Intensive Care Med
https://doi.org/10.1007/s00134-024-07548-8

CORRESPONDENCE

The choice of resuscitation fluids - Ionic composition matters

Friedrich Mertzlufft[1*], Rolf Zander[2] and George J. Crystal[3]

We read with interest the article by Arabi et al. [1] which introduced clinical practice guidelines relating to the choice of a resuscitation fluid in adult critically ill patients. We applaud the authors for the rigorous methodology that they exercised in evaluating the results of previous findings in arriving at their recommendations. However, we feel that the authors fell short in focusing their guidelines exclusively on differences between a colloid solution (albumin) versus crystalloid solutions with variable tonicities. The impact of variations in the physiological composition of the infused fluid was not considered. This was a glaring omission. In 2022, we and our co-authors, which consisted of international experts in the field, presented theoretical arguments and research findings which demonstrated that the ionic composition of an infused solution can affect cellular metabolism, electrolyte function, and acid–base balance, which can profoundly impact vital organ function and the effectiveness of treatment [2]. We included recommendations to manufacturers for compositional information on labels of intravenous solutions [2, see Table 1]. We believe that recognizing the importance of the ionic composition of the infused fluid would have bolstered the strength and credibility of the guidelines proposed by Arabi et al. [1].

*Correspondence: Fritz.Mertzlufft@evkb.de
[1] From the V. Bodelschwingh Foundation Bethel, University Hospital Bielefeld, Campus Bielefeld-Bethel, Bielefeld University, Maraweg 21, 33617 Bielefeld, Germany
Full author information is available at the end of the article

This comment refers to the article available online at https://doi.org/10.1007/s00134-024-07369-9.

Author details
[1] From the V. Bodelschwingh Foundation Bethel, University Hospital Bielefeld, Campus Bielefeld-Bethel, Bielefeld University, Maraweg 21, 33617 Bielefeld, Germany. [2] Physioklin, Mainz, Germany. [3] Department of Anesthesiology, University of Illinois College of Medicine, Chicago, IL, USA.

Author contribution
All authors contributed to the article conception and design. The first draft of the manuscript was written by FM and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Funding
Open Access funding enabled and organized by Projekt DEAL. Support was provided solely from institutional and departmental sources.

Data availability
Not applicable.

Declarations

Conflicts of interest
None.

Publisher's Note

Accepted: 3 July 2024
Published online: 12 August 2024

References

1. Arabi YM, Belley-Cote E, Carsetti A et al (2024) Intensive Care Med 50:813–831. https://doi.org/10.1007/s00134-024-07369-9
2. Mertzlufft F, Brettner F, Crystal GJ et al (2022) Eur J Anaesthesiol 39:388–407. https://doi.org/10.1097/EJA.0000000000001568