Response to a letter to the editor by Jia and Teng: remimazolam and postoperative delirium in older adults undergoing elective cardiovascular surgery

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To the Editor:

We appreciate the comments from Jia and Teng on our recently published article entitled "Association between remimazolam and postoperative delirium in older adults undergoing elective cardiovascular surgery: a prospective cohort study" [1,2]. Reporting this observational study was intended to provide the earliest clinical evidence of the effects of remimazolam on cognitive function. However, we agree that the findings of our study alone do not determine the effects of remimazolam on cognitive function and that additional research is needed.

Jia and Teng mention that our study contained an element of bias [1], citing a retrospective cohort study of the incidence of and risk factors for early delirium after cardiac surgery [3]. We disagree with their opinion. Even in the study cited by Jia and Teng, delirium was monitored for 5 days postoperatively, which is consistent with the primary endpoint of our study. We chose 5 days to be consistent with a previously reported randomized controlled trial [4]. Moreover, the primary endpoint in an ongoing randomized controlled trial of remimazolam is delirium within the first 5 postoperative days [5]. The previously reported randomized controlled trial showed that after adjusting for baseline differences, the difference in the mean Mini-Mental State Examination score between patients who developed postoperative delirium and those who did not was significant at 30 days postoperatively [4]. However, the average length of stay was 17–20 days in our study, making 30 days of follow-up for delirium difficult. Furthermore, evaluation of delirium over a long period may be influenced by systemic factors, such as complications unrelated to the choice of anesthetic. Therefore, we believe that it was reasonable to assess delirium during the first 5 postoperative days and do not accept that this setting would have been a source of bias in our study.

Jia and Teng also comment that our study paves the way for further research on the impact of remimazolam on cognitive function [1]. How to assess cognitive function is a matter of debate. Based on a previous report [4], we used the Mini-Mental State Examination to assess cognitive function in our patients. However, a recently published randomized trial compared the effect of remimazolam on the quality of recovery-15 score with that of propofol [6]. Patient-reported outcomes after cardiac surgery, such as survival status at home and quality of life, have also been investigated [7]. As a topic for future research, it may be appropriate to consider measures such as quality of life as patient-centered outcomes rather than investigating the patient's cognitive function in isolation. We look forward to high-quality studies reporting on how remimazolam affects patient outcomes, including postoperative delirium.

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