

Abstract:

PURPOSE: To compare intraosseous access with peripheral venous access on adults out-of-hospital cardiac arrest (OHCA) patients' clinical outcomes.

METHODS: A national retrospective multicentre study was conducted based on the French National Cardiac Arrest Registry. Comparison of patients (intraosseous vs. peripheral venous access) was conducted before and after a matching using a propensity score. The propensity score included confounding factors: age, time between the call (T0) to epinephrine (to take account of how quickly vascular access was achieved), the aetiology of OHCA, the shock and the patient initial rhythm at MMT arrival.

RESULTS: A total of 1576 patients received intraosseous access, and 27,280 received peripheral intravenous access. Before matching, OHCA patients with intraosseous access were less likely to survive at all stages (return of spontaneous circulation (ROSC), 0-day survival and 30-day survival). No significant difference in neurological outcome was observed. After propensity score matching, no significant differences in 30-day survival rates (OR = 0.763 [0.473;1.231]) and neurological outcome (OR = 1.296 [0.973;1.726]) were observed. However, intraosseous patients still showed lower likelihood of short-term survival (ROSC and 0-day survival) even after propensity score matching was implemented.

CONCLUSION: The populations we investigated were similar to those of other studies suggesting that intraosseous access is associated with reduced survival and poorer neurological outcome. Our findings suggest that intraosseous access is a comparably effective alternative to peripheral intravenous access for treating OHCA patients on matched populations.

Reference:

Baert, V., Vilhelm, C., Escutnaire, J., Nave, S., Hugenschmitt, D., Chouihed, T., Tazarourte, K., Javaudin, F., Wiel, E., El Khoury, C. and Hubert, H. (2020) Intraosseous Versus Peripheral Intravenous Access During Out-of-Hospital Cardiac Arrest: a Comparison of 30-Day Survival and Neurological Outcome in the French National Registry. *Cardiovascular Drugs and Therapy*. March 7th. doi: 10.1007/s10557-020-06952-8. (Epub ahead of print).