A., Sellasie, K.W., Pittiruti, M. and Vento, G. (2018) Ultrasound-guided placement of long peripheral cannulas in children over the age of 10 years admitted to the emergency department: a pilot study. *BMJ Paediatrics Open*. 2(1), p.e000244.
doi: 10.1136/bmjpo-2017-000244.