IO access should be available on neonatal units and considered for early use in neonates where other access routes have failed” Scrivens et al(2019).

Abstract:

BACKGROUND: The use of intraosseous (IO) access during resuscitation is widely accepted and promoted in paediatric medicine but features less prominently in neonatal training. Whilst umbilical venous catheterization (UVC) is a reliable method of delivering emergency drugs and fluids, it is not always achievable in a timely manner. IO access warrants exploration as an alternative.

AIM: Conduct a systematic review of existing literature to examine the evidence for efficacy and safety of IO devices in neonatal patients, from birth to discharge.

METHOD: A search of PubMed, Ovid, Medline, and Embase was carried out. Abstracts were screened for relevance to focus on neonatal-specific literature and studies which carried out separate analyses for neonates (infants <28 days of age or resident on a neonatal unit).

RESULTS: One case series and 12 case reports describe IO device insertion into 41 neonates, delivering a variety of drugs, including adrenaline (epinephrine) and volume resuscitation. Complications range from none to severe. Cadaveric studies show that despite a small margin for error, IO devices can be correctly sited in neonates. Simulation studies suggest that IO devices may be faster and easier to site than UVC, even in experienced hands.

CONCLUSION: IO access should be available on neonatal units and considered for early use in neonates where other access routes have failed. Appropriate training should be available to staff in addition to existing life support and UVC training. Further studies are required to assess the optimal device, position, and whether medication can be delivered IO as effectively as by UVC. If IO devices provide a faster method of delivering adrenaline effectively than UVC, this may lead to changes in neonatal resuscitation practice.

You may also be interested in...

Malposition of intraosseous needles in pediatric patients
Case study describes retained intraosseous sternal needles
Intravenous versus intraosseous access in prehospital cardiac arrest

Reference: