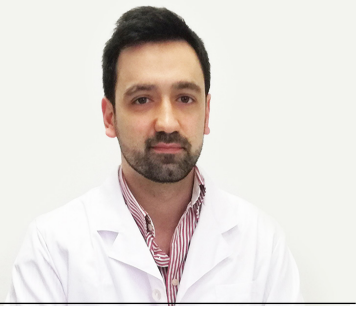
EDITORIAL COMMENT



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Ultrasound-guided central line insertion: how much evidence is really needed?

Central venous cannulation is one of the most common and necessary skills in hospital care. The National Institute for Health and Clinical Excellence (NICE) guidelines recommend real-time use of ultrasound (US) during central vein cannulation in all patients, children and adult. US vascular access did not demonstrate an improvement in the vascular access technique because both the local marking and US groups showed a very high rate of success[1,2]. US use demonstrated an increase in the first-attempt success rate and diminishes inadvertent access and the number of attempts without prolonging the access portion of the procedure. The diminished number of access attempts reduces trauma to the vessels and surrounding tissue, potentially leading to a reduction in complications in a larger population. In another prospective randomized study, Iwashima et al.[3] also showed no difference in the overall rate of success in achieving femoral access between a landmark-guided approach and an US approach for pediatric cardiac catheterization.

In Vasconcelos-Castro cohort, percutaneous central line insertion under US-control is safe and effective even in small children[4]. Additionally, thorax teleradiography was not able to improve outcomes or add minimal value in diagnosing severe complications after central venous catheter insertion. This reflects the gaps and empirical knowledge in this field, either due to lack of evidence, training or even update.

There is a lack of scientific literature to specifically delineate the number of procedures necessary to develop competence in performing real-time US cannulation because clinicians acquire knowledge and develop dexterity for the technique at different rates.

Robinson et al. showed the results of a dedicated peripherally inserted central catheter team, using US, increased the success rate from 73% to 94%, reduced the wait time for a catheter and overall placement costs, and reduced the overall usage of catheters by disapproving inappropriate requests[2].

Proper training is necessary to achieve clinical outcomes supported by scientific literature, to gain an appreciation of the US anatomy and understand the limitations of the US-guided technique. Although intangible to current evidence, the clinical improvements brought by the US cannulation are real. Proper international protocols and registries are the future in this field.

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