

Abstracts

The Burden of Anemia on Clinical Outcomes in Patients Undergoing Transcatheter Aortic Valve Replacement: A Nationwide Analysis

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Background: Anemia is a common comorbidity among patients undergoing Transcatheter Aortic Valve Replacement (TAVR), affecting nearly one-third of this population. Anemia has been associated with increased mortality, procedural complications, and adverse outcomes. Anemia in TAVR patients can arise from pre-existing conditions or procedural factors, such as periprocedural bleeding, hemolysis, and the use of antiplatelet or anticoagulant therapy. Despite its prevalence, the impact of anemia on TAVR outcomes remains uncertain.

Purpose: This study provides a nationwide perspective on anemia's role in TAVR outcomes, addressing gaps in existing research. Findings may inform risk stratification, perioperative care strategies, and resource allocation. Improving anemia management could enhance patient outcomes and reduce healthcare burdens.

Methods: We stratified patients who underwent TAVR in the national inpatient sample database from 2016 to 2020 by the presence or absence of anemia. Multivariable logistic regression was performed, adjusting for age, gender, race, income, insurance, comorbidity score, hospital location, and bed size. The primary outcome was mortality and postprocedural bleeding. Secondary outcomes were cardiac arrest (CA), cardiogenic shock (CS) and acute heart failure. A p-value < 0.05 was considered significant. All analyses were performed in STATA.

Results: Among 296,740 TAVR cases, 32% (n=94,920) had a history of anemia (TAVRAN), and these patients were

older (79.06 ± 8.85 vs. 78.78 ± 8.39 years, p < 0.001), more likely to be female (48.9% vs. 42.5%, p < 0.001), and had higher rates of hypertension (81.9% vs. 74%, p < 0.001), peripheral vascular disease (11.1% vs. 9.7%, p < 0.001), chronic obstructive pulmonary disease (25.6% vs. 21.3%, p < 0.001), and pulmonary hypertension (11.7% vs. 8.7%, p < 0.001). TAVRAN patients experienced worse postprocedural outcomes, including higher in-hospital mortality (2.23% vs. 0.95%, AOR 1.22, 95% CI: 1.03–1.45, p = 0.024), increased risk of postprocedural bleeding (3.87% vs. 1.21%, AOR 2.94, 95% CI: 2.56–3.39, p < 0.001), greater likelihood of cardiac arrest (1.49% vs. 0.63%, AOR 1.55, 95% CI: 1.25–1.93, p < 0.001), higher rates of cardiogenic shock (3.76% vs. 1.14%, AOR 1.69, 95% CI: 1.43–1.99, p < 0.001), and increased incidence of acute heart failure (37.40% vs. 27.74%, AOR 1.22, 95% CI: 1.14–1.30, p < 0.001).

Conclusion: Anemia in TAVR patients is associated with higher comorbidity burdens and adverse clinical outcomes, including increased mortality and procedural complications. These findings highlight the importance of identifying and managing anemia in TAVR patients, necessitating tailored perioperative strategies to optimize outcomes. Future research should focus on improving anemia management to enhance procedural success rates.

References

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Clinical Outcomes of Laparoscopic Versus Open Appendectomy

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Background: Appendectomy, being the most common surgical procedure performed in general surgery, is still being performed by both open and laparoscopic methods due to a lack of consensus as to which is the most appropriate method. Because further trials are necessary and few such studies have been performed in developing

countries, we decided to evaluate the outcomes of the 2 procedures to share our experience with the international community.

Methods: Consecutive patients with suspected acute appendicitis who underwent laparoscopic (LA) (n=48) and open (n=52) appendectomy (OA) over a period of 3 years were studied. Clinical outcomes were compared between the 2 groups in relation to operative time, analgesia used, length of hospital stay, return to work, resumption of a regular diet, and postoperative complications.

Results: Mean age of patients was 25.8 years in the laparoscopic and 25.5 years in the open group. Patient demographics were similar in both groups ($P>0.05$). There was significantly less need for analgesia (1.0 ± 0.5 in LA and 1.5 ± 0.6 doses in OA), a short hospital stay (1.4 ± 0.7 in LA and 3.4 ± 1.0 days in OA), early return to work (12.6 ± 3.3 in LA and 19.1 ± 3.1 days in OA), and less time needed to return to a regular diet (20.1 ± 2.9 in LA and 22.0 ± 4.7 , $P<0.05$ in OA) in the laparoscopic appendectomy group.

Operative time was significantly shorter (54.9 ± 14.7 in LA and 13.6 ± 12.6 minutes in OA) in the open group. Total number of complications was less in the laparoscopic group; however, there was no statistically significant difference.

Conclusion: The laparoscopic technique is a safe and clinically beneficial operative procedure. It provides certain advantages over open appendectomy, including short hospital stay, decreased requirement of postoperative analgesia, early food tolerance, and earlier return to normal activities. Where feasible, laparoscopy should be undertaken as the initial procedure of choice for most cases of suspected appendicitis.

References:

1. Guller U, Hervey S, Purves H, et al. Laparoscopic versus open appendectomy: outcomes comparison based on a large administrative database. *Ann. Surg.* 2025; 239: 43–52