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LETTER TO THE EDITOR

In reply: Is propofol more neurotoxic in the developing brain?

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To the Editor:

We thank Drs. Yu and Sun for their interest and comments regarding our recent manuscript [1]. First, we do not know whether the combination of intravenous anesthetics and sevoflurane induces disturbances in oxygenation and circulation that cannot be monitored by SpO_2 and CBF monitoring systems. However, we believe that the degree of hypoxia and hemodynamic instability that such monitoring systems cannot detect is unlikely to influence the survival of neural cells.

Second, while MAC determination for volatile anesthetics is possible in immature mice, the same would be much more difficult for intravenous anesthetics, because a constant plasma and brain concentration would have to be achieved in order to do so. In our study, 10 mg/kg of propofol and 5 mg/kg of thiopental produced a similar degree of anesthetic depth (transient sluggishness). Therefore, the doses of both anesthetics are speculated to be approximately equipotent in immature mice.

Conflict of interest None.

Reference

1. Tagawa T, Sakuraba S, Kimura K, Mizoguchi A. Sevoflurane in combination with propofol, not thiopental, induces a more robust neuroapoptosis than sevoflurane alone in the neonatal mouse brain. J Anesth. 2014. doi:10.1007//s00540-014-1822-x.

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