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Letter to the Editor

Intraosseous versus intravenous resuscitation during in-hospital cardiac arrest



To the Editor,

The pharmacokinetics of medication delivery through intraosseous (IO) access is not well characterized in in-hospital cardiac arrest (IHCA) during resuscitation. We commend Schwalbach et al. for their outstanding work on this subject as it certainly adds value to the current literature.¹ After reviewing this article, we would like to share some comments.

It's mentioned in the introduction that the primary aim of the study is to “compare outcomes between IO and peripheral intravenous (PIV) injection during IHCA”. We are not sure what kind of injection they are referring to here.

As stated in the methods section, medical and surgical patients in intensive care, acute care, and procedural areas were included in the study: however, it's not clear if patients from the hospital floor were also included. If they were not included, we are concerned that the study population didn't truly represent the “in-hospital” population, which was the target population of this study.

The IO access was placed if there was no pre-existing PIV access or a PIV access was not placed before the Medical Emergency Team's (MET) arrival. Although the authors admitted their inability to distinguish between patients who had a pre-existing PIV access and those who had PIV placed after IHCA in the limitations section, it's important to know the number of patients with pre-existing PIV access as they could have a shorter time-to-epinephrine (TTE) and time-to-ROSC compared to those who had PIV placed after IHCA. Also, we are interested to know if the time from initiation of Advanced Cardiac Life Support (ACLS) guideline to the time of access placement was matched between PIV and IO groups. The fact that IO placement can take longer than PIV placement may skew the results in favor of the PIV group. Additionally, IO access was also placed at the discretion of the attending physician, yet there is no guideline mentioned in the article on how the attending physician decided the need for IO placement. Furthermore, humeral placement was only obtained if there was failure or contraindication at the tibial location, but they neither provided the details of those contraindications, nor the total number of patients requiring humeral placement.

All IHCA were responded to by the MET nurses for this study. We are thus eager to know if the time of MET arrival from the time of ACLS initiation, as well as the time elapsed between MET arrival and access placement were recorded for each patient, as these times can vary among patients and compromise the validity of the results.

As per table 1, out of the 1039 patients, 898 had a witnessed cardiac arrest, meaning that 141 didn't have a witnessed arrest. We would like to know if those 141 patients were included in the study. If included, we'd like to know their primary and secondary outcomes compared to the patients with witnessed arrest, especially given the fact that there is a statistically significant difference between the percentage of witnessed arrest in the PIV group compared to the IO group (86.5% vs 80.2%).

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Conflict of Interest

Authors declared that they have no conflict of interest.

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Compliance with Ethics Guidelines

This article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

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