Reply to the letter

Takahiro Tamura¹ · Atsushi Mori² · Kimitoshi Nishiwaki¹

Received: 14 December 2020 / Accepted: 18 December 2020 / Published online: 8 January 2021
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To the Editor:

We appreciate your letter regarding our article [1]. The comments include meaningful suggestions for future studies. We agree with your concern to have larger samples set at different timepoints during cardiopulmonary bypass (CPB). In the present experiment, after starting CPB, we set only one or two timepoints in each case to measure the blood concentration of volatile anesthetics (VAs), as we thought that they were statistically sufficient to evaluate the quality of the four oxygenators. We concluded that the blood concentrations of desflurane and sevoflurane passing through oxygenators during CPB 20 min after starting VA inhalation were similar to those in the human lungs used as controls. In the next step, we plan to observe chronological changes, and have already started large-scale clinical trials in this regard.

The cardioprotective mechanism of isoflurane and changes in its concentration during CPB are expected to be similar to those of sevoflurane and desflurane [2, 3]. We used sevoflurane and desflurane as VAs, as the clinical use

of isoflurane is steadily decreasing, although isoflurane is cheaper than other VAs (Supplementary Table 1).

In the future, we hope to report the detailed chronological changes in sevoflurane and desflurane blood concentrations in the perioperative period of CPB.

References

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

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s00540-020-02892-7>.

This reply refers to the comment available online at <https://doi.org/10.1007/s00540-020-02890-9>.

✉ Takahiro Tamura
takahiro@med.nagoya-u.ac.jp

¹ Department of Anesthesiology, Nagoya University
Graduate School of Medicine, 65 Tsurumai-cho, Showa-Ku,
Nagoya 466-8550, Japan

² Department of Perioperative Management System, Nagoya
University Graduate School of Medicine, Nagoya, Japan