



We investigated whether ultrasound guidance was advantageous over the anatomical landmark technique when performed by inexperienced paediatricians” de Souza et al (2018).

Abstract:

OBJECTIVE: We investigated whether ultrasound guidance was advantageous over the anatomical landmark technique when performed by inexperienced paediatricians.

DESIGN: Randomised controlled trial.

SETTING: A paediatric intensive care unit of a teaching hospital.

PATIENTS: 80 children (aged 28 days to <14 years).

INTERVENTIONS: Internal jugular vein cannulation with ultrasound guidance in real time or the anatomical landmark technique.

MAIN OUTCOME MEASURES: Success rate, success rate on the first attempt, success rate within three attempts, puncture time, number of attempts required for success and occurrence of complications.

RESULTS: We found a higher success rate in the ultrasound guidance than in the control group (95% vs 61%, respectively; $p < 0.001$; relative risk (RR)=0.64, 95% CI (CI) 0.50 to 0.83).

Success on the first attempt was seen in 95% and 34% of venous punctures in the US guidance and control groups, respectively ($p < 0.001$; $RR = 0.35$, 95% CI 0.23 to 0.54). Fewer than three attempts were required to achieve success in 95% of patients in the US guidance group but only 44% in the control group ($p < 0.001$; $RR = 0.46$, 95% CI 0.32 to 0.66). Haematomas, inadvertent arterial punctures, the number of attempts and the puncture time were all significantly lower in the ultrasound guidance than in the control group ($p < 0.015$ for all).

CONCLUSIONS: Critically ill children may benefit from the ultrasound guidance for internal jugular cannulation, even when the procedure is performed by operators with limited experience.

TRIAL REGISTRATION NUMBER: RBR-4t35tk.

Reference:

de Souza, T.H., Brandão, M.B., Santos, T.M., Pereira, R.M. and Nogueira, R.J.N. (2018) Ultrasound guidance for internal jugular vein cannulation in PICU: a randomised controlled trial. Archives of Disease in Childhood. April 4th. .

doi: 10.1136/archdischild-2017-314568.

