CORRESPONDENCE

Is an intravenous bolus of dexmedetomidine really a safe and effective option in treating shivering following neuraxial anesthesia?

Pradipta Bhakta, MD, DNB, MNAMS, FCAI, EDRA · Habib Md Reazaul Karim, MD, DNB, IDCCM, AIIMS · Michelle Claudio Vassallo, MD, DESA

Received: 7 May 2019 / Revised: 8 May 2019 / Accepted: 8 May 2019 / Published online: 1 July 2019
© Canadian Anesthesiologists' Society 2019

To the Editor,

We recently read the article by Lamontagne *et al.* published in the *Journal*.¹ At the outset, we thank the authors for their elaborate study in finding a potentially safer alternative for the treatment of shivering following neuraxial anesthesia. Nevertheless, we would like to share a few concerns that we have with their study.

Firstly, the authors tested the hypothesis that dexmedetomidine is effective in managing shivering after neuraxial anesthesia without comparing it with existing established treatment options. Accordingly, they cannot claim that dexmedetomidine is safer than other existing therapies without doing any comparative analysis. We believe this is the major limitation in this study.

The authors have used intravenous boluses of dexmedetomidine for the management of shivering, which some may argue are unsafe because of the increased risk of bradycardia (and even cardiac arrest).^{2,3} We suggest that this non-life-threatening complication can be managed with much safer alternatives.⁴ Surprisingly, however, the authors did not find any significant difference

in the incidence of hypotension, bradycardia, and sedation with their use of dexmedetomidine compared with placebo, despite its well-known and recognized complications especially when used as an intravenous bolus.

One widely used and potentially safer alternative in the management of shivering following neuraxial anesthesia is meperidine. We agree that there are concerns and restrictions related to the unnecessary use of opioids (which have their own troublesome side effects), but that should not negate the use of very effective sub-analgesic doses of meperidine to treat shivering, unless the alternative is shown to be safer and/or more effective. In addition, the scarce availability of meperidine in many parts of the world is a concern. Nevertheless, these above concerns should not be the driving force to use a drug in a way that can potentially invite more trouble. Moreover, without doing comparative effectiveness trials, it would be hard to accept that dexmedetomidine is a safer and more effective alternative in this regard; recent meta-analyses also do not support this practice.^{4,5}

Thus, we want to draw attention to these limitations in the study by Lamontagne *et al.* and emphasize that we should be careful in interpreting the outcome and implementing use of dexmedetomidine boluses for treatment of shivering after neuraxial anesthesia.

Conflicts of interest None declared.

Editorial responsibility This submission was handled by Dr. Hilary P. Grocott, Editor-in-Chief, *Canadian Journal of Anesthesia*.

This letter is accompanied by a reply. Please see Can J Anesth; 67: this issue.

P. Bhakta, MD, DNB, MNAMS, FCAI, EDRA (✉)
Department of Anaesthesia and Intensive Care, University
Hospital Limerick, Dooradoyle, Limerick, Ireland
e-mail: bhaktadr@hotmail.com

H. M. R. Karim, MD, DNB, IDCCM, AIIMS
Department of Anaesthesia and Intensive Care, All India
Institute of Medical Sciences, Raipur, India

M. C. Vassallo, MD, DESA
Department of Cardiac Anesthesia and Intensive Care, Luigi
Sacco University Hospital, Milan, Italy

References

1. Lamontagne C, Lesage S, Villeneuve E, Lidzborski E, Derstenfeld A, Crochetière C. Intravenous dexmedetomidine for the treatment of shivering during cesarean delivery under neuraxial anesthesia: a randomized-controlled trial. *Can J Anesth* 2019; DOI: <https://doi.org/10.1007/s12630-019-01354-3>.
2. Bharati S, Pal A, Biswas C, Biswas R. Incidence of cardiac arrest increases with the indiscriminate use of dexmedetomidine: a case series and review of published case reports. *Acta Anaesthesiol Taiwan* 2011; 49: 165-7.
3. Gerlach AT, Murphy CV. Dexmedetomidine-associated bradycardia progressing to pulseless electrical activity: case report and review of the literature. *Pharmacotherapy* 2009; 29: 1492.
4. Liu ZX, Xu FY, Liang X, et al. Efficacy of dexmedetomidine on postoperative shivering: a meta-analysis of clinical trials. *Can J Anesth* 2015; 62: 816-29.
5. Lewis SR, Nicholson A, Smith AF, Alderson P. Alpha-2 adrenergic agonists for the prevention of shivering following general anaesthesia. *Cochrane Database Syst Rev* 2015; 8: CD011107.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.