In this network meta-analysis of randomized controlled trials, all three approaches were evaluated to identify the best technique for USG-guided internal jugular vein cannulation” Maitra et al (2019).

Abstract:

BACKGROUND: Comparison between various approaches of ultrasound (USG)-guided internal jugular vein cannulation, that is, short-axis out-of-plane approach, long-axis in-plane approach, and oblique-axis approach, is sparse. In this network meta-analysis of randomized controlled trials, all three approaches were evaluated to identify the best technique for USG-guided internal jugular vein cannulation.

METHODS: Randomized controlled trials comparing short-axis out-of-plane approach, long-axis in-plane approach, and oblique-axis approach in any combination (i.e. comparison of any two or all three) for USG-guided internal jugular vein cannulation were included in this meta-analysis. Bayesian network meta-analysis was conducted with a non-informative prior effect size and heterogeneity, and all results were reported as posterior median odds ratio with 95% credible interval.

RESULTS: Data of 658 patients from five randomized controlled trials were included in this meta-analysis. No difference was obtained in first attempt success rate of cannulation in three approaches (posterior median odds ratio between long-axis and short-axis view, oblique-axis and short-axis view, and long-axis and oblique-axis view were 0.67 (0.20, 2.08), 0.92 (0.09, 4.790), and 1.3420 (0.1680, 6.7820), respectively). No difference was seen in the incidence of carotid artery puncture and overall success rate of cannulation.

CONCLUSION: All three commonly used approaches for USG-guided internal jugular vein cannulation, that is, short axis, long axis, and oblique axis, are comparable in terms of clinical utility and safety. There is insufficient evidence to recommend one approach over another for this purpose.

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