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Letters to the Editor

Letter to the Editor

About the neuroprotective effects of FK-506, L-carnitine and azathioprine on spinal cord ischemia-reperfusion injury

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I read with interest the article of Akgun et al. [1] about the neuroprotective effects of FK-506, L-carnitine and azathioprine on spinal cord ischemia-reperfusion injury.

Although this paper has reproduced in part the work done by myself and other authors and published 2 years ago [2], I have major concerns about the validity of that study. Thus, the rats have not been ventilated throughout the surgical procedure and there is no mention of oxygen saturation recorded in any part of the text, therefore I wonder whether the spinal cord injury might have been related to hypoxia rather than ischemia. Moreover, all rats have been anesthetized with ketamine, a well-known neuroprotective agent that can mitigate the effects of other neuroprotective drugs [3]. Therefore, the conclusion that FK-506, L-carnitine and azathioprine improve neurological outcome after transient spinal cord ischemia is not supported by that experiment.

As the authors state that two catheters were placed into the aorta and femoral arteries to monitor proximal and distal aortic blood pressures, it is difficult for me to understand how they could manage to place vascular clamps on the abdominal aorta and aortic bifurcation with the catheters in. Was the supra-renal aorta catheterized through midline laparotomy?

Regarding the histopathological analysis, it is not clear whether most of spinal cord injury in control animals was due to necrotic or apoptotic cell death. In this type of animal model, most neurons in central gray matter die through a necrotic process rather than by apoptosis. That study differs from most other published in the literature since more than 75% of neurons died apparently from apoptosis. As most of spinal cord damage was due to apoptosis in this study, it would have been interesting to evaluate neurological status after 4 or 5 days, because FK-506, L-carnitine and azathioprine might just have delayed spinal cord injury, as it has been reported with ketamine pre-treatment [3].

Finally, I would like to remember the authors of this article that plagiarism is not permitted by the European Association of Cardio-thoracic Surgery and I was surprised to find a paragraph in their discussion copied word for word from one article published by myself and collaborators in Anesthesia and Analgesia in 2001 [2].

References

[1] Akgun S, Tekeli A, Kurtkaya O, Civelek A, Isbir SC, Ak K, Arsan S, Sav A. Neuroprotective effects of FK-506, L-carnitine and azathioprine on spinal cord ischemia-reperfusion injury. Eur J Cardiothorac Surg 2004;25:105–10.
[2] Lang-Lazdunski L, Heurteaux C, Dupont H, Rouelle D, Widmann C, Mantz J. The effects of FK506 on neurologic and histopathologic outcome after transient spinal cord ischemia induced by aortic cross-clamping in rats. Anesth Analg 2001;92:1237–44.
[3] Naslund TC, Hollier LH, Money SR, Facundus EC, Skenderis BS. Protecting the ischemic spinal cord during aortic cross-clamping. The influence of anesthetics and hypothermia. Ann Surg 1992;215:409–15.

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Reply to the Letter to the Editor

Reply to Lang-Lazdunski

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We thank Dr Lang-Lazdunski for his comments and concerns regarding our article [1]. We are familiar with the valuable research articles of Dr Lang-Lazdunski about spinal cord protection. As a matter of fact we cited his article in our manuscript [2]. However, we tried to compare the effects of two new agents which had not been studied