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LETTER

Comment on "Use of Oral Celecoxib Preoperatively Reduces Risk of Delirium and Favors Functional Recovery in Elderly Patients with Femoral Neck Fracture: A Propensity Score-Matched Analysis" [Letter]

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Dear editor

We recently read with great interest the article entitled "Use of Oral Celecoxib Preoperatively Reduces Risk of Delirium and Favors Functional Recovery in Elderly Patients with Femoral Neck Fracture: A Propensity Score-Matched Analysis" authored by Ju et al.[1] Postoperative delirium (POD) is a common postoperative complication in elderly patients, which can prolong the patient's hospital stay and increase the risk of poor prognosis. Ju et al found that the preoperative use of oral celecoxib can significantly reduce the incidence of POD in elderly patients, providing valuable insights into the drug prophylaxis of POD. However, we do have a few reservations and suggestions to add.

Firstly, in Figure 1, the authors presented the patient enrollment process, where 78 patients were excluded due to being younger than 65 years old. However, in the inclusion criteria mentioned above, the age criterion was set at older than 60 years, and in Table 1, which displayed the baseline characteristics of the included patients, the age group of 60–69 years was shown. Therefore, we suspect that the authors mistakenly wrote "65" instead of "60" in Figure 1. Additionally, in the "Data Collection" section, "body mass index" and "BMI" were separated by a comma as two individual characteristics, even though they are the same.

Secondly, while the study controlled for confounding variables such as age, gender, and residence, other confounders are also worth considering. One is the patient's preoperative nutritional status. A recent meta-analysis showed that patients with malnutrition or at risk of malnutrition have respectively 1.88 times and 2.37 times increased risk of POD compared to those with normal nutrition.[2] This might be attributed to malnutrition affecting brain nutrient supply and neural transmission, thereby increasing the risk of POD. Another factor is the delirium history of patients, which has been identified as the strongest predictor of POD in hip fracture patients.[3] We recommend considering these two factors in future research to eliminate potential confounding effects on the study results.

Finally, although the study demonstrated the promising result that preoperative oral celecoxib can minimize delirium in elderly patients, there were few studies on its underlying mechanisms. Current studies suggest that surgical anaesthesia and trauma can induce neuroinflammation, which triggers the release of pro-inflammatory factors in the brain tissue, causing central nerve damage and leading to the occurrence of POD.[4] As a cyclooxygenase(COX)-2 inhibitor, celecoxib is speculated to reduce POD by inhibiting oxidative stress and inflammatory responses.[5] It is recommended to monitor the levels of inflammatory markers (eg, CRP, IL-6), nerve injury-related factors (eg, S-100β), and antioxidant factors (eg, HO-1) in the perioperative period to investigate the potential mechanisms by which celecoxib lowers the incidence of POD.

In conclusion, we are grateful to Ju et al for identifying the preventive potential of oral celecoxib in POD in elderly fracture patients, and we hope that the points discussed here will contribute to future research.

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Disclosure

The authors report no conflicts of interest in this communication.

References

1. Ju M, Han X, He L, et al. Use of oral celecoxib preoperatively reduces risk of delirium and favors functional recovery in elderly patients with femoral neck fracture: a propensity score-matched analysis. *J Pain Res*. 2025;18:709–717. doi:10.2147/JPR.S507116
2. Li F, Li NY, Shao MZ. Impact of preoperative malnutrition on postoperative delirium incidence in elderly surgical patients: a Meta-analysis. *Chin Evid Based Nurs*. 2024;10(23):4203–4209. doi:10.12102/ji.ssn.2095-8668.2024.23.004
3. Kim EM, Li G, Kim M. Development of a risk score to predict postoperative delirium in patients with hip fracture. *Anesth Analg*. 2020;130(1):79–86. doi:10.1213/ANE.0000000000004386
4. Xiao MZ, Liu CX, Zhou LG, Yang Y, Wang Y. Postoperative delirium, neuroinflammation, and influencing factors of postoperative delirium: a review. *Medicine*. 2023;102(8):e32991. doi:10.1097/MD.0000000000032991
5. Kim SY, Na HS, Ryu JH, Shin HJ. The effect of non-steroidal anti-inflammatory drugs on postoperative delirium: a meta-analysis. *Korean J Anesthesiol*. 2024;77(5):546–554. doi:10.4097/kja.24325

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