Intraosseous access versus peripheral intravenous access in the treatment of out-of-hospital cardiac arrest: A comparison of 30-day survival and neurological outcome in the French national registry

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Introduction: The latest guidelines acknowledge the efficacy of intraosseous access in treating adult out-of-hospital cardiac arrest (OHCA) patients. Recent studies have raised questions about the comparable efficacy of intraosseous access to intravenous access in OHCA patients care. In this study, we compared the clinical outcomes of adult OHCA patients subjected to drug administration with intraosseous access versus peripheral intravenous access.

Methods: A national retrospective multicentre study was conducted based on the French national cardiac arrest registry. We compared the clinical outcomes, especially the 30-day survival rates and neurological outcome, of OHCA patients treated with the intraosseous access versus peripheral venous access before and after propensity score matching.

Results: 1,576 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 of patient care compared to their counterparts. However, no significant difference in neurological outcome was observed between the two groups.

Conclusions: While the populations that we investigated were similar to those of other studies that suggest 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.

After propensity score matching, no significant differences in 30 days survival rates (1.8% vs 2.4%; p=0.266) and neurological outcome (85.2% vs 65.7%; p=0.082) were found. However, OHCA patients treated with intraosseous access still showed lower likelihood of short-term survival even after propensity score matching was implemented.