To determine if there were significant differences among humerus intraosseous (HIO), sternal intraosseous (SIO), and intravenous (IV) administration of 500 mL Hextend in hemodynamics or administration time in a hypovolemic swine model” Blouin et al (2016).

Abstract:

OBJECTIVE: To determine if there were significant differences among humerus intraosseous (HIO), sternal intraosseous (SIO), and intravenous (IV) administration of 500 mL Hextend in hemodynamics or administration time in a hypovolemic swine model.

SETTING: Vivarium.

SUBJECTS: Yorkshire swine; sample size was based on a large effect size of 0.5, an α of 0.05, and a power of 80 percent Swine were randomly assigned to one of four groups: HIO (n = 9), SIO (n = 9), IV (n = 9), and control (n = 9).

INTERVENTION: Swine were exsanguinated 30 percent of their blood volume. Hextend (500
mL) was administered by either the HIO, SIO, or IV route; the control group received none.

MAIN OUTCOME: Time of administration of Hextend; systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP), heart rate (HR), cardiac output (CO), and stroke volume (SV) data were collected every 2 minutes and compared by group over 8 minutes.

RESULTS: A repeated analysis of variance found that there were no significant differences in SBP, DBP, MAP, HR, CO, and SV among HIO, SIO, and IV groups over 8 minutes (p > 0.05). An analyses of variance determined that there was no significant difference between groups relative to time of administration (p = 0.521).

CONCLUSION: When IV access is difficult, both HIO and SIO are effective techniques for rapid vascular access and the administration of Hextend for patients in hypovolemic shock.

Reference:


Thank you to our partners for supporting IVTEAM