



## Reply to a letter

Daichi Fujimoto<sup>1</sup> · Norihiko Obata<sup>1</sup> · Satoshi Mizobuchi<sup>1</sup>

Received: 17 October 2024 / Accepted: 17 October 2024 / Published online: 4 November 2024  
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We are grateful to Li and Chen for their interest in our research [1] and for providing very valuable comments [2]. The comments highlighted are important, and we agree that further investigation is warranted.

Firstly, regarding the omission of univariate analysis, it is recommended in the STROBE guidelines' Explanation and Elaboration document [3] that confounding factors be selected on the basis of medical background information when adding explanatory variables to multivariate regression models. Additionally, another study showed that using results from univariate analyses is not an effective method for selecting confounding factors [4]. Furthermore, risk factors for postoperative delirium have been extensively studied [5]. Therefore, we did not conduct a univariate analysis. Instead, confounding factors that have been previously reported, that can be collected, and that are likely to be confounding factors for delirium in this cohort were preselected.

As noted, factors including hypertension, history of alcohol consumption, and nutritional status etc. are recognized as risk factors for delirium. If the sample size had been larger, the inclusion of these factors in multivariate analysis could have facilitated a more accurate evaluation.

Next, regarding agitation, it is well established that inhalational anesthetics can provoke agitation in the immediate postoperative period [7]. There are concerns that this effect may have influenced the results of the study. In paragraph 3 of the "Interpretation of the Results" section, agitation is discussed as a "delirium-like mental status" [1]. Given the potential impact of agitation induced by inhalational anesthetics, a comparison with propofol would likely have been more appropriate. In future studies, not only a comparison of remimazolam with propofol but also assessment

of postoperative agitation using a prospective design will be performed.

Conducting a subgroup analysis may yield more insightful results. However, in the current study, the sample size of the remimazolam group was too small to facilitate such an analysis. Further research with a larger cohort of remimazolam users is warranted, and the valuable suggestions provided are appreciated.

Finally, we are considering propensity score matching and conducting a future study. We greatly appreciate this important suggestion for improving our study [2].

**Acknowledgements** No assistance with this study

**Funding** None.

**Declarations**

**Conflict of interest** None.

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This reply refers to the comment available online at <https://doi.org/10.1007/s00540-024-03414-5>.

✉ Daichi Fujimoto  
jawfish.mania@gmail.com

<sup>1</sup> Department of Anesthesiology, Kobe University Hospital, Kobe, Japan

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