



# REVISTA BRASILEIRA DE ANESTESIOLOGIA

Official Publication of the Brazilian Society of Anesthesiology  
www.sba.com.br



## LETTERS TO THE EDITOR

### Comparison between continuous thoracic epidural and paravertebral blocks for postoperative analgesia in patients undergoing thoracotomy: meta-analysis of clinical trials<sup>☆</sup>



### Comparaç o entre bloqueios peridural e paravertebral toricos contnuos para analgesia ps-operatria em pacientes submetidos a toracotomias: meta-anlise de ensaios clnicos

Dear Editor,

The article entitled ‘‘Comparison between continuous thoracic epidural and paravertebral blocks for postoperative analgesia in patients undergoing thoracotomy: systematic review’’, recently published in the Journal *Revista Brasileira de Anestesiologia*, brings out the authors’ concern to show the anesthetic therapy effectiveness for treating postoperative pain in chest surgery.<sup>1</sup>

Reading the scientific article arouses great interest in readers, however, some points need consideration: the software used for calculations, the sensitivity analysis method by successive meta-analysis, the use of mixed-effect model analysis, and the search to identify statistical heterogeneity.

The software used for the search was reported in the Method and References, but the latter is incorrect, it is impossible to identify the place where it is available and to have access to the software for future searches similar to this.

Successive meta-analysis was used by the authors at some point of this systematic review execution to perform the sensitivity analysis, however, the outcome of this analysis was not reported in the results or discussion, which did

not clarify its real contribution in this systematic review. This method allows the identification of the likely source of statistical heterogeneity and the exclusion or not of the included article, in an attempt to consolidate the results.<sup>2</sup>

According to the authors, the models of random and fixed effect were used for meta-analysis calculation; however, the random model was chosen to calculate the meta-analysis whenever  $I^2$  was greater than 30%. In the analysis of variables ‘‘assessment of pain at rest after 24 hours’’ and ‘‘incidence of hypotension’’, the value of  $I^2$  was lower than that proposed by the authors, not matching the research method description, and also describing the results by the method of random effect instead of fixed effect. The article report does not allow identifying whether this description of the results was due to the authors’ consensual decision or a flaw in the research.

The authors considered the presence of heterogeneity as a research bias when they reported ‘‘(. . .) these results may have been biased by the included studies heterogeneity’’; however, the presence of heterogeneity does not indicate bias in a systematic review. Tests for heterogeneity are used to determine whether differences between the included studies are genuine (heterogeneity) or if it occurred randomly during the analysis (homogeneity).<sup>3</sup> If the differences occurred randomly, the results found in systematic reviews have more credibility, and if heterogeneity is found, the reasons should be carefully evaluated by the authors to consolidate their results and not only be considered a research bias.

It was noted that the statistical heterogeneity, which is present in most analyzes, was underexploited by the authors, and it is possible to disagree with part of their conclusion: ‘‘From this systematic review, it is clear that epidural analgesia is associated with a higher incidence of arterial hypotension and urinary retention when it is used for pain control after thoracotomy in adult patients, with evidence level 1A’’, as level 1A requires minimal or absent heterogeneity or that heterogeneities are properly explored while conducting a systematic review.

In short, I congratulate the authors for the article, which brings important results for understanding postoperative pain in thoracic surgery. Conclusions of systematic reviews are less incisive regarding the clinical significance of their results when those of the included studies differ from each other.<sup>3</sup>

DOI of original article: <http://dx.doi.org/10.1016/j.bjane.2013.10.002>

<sup>☆</sup> Research center: Universidade Federal de Alagoas, Maceio, AL, Brazil.

## Conflicts of interest

The authors declare no conflicts of interest.

## References

1. Júnior A de P, Erdmann TR, Santos TV, et al. Comparação entre bloqueios peridural e paravertebral torácicos contínuos para analgesia pós-operatória em pacientes submetidos a toracotomias: revisão sistemática. *Rev Bras Anesthesiol.* 2013;63: 433–42.
2. Bueno NB. Explorando a heterogeneidade. In: Barbosa FT, editor. *Introdução à Revisão Sistemática: a Pesquisa do Futuro.* 2013, available at: <http://bit.ly/lrs01> [accessed 2.1.14].
3. Higgins JP, Thompson SG, Deeks JJ, et al. Measuring inconsistency in metaanalyses. *BMJ.* 2003;327:557–60.

Fabiano Timbó Barbosa<sup>a,\*</sup>,  
Tatiana Rosa Bezerra Wanderley Barbosa<sup>b</sup>,  
Rafael Martins da Cunha<sup>c</sup>

<sup>a</sup> *Universidade Federal de Alagoas, Maceió, AL, Brazil*

<sup>b</sup> *Centro Universitário Uniseb Interativo, Maceió, AL, Brazil*

<sup>c</sup> *Hospital Unimed, Maceió, Maceió, AL, Brazil*

\* Corresponding author.

*E-mail:* [fabianotimbo@yahoo.com.br](mailto:fabianotimbo@yahoo.com.br) (F.T. Barbosa).

Available online 30 July 2014

<http://dx.doi.org/10.1016/j.bjane.2014.03.009>

---