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LETTER

# Dynamic Inflammatory and Nutritional Profiles in Preoperative Risk Stratification for Elderly Patients [Letter]

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## Dear editor

We read with great interest the recent article by Fang et al titled Association of Preoperative High C-Reactive Protein to Albumin Ratio with Adverse Outcomes After Elective Non-Cardiac Surgery in Older Patients: A Multicenter Prospective Study published in Journal of Inflammation Research.[1] The study provides valuable insights into the relationship between preoperative C-Reactive Protein to Albumin Ratio (CAR) and adverse postoperative outcomes in older patients undergoing non-cardiac surgery. While the findings are compelling, we believe there are several aspects that warrant further discussion.

Firstly, the study demonstrates a significant association between high preoperative CAR and increased risk of Clavien-Dindo grade III (CD3) complications, overall morbidity, and reoperation. However, the study relies on a single preoperative measurement of CAR, which may not fully capture the dynamic nature of inflammation and nutritional status in older patients. Inflammatory markers such as C-Reactive Protein (CRP) and Albumin (ALB) can fluctuate over time, particularly in the context of chronic diseases and acute surgical stress.[2] Therefore, a single measurement may not accurately reflect the patient's true inflammatory and nutritional status. Future studies should consider repeated measurements of CAR to better understand its temporal relationship with postoperative outcomes.

Secondly, the study's primary outcome, CD3 complications, is based on the Clavien-Dindo classification system, which is a widely accepted standard for grading surgical complications.[3] However, the study did not provide detailed information on the specific types of CD3 complications encountered. This lack of granularity limits the ability to identify specific risk factors and potential interventions that could mitigate these complications. For instance, CD3 complications encompass a wide range of severe adverse events, including organ failure and major infections. A more detailed breakdown of these complications would enhance the clinical relevance of the findings.

Thirdly, the study utilized multivariate logistic regression and restricted cubic spline analysis to explore the relationship between CAR and adverse outcomes. While these methods are robust, the study did not account for potential interactions between CAR and other covariates, such as comorbidities, nutritional status, and surgical factors. For example, the presence of chronic low-grade inflammation in older patients may interact with CAR to influence postoperative outcomes.[4] Exploring these interactions could provide deeper insights into the mechanisms underlying the observed associations.

Lastly, the study population was limited to older patients in China, which may affect the generalizability of the findings to other populations or regions. Given the global variation in healthcare systems, surgical practices, and patient demographics, future studies should aim to validate these findings in diverse populations to ensure their broader applicability.

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In conclusion, the study by Fang et al provides important evidence linking preoperative CAR with adverse postoperative outcomes in older patients. However, addressing the limitations mentioned above in future research will be crucial for establishing CAR as a reliable biomarker for preoperative risk assessment and guiding clinical interventions.

## Disclosure

The authors report no conflicts of interest in this communication.

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