

It is unknown if the anatomical distance of intraosseous (IO) epinephrine injection from the heart affects resuscitative outcome” Burgert et al (2015).

Abstract:

INTRODUCTION: It is unknown if the anatomical distance of intraosseous (IO) epinephrine injection from the heart affects resuscitative outcome. The purpose of this study was to explore the relationships between the anatomical distance of IO epinephrine injection and measures of resuscitative outcome in an adult swine model of ventricular fibrillation (VF).

ReTweet if useful... What difference does intraosseous injection site make to resuscitative outcome <http://ctt.ec/ae794+> @ivteam #ivteam

Click To Tweet

METHODS: Thirty-two Yorkshire-cross swine (60-80 kg) were randomly assigned to four groups: humeral IO (HIO), tibial IO (TIO), IV with defibrillation and epinephrine, and IV control: with defibrillation but no epinephrine. Ventricular fibrillation was induced. Swine remained in VF for 4 minutes prior to mechanical chest compressions. After 6 minutes in VF, swine were defibrillated and epinephrine (0.01 mg/kg) administered by group assignment. Defibrillation was repeated every 2 minutes. Epinephrine was repeated every 4 minutes. Interventions continued until return of spontaneous circulation (ROSC) or 26 post-arrest minutes elapsed. Swine achieving ROSC were observed for 30 minutes post-ROSC.

RESULTS: There were no significant differences between the HIO, TIO, and IV groups relative to the occurrence of ROSC ($P > .05$ in all cases), 30-minute post-ROSC survival ($P > .05$ in all cases), and time to ROSC ($P = .43$). There were significant differences between the HIO, TIO, and IV groups compared to the control group relative to the occurrence of ROSC ($P = .02, .01, \text{ and } .007$ respectively), and 30 minute post-ROSC survival ($P = .05, .03, \text{ and } .007$, respectively).

CONCLUSION: The anatomical distance of IO epinephrine injection from the heart did not affect short-term measures of resuscitative outcome in an adult swine model of VF including the occurrence of ROSC, 30 minute post-ROSC survival, and time to ROSC. Rapidly administered epinephrine, irrespective of route of administration, increased the chance ROSC and survival to 30 minutes post-ROSC would occur in this study.

Reference:



What difference does intraosseous injection site make to resuscitative outcome | 2

Burgert, J.M., Johnson, A.D., Garcia-Blanco, J., Froehle, J., Morris, T., Althuisius, B., Richards, J. and Castano, C. (2015) The effects of proximal and distal routes of intraosseous epinephrine administration on short-term resuscitative outcome measures in an adult swine model of ventricular fibrillation: a randomized controlled study. *The American Journal of Emergency Medicine*. September 21st. .

Thank you to our partners for supporting IVTEAM