

anesthesia to ablate the rise in pulmonary vascular resistance associated with surgical stimuli is one of the primary goals in anesthesia management of these patients, what was the reason to use sevoflurane as a sole anesthetic agent in a cardiac patient with persistent pulmonary hypertension, if early postoperative extubation was not planned?

### Conflicts of interest

The authors declare no conflicts of interest.

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## Effects of lidocaine and magnesium sulfate in attenuating hemodynamic response to orotracheal intubation: a single-center, prospective, double blind, randomized study



### Os efeitos da lidocaína e do sulfato de magnésio na atenuação da resposta hemodinâmica à intubação orotraqueal: estudo unicêntrico, prospectivo, duplamente encoberto e aleatorizado

Dear Editor,

It was with great pleasure that I read the article “Effects of lidocaine and magnesium sulfate in attenuating hemodynamic response to orotracheal intubation: a single-center, prospective, double blind, randomized study”.<sup>1</sup> Concerned to clarify some points related to the statistical analysis and conclusion; here are some considerations to the authors:

1. The authors report a discrete statistical difference and this does not allow the article’s reader to come to conclusions: “There was a statistically significant increase in SBP ( $p=0.018$ ) and DBP ( $p=0.0467$ ) values measured post-TI (Fig. 2), but of little clinical importance”. The values should have been demonstrated in text because, as shown in Fig. 2, it is not possible to capture its

magnitude, so that the lack of clinical importance does not represent absence of biological relevance;

2. The data were partially or totally analyzed over time, and the patients were also submitted to anesthetics in addition to the medications tested, which may be in addition or not. It is known that magnesium sulfate has a prolonged clinical effect after venous use, whereas lidocaine has a short protective effect compared to magnesium. Thus, there are two factors that must be considered in this statistical analysis: time and treatment. The best statistical test to perform in this situation is two-way ANOVA.<sup>2</sup> The results analyzed as they are in the text may be erroneously positive and the possibility of a type I error in this research is clearly perceived;
3. If the authors consider the use of the Student’s *t* test as correct, or more appropriately in some cases the Mann–Whitney *U* test, according to the text, they should have corrected the *p* value with the procedure for multiple correction of hypothesis tests, instead of considering only 5% as the level of significance in all analyzes. The possibility of having a positive result in the statistical analysis occurring at random is 5%. The *p*-value correction would have reduced the probability of a random occurrence of the statistical result. Thus, the possibility of type I error in this research is clear;
4. The objective described by the authors was “to compare the effects of intravenous administration of magnesium sulfate versus lidocaine on this reflex hemodynamics after laryngoscopy and orotracheal intubation”. The authors’ conclusion was “magnesium sulfate and lidocaine have good efficacy and safety in hemodynamic control during laryngoscopy and intubation”, which is not in line with the proposed objective. It is necessary that the authors relate what were the efficacy variables and also the safety variables so that the conclusion is better understood. Noteworthy, the term *efficacy* should generally be used in research whose execution conditions are ideal, as with laboratory studies. This term should

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also be reviewed by the authors, *effectiveness* is the term suggested;

5. Finally, I leave as a recommendation the observation to the authors that there are larger doses, equally safe and equally effective, that could have been tested in this clinical trial and increased the degree of information related to the topic.<sup>3</sup>

I congratulate the authors for the brilliant initiative, while celebrating at the same time the possibility of creating this line of research in anesthesia in Brazil. Thank you for the opportunity to contribute to this topic.

### Conflicts of interest

The author declares no conflicts of interest.

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## Reply to the letter to the Editor<sup>☆</sup>



### Resposta à carta ao Editor

Dear Editor,

We thank Barbosa's<sup>1</sup> letter in which he appreciates our work and praises the study "Effects of lidocaine and magnesium sulfate in attenuating hemodynamic response to orotracheal intubation: a single-center, prospective, double-blind, randomized study" carried out in our service.<sup>2</sup> For us, author and author's guest to write this replay, it is only fair that we respond with attention to all questions, within our limitations:

- (1) Question: The authors refer to a discrete statistical difference, which does not allow the reader to draw his own conclusions: "Group M had a statistically significant increase in SBP ( $p=0.018$ ) and DBP ( $p=0.0467$ ) post-OTI (Fig. 2), but of little clinical importance." The values should be demonstrated in text because, as it is in Figure 2, it is not possible to capture the magnitude of them, so that the lack of clinical importance does not represent absence of biological relevance.

Regarding Item 1, it was really flawed, but not intentional, on our part to omit these data. The missing data are on Table 1.

- (2) Question: Data were, in part or in whole, analyzed over time and patients also received anesthetics, in addition to the medications tested, which may be additional or not. It is known that magnesium sulfate has a prolonged clinical effect after venous use, whereas lidocaine has a

**Table 1** Comparison of the mean  $\pm$  standard deviation of blood pressure in mmHg at the different times of the study.

SBP	Group L	Group M	p-Value
Admission	139 $\pm$ 19.1	137.7 $\pm$ 17.7	0.8072
Post-MDZ	119.9 $\pm$ 15.5	123.5 $\pm$ 14.3	0.4055
CIP end	122.9 $\pm$ 17.7	120.9 $\pm$ 16.6	0.6657
Post-IND	90.9 $\pm$ 16.1	96.5 $\pm$ 16.3	0.1912
Post-OTI	119.5 $\pm$ 24.6	134 $\pm$ 24.6	0.0180 <sup>a</sup>
3' Post-OTI	108.1 $\pm$ 22.3	116.2 $\pm$ 16.2	0.1482
6' Post-OTI	96.8 $\pm$ 17.3	105.9 $\pm$ 16.2	0.0520
DBP	Group L	Group M	p-Value
Admission	85.7 $\pm$ 12.6	84.6 $\pm$ 11.5	0.7680
Post-MDZ	75.4 $\pm$ 10.7	77.7 $\pm$ 10.2	0.4473
CIP end	79.6 $\pm$ 11.8	75.2 $\pm$ 15.1	0.2646
Post-IND	55.1 $\pm$ 11	57.3 $\pm$ 11.3	0.4956
Post-OTI	77 $\pm$ 19.9	87.4 $\pm$ 15.2	0.0467 <sup>a</sup>
3' Post-OTI	68.1 $\pm$ 18.3	70.4 $\pm$ 12.8	0.6189
6' Post-OTI	59.6 $\pm$ 14.9	62.1 $\pm$ 11.6	0.5192

SBP, systolic blood pressure; MDZ, midazolam; CIP, continuous infusion pump; IND, induction (of anesthesia); OTI, orotracheal intubation; DBP, diastolic blood pressure.

<sup>a</sup> Statistically significant.

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<sup>☆</sup> Author's reply to the Letter to the Editor: Effects of lidocaine and magnesium sulfate in attenuating hemodynamic response to orotracheal intubation: a single-center, prospective, double-blind, randomized study.