We seek to determine the effect of intraosseous over intravenous vascular access on outcomes after out-of-hospital cardiac arrest” Kawano et al (2018).

Abstract:

Study objective: We seek to determine the effect of intraosseous over intravenous vascular access on outcomes after out-of-hospital cardiac arrest.

Methods: This secondary analysis of the Resuscitation Outcomes Consortium Prehospital Resuscitation Using an Impedance Valve and Early Versus Delayed (PRIMED) study included adult patients with nontraumatic out-of-hospital cardiac arrests treated during 2007 to 2009, excluding those with any unsuccessful attempt or more than one access site. The primary exposure was intraosseous versus intravenous vascular access. The primary outcome was favorable neurologic outcome on hospital discharge (modified Rankin Scale score ≤3). We determined the association between vascular access route and out-of-hospital cardiac arrest outcome with multivariable logistic regression, adjusting for age, sex, initial emergency medical services–recorded rhythm (shockable or nonshockable), witness status, bystander cardiopulmonary resuscitation, use of public automated external defibrillator, episode
location (public or not), and time from call to paramedic scene arrival. We confirmed the results with multiple imputation, propensity score matching, and generalized estimating equations, with study enrolling region as a clustering variable.

Results: Of 13,155 included out-of-hospital cardiac arrests, 660 (5.0%) received intraosseous vascular access. In the intraosseous group, 10 of 660 patients (1.5%) had favorable neurologic outcome compared with 945 of 12,495 (7.6%) in the intravenous group. On multivariable regression, intraosseous access was associated with poorer out-of-hospital cardiac arrest survival (adjusted odds ratio 0.24; 95% confidence interval 0.12 to 0.46). Sensitivity analyses revealed similar results.

Conclusion: In adult out-of-hospital cardiac arrest patients, intraosseous vascular access was associated with poorer neurologic outcomes than intravenous access.

Reference:

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