Compare the onset and duration of rocuronium administered via the intravenous (IV), and intraosseous (IO) routes in a hypovolemic swine model” Nemeth et al (2017).

Abstract:

OBJECTIVE: Compare the onset and duration of rocuronium administered via the intravenous (IV), and intraosseous (IO) routes in a hypovolemic swine model.

DESIGN: Prospective, between subjects, experimental study.

SUBJECTS: Yorkshire-cross swine (N = 8).

INTERVENTION: Electromyography (EMG) amplitudes were recorded at baseline and for every 15 seconds after administering 1.2 mg/kg of rocuronium via IV or IO routes to hypovolemic swine. EMG amplitudes were measured until termination of EMG activity and then measured every 5 minutes until there was a return to baseline values. Individual data were transformed
to percent baseline.

MAIN OUTCOME MEASUREMENTS: The time from the end of injection to 90 percent reduction of baseline EMG activity (Onset90), the time to maximum reduction (Onsetpeak), and the maximum reduction of the neuromuscular response (peak effect), as well as, time from the end of injection to the return of 25, 50, 75, and 95 percent of baseline EMG activity was used to characterize onset and recovery of neuromuscular function.

RESULTS: Maximum reduction, Onset 90 and Onset peak times were not statistically different between groups. The IV group’s mean time to recovery of all benchmarks was faster than the IO group. The IO group took statistically longer than the IV group to return to 25, 50, 75, and 95 percent of baseline activity.

CONCLUSION: The IO route is an effective method of administering rocuronium and is comparable to the IV route even under conditions of significant hemorrhage.

Reference: