

Intra-osseuse

Maryse Houde

R3 Médecine familiale

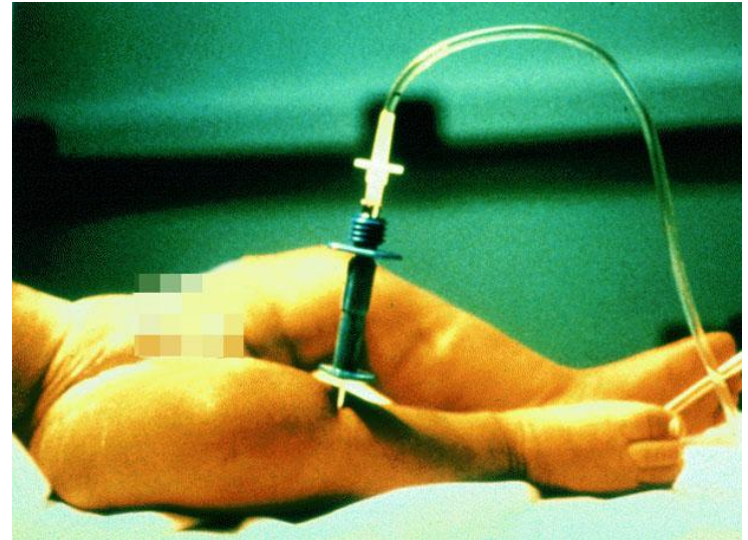
Évaluation de la qualité de l'acte

Quel est le délai dans l'utilisation des voies intra-osseuses (IO) chez les patients instables en salle de réanimation ?

Plan

- Introduction
- Revue de la littérature
 - Délai
 - Taux de succès
 - Manuel vs automatique
 - Sites
- Synthèse

Historique



“My kingdom for an IV line”

Méthodologie

- Exclusions
- Medline :
 - Infusions, Intraosseous (Mesh)
 - (Intraosseous or Intra-osseous) and (success rate or access time) (Intraosseous or Intra-osseous) and site
 - Infusions, Intraosseous (Mesh) + Catheterization, Central venous (Mesh)
 - Infusions, Intraosseous (Mesh) + (Humeral Head (Mesh) or Humer*)
- Embase :
 - (Intraosseous drug administration (Mesh) or intraosseus) and (success rate or access time or first-attempt)
 - Intrasseous drug administration (Mesh) and (site or injection site (Mesh) or route or humer*)

Recommandations - Quand installer une voie IO?

- Ped-ALS 2010 :
 - 1e essai si ACR ou choc sévère.
 - si IV pas accessible rapidement
- AHA et ACLS: si IV non accessible rapidement
- ERC 2010 : si IV difficile

Recommandations - Quand installer une voie IO?

- Heart and Stroke Foundation : si IV non accessible rapidement
- ILCOR 2010 : si IV difficile
- Resuscitation council of UK : après 2 minutes de tentatives infructueuses

Voie IO- Taux de succès

| Étude | Nbre insertions | Taux de succès |
|------------------|-----------------|----------------|
| Schalk et al. | 77 | 97% |
| Torres et al. | 114 | 100% |
| Reinhardt et al. | 88 | 94% |
| Lewis et al. | 1014 | 98% |
| Gazin et al. | 39 | 84% |

Voie IV vs IO

- Étude randomisée contrôlée : IV, IO tibia, IO humérus
- 182 ACR médicaux en extra-hospitalier

Intraosseous Versus Intravenous Vascular Access During Out-of-Hospital Cardiac Arrest: A Randomized Controlled Trial

Rosalyn Reades, MD, Jonathan R. Studnek, PhD, NREMT-P, Steven Vandeventer, EMT-P, John Garrett, MD

From the Methodist Hospital System, Dallas, TX (Reades); Carolinas Medical Center and the Center for Prehospital Medicine, Charlotte, NC (Studnek); Mecklenburg EMS Agency, Charlotte, NC (Studnek, Vandeventer); and the Baylor Healthcare Systems, Department of Emergency Medicine, Baylor University Medical Center, Dallas, TX (Garrett).

Voie IV vs IO

| Voie | Taux de succès (%) | Déplacement (%) |
|------------|--------------------|-----------------|
| IV | 43 | 6 |
| IO humérus | 51 | 20 |
| IO tibia | 91 | 5 |

Voie centrale vs IO

- Étude observationnelle prospective
- 40 pts instables avec échec voie IV
- Anesthésistes et chirurgiens

Comparison of intraosseous versus central venous vascular access in adults under resuscitation in the emergency department with inaccessible peripheral veins[☆]

Bernd A. Leidel^{a,c,*}, Chlodwig Kirchhoff^b, Viktoria Bogner^b, Volker Braunstein^b, Peter Biberthaler^b, Karl-Georg Kanz^b

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Voie centrale vs IO

| Voie | Taux de succès (%) | Durée (min) |
|----------|--------------------|-------------|
| IO | 85 | 2 |
| Centrale | 60 | 8 |

Manuel vs automatique



Manuel vs automatique

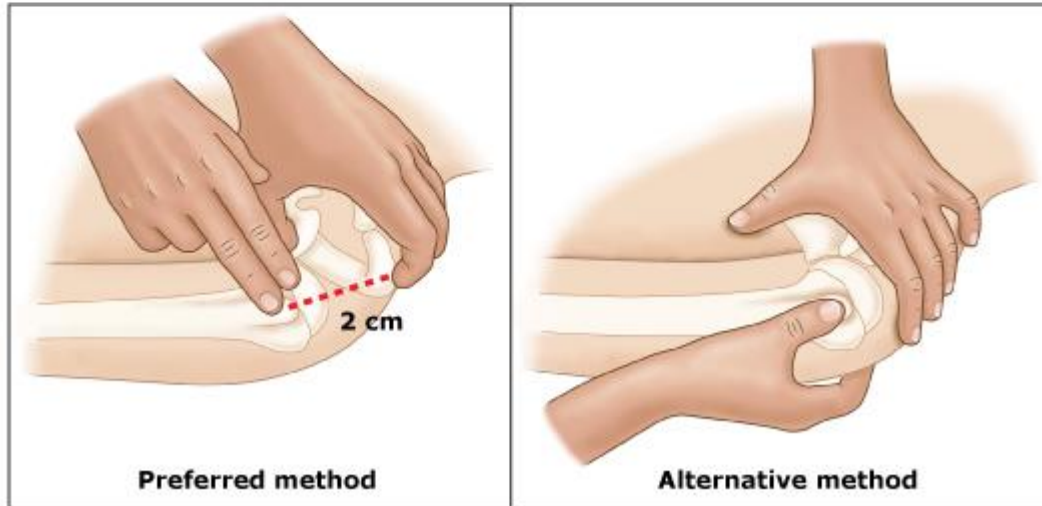
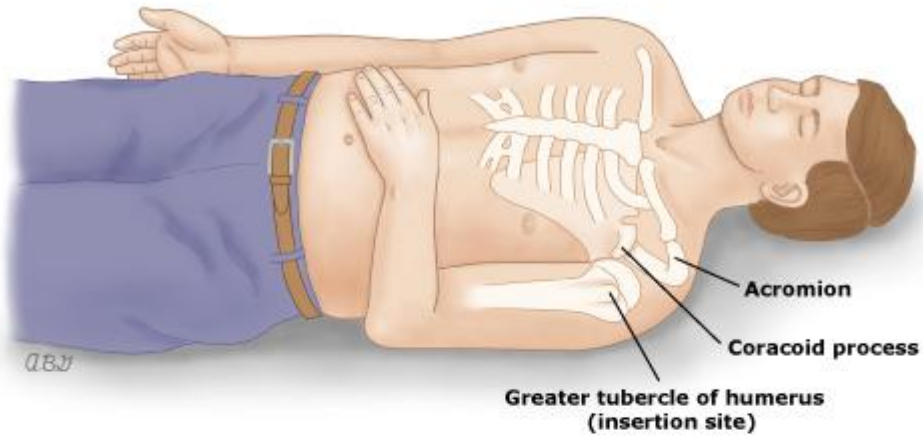
Comparison of two intraosseous infusion systems for adult emergency medical use[☆]

Thorsten Brenner^{a,1}, Michael Bernhard^{a,*,1}, Matthias Helm^b, Sara Doll^c, Alfred Völkl^c, Nicole Ganion^a, Claudia Friedmann^a, Marcus Sikinger^a, Jürgen Knapp^a, Eike Martin^a, André Gries^{a,d,e}

Manuel vs automatique

| Méthode | Temps d'insertion (sec) | Taux de succès (%) | Complications (%) |
|----------|-------------------------|--------------------|-------------------|
| Manuelle | 33 | 79.5 | 15 |
| EZIO | 32 | 97.8 | 0 |

Sites



Sites

- Étude observationnelle prospective
- 92 pts avec ACR médical
- Humérus vs tibia

COMPARISON OF FIRST-ATTEMPT SUCCESS BETWEEN TIBIAL AND HUMERAL INTRAOSSEOUS INSERTIONS DURING OUT-OF-HOSPITAL CARDIAC ARREST

Rosalyn Reades, MD, Jonathan R. Studnek, PhD, NREMT-P, John S. Garrett, MD,
Steven Vandeventer, EMT-P, Tom Blackwell, MD

Sites

| Site | Taux de succès (%) | Déplacement (%) |
|---------|--------------------|-----------------|
| Tibia | 89,7 | 5,8 |
| Humérus | 60 | 33 |

Sites

- Analyse de cohorte rétrospective
- 405 pts avec ACR extra-hospitalier

**Paramedics successfully perform humeral EZ-IO
intraosseous access in adult out-of-hospital
cardiac arrest patients[☆]**

David Wampler PhD, LP^{a,b,*}, Daniel Schwartz MD^{a,b}, Joi Shumaker RN, LP^{a,b},
Scotty Bolleter BS, EMT-P^c, Robert Beckett EMT-P^b, Craig Manifold DO^{a,b,c}

Sites

| Site | Taux de succès (%) |
|---------|--------------------|
| Humérus | 91% |
| Tibia | 95% |

Synthèse

- Envisager rapidement une voie IO si la voie IV est difficile
- Voie IO > voie IV ou voie centrale
- EZ-IO > manuelle
- Tibia > humérus ?

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