



Abstract

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COMPARISON OF REAL TIME ULTRASOUND GUIDANCE VERSUS PALPATION TECHNIQUE IN RADIAL ARTERY CATHETERIZATION IN CRITICALLY ILL PATIENTS PRESENTING WITH HYPOTENSION: A RANDOMIZED CONTROLLED TRIAL

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Objectives:

There is lack of data for the utility of USG guided arterial cannulation in critically ill patients in shock. We compared the impact of real time ultrasound guidance versus palpation method in achieving arterial catheterization in critically ill patients in hypotension. The primary objective was to compare USG-guidance with blind palpation technique in radial artery catheterization in terms of first-pass success rate among critically ill patients presenting with hypotension.

Methods:

A single center, prospective, randomized trial was performed among 100 critically ill patients aged >18 years, with hypotension (or requiring vasopressor infusion) and on not previous cannulated radial arteries. Patients were randomized in a ratio of 1:1 to the ultrasound group or palpation group. Statistical analyses performed using the SPSS statistical software program

Results:

A total of 100 patients with hypotensive shock requiring radial artery catheterization were randomized into palpation (n = 51) and ultrasound (n = 49) groups. One patient in ultrasound group was excluded from final analysis due to protocol violation. First pass success rate was significantly higher in ultrasound group as compared to palpation group (83% vs 41%, $p < 0.001$).

Conclusions:

In critically ill patients with hypotension (or requiring vasopressors), ultrasound guidance improved first pass success rate, shortened the cannulation time and reduced the rate of early complications in radial artery catheterizations.