

It is unknown that to what extent the IO route has been used to gain vascular access during disasters and mass casualty events” Burgert (2016).

Abstract:

OBJECTIVE: The intraosseous (IO) route of vascular access has been increasingly used to administer resuscitative fluids and drugs to patients in whom reliable intravenous (IV) access could not be rapidly or easily obtained. It is unknown that to what extent the IO route has been used to gain vascular access during disasters and mass casualty events. The purpose of this review was to examine the existing literature to answer the research question, “What is the utility of the IO route compared to other routes for establishing vascular access in patients resulting from disasters and mass casualty events?”

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DESIGN: Keyword-based online database search of PubMed, CINAHL, and the Cochrane Database of Systematic Reviews.

SETTING: University-based academic research cell.

EVIDENCE SOURCES: Included evidence were randomized and nonrandomized trials, systematic reviews with and without meta-analysis, case series, and case reports. Excluded evidence included narrative reviews and expert opinion.

MAIN OUTCOME MEASURES: Not applicable.

RESULTS: Of 297 evidence sources located, 22 met inclusion criteria. Located evidence was organized into four categories including chemical agent poisoning, IO placement, while wearing chemical protective clothing (PPE), military trauma, and infectious disease outbreak.

CONCLUSIONS: Evidence indicates that the IO route of infusion is pharmacokinetically equal to the IV route and superior to the intramuscular (IM) and endotracheal routes for the administration of antidotal drugs in animal models of chemical agent poisoning while wearing full chemical PPE. The IO route is superior to the IM route for antidote administration during hypovolemic shock. Civilian casualties of explosive attacks and mass shootings would likely benefit from expanded use of the IO route and military resuscitation strategies. The IO route is useful for fluid resuscitation in the management of diarrheal and hemorrhagic infectious disease outbreaks.

Reference:

Burgert, J.M. (2016) Intraosseous vascular access in disasters and mass casualty events: A review of the literature. *American Journal of Disaster Medicine*. 11(3), p.149-166.
doi: 10.5055/ajdm.2016.0235.



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