



Impact of perioperative blood transfusion on elderly gastric cancer patients

Mingyu Zhang¹, Qingbo Feng², Maijian Wang²

¹Department of General Surgery, Dejiang County People's Hospital, Tongren, China; ²Department of General Surgery, Digestive Disease Hospital, Affiliated Hospital of Zunyi Medical University, Zunyi, China

Correspondence to: Maijian Wang, MD. Department of General Surgery, Digestive Disease Hospital, Affiliated Hospital of Zunyi Medical University, 149 Dalian Road, Huichuan District, Zunyi 563000, China. Email: 864205468@qq.com.

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The retrospective study by Liu *et al.* provides valuable insights into the impact of perioperative blood transfusion (BTF) on complications and prognosis in elderly patients undergoing radical gastrectomy for gastric cancer. The study, encompassing 1,666 cases from a single center, sheds light on an area of controversy in gastric cancer management, particularly for the elderly population (1).

The key findings revealed that perioperative BTF was associated with an elevated incidence of postoperative fever but had no significant effect on other complications. Importantly, BTF was not found to be an independent risk factor affecting the postoperative prognosis of elderly patients with gastric cancer. These findings challenge previous studies that suggested a detrimental effect of BTF on survival outcomes (2,3). The significance of this study lies on its focus on the elderly patient population, who often present with unique clinical challenges. By excluding patients with certain comorbidities or emergency surgeries, the study ensures a more homogenous cohort, enabling a more precise analysis of the effects of BTF. The results of this study have important implications for clinical practice. Firstly, it is suggested that for elderly patients undergoing radical gastrectomy, perioperative BTF may not be as detrimental to outcomes as previously thought. This could potentially influence transfusion thresholds and protocols in this patient population. Secondly, the finding that BTF increases the risk of postoperative fever highlights the need for close monitoring and prompt management of fever in transfused patients. This is particularly important for the elderly, who may be more vulnerable to complications

associated with fever. Although the study presents novel content, there are some shortcomings that need to be addressed.

Firstly, the retrospective design of the study introduces potential biases, such as selection bias and information bias. These biases can affect the accuracy and reliability of the data, limiting the study's conclusions. To address this, a multi-center study with a larger sample size would be beneficial to obtain higher-level evidence.

Secondly, the lack of randomization in patient allocation to transfusion and non-transfusion groups poses a challenge. Without randomization, potential confounders may not be evenly distributed between the groups, affecting the validity of comparisons.

Thirdly, the limited follow-up period of 51 months may be insufficient for assessing long-term outcomes, especially in patients with a favorable prognosis. A longer follow-up would provide a more accurate picture of the long-term effects of perioperative BTF.

Fourthly, some patients included in the study received platelet or plasma transfusions concurrently with BTFs, but the effects of transfused volumes and components on prognosis were not further investigated through a stratified analysis. A stratified analysis taking into account of these variables could provide more insight into the association between perioperative BTF and prognosis.

Finally, the article did not distinguish between surgical methods such as open surgery or laparoscopic surgery, which generally have different levels of intraoperative blood loss, with laparoscopic surgery tending to have less

blood loss compared to open surgery. Further comparison of perioperative BTF outcomes based on the similarities and differences in surgical methods should be conducted in future studies.

To improve the study, the following measures could be considered:

Firstly, conducting a multi-center study would increase the sample size and reduce the potential bias associated with a single-center study. This would allow for a more comprehensive evaluation of the effects of perioperative BTF on complications and prognosis.

Secondly, performing a stratified analysis to investigate the effects of transfused volumes and components on prognosis could provide further clarity on the relationship between BTF and patient outcomes. This would help identify subgroups of patients who may benefit or be harmed by BTFs, enabling more targeted transfusion practices.

In conclusion, the study by Liu *et al.* provides valuable evidence on the impact of perioperative BTF on elderly patients undergoing radical gastrectomy. While BTF was associated with an increased risk of postoperative fever, it was not found to be an independent risk factor affecting prognosis. The findings have important implications for clinical practice and future research in this area.

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Footnote

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