Abstract:

BACKGROUND: Intraosseous (IO) drug infusion has been reported to have similar pharmacokinetics to intravenous (IV) infusion. In military and civilian trauma, the IO route is often used to obtain rapid and reliable parenteral access for drug administration. Only a few case reports have described the use of IO infusion to administer drugs for rapid sequence induction of anaesthesia (RSI).

OBJECTIVE: We aimed to assess the feasibility of the administration of RSI drugs via an IO catheter in a prospective observational study.

METHODS: A prospective observational study was undertaken at a combat hospital in Afghanistan. A validated data form was used to record the use of IO drugs for RSI by the prehospital, physician-led Medical Emergency Response Team (MERT), and by inhospital physicians. Data were captured between January and May 2012 by interview with MERT physicians and inhospital physicians directly after RSI. The primary outcome measure was the success rate of first-pass intubation with direct laryngoscopy.

RESULTS: 34 trauma patients (29 MERT and 5 inhospital) underwent RSI with IO drug administration. The median age was 24 years and median injury severity score 25; all were male. The predominant mechanism of injury was blast (n=24), followed by penetrating (n=6), blunt (n=3) and burn (n=1). First-pass intubation success rate was 97% (95% CI 91% to 100%). A Cormack-Lehane grade 1 view, by direct laryngoscopy, was obtained at first look in 91% (95% CI 81% to 100%) of patients.

CONCLUSIONS: In this prospective, observational study, IO drug administration was successfully used for trauma RSI, with a comparable first pass intubation success than published studies describing the IV route.

TRIAL REGISTRATION NUMBER: RCDM/Res/Audit/1036/12/0162.

Reference: