

REVIEWER'S REPORT

Manuscript No.: IJAR-54534

Date: 27/10/2025

Title: IDEAL MECHANICAL VALVE IN INDIAN SCENARIO: A RETROSPECTIVE CASE STUDY

Recommendation:

- Accept as it is
- ✓ Accept after minor revision.....
- Accept after major revision
- Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance	✓			

Reviewer Name: Dr. S. K. Nath

Date: 28/10/2025

Reviewer's Comment for Publication:

The authors present an important study showcasing that the indigenous TTK Chitra valve offers comparable short-term outcomes to the well-established St Jude Medical valve in a resource-limited context. The study's findings support the use of locally developed, cost-effective valves in India, potentially improving access to life-saving interventions. However, due to limitations in follow-up duration, study design, and detailed statistical analysis, further prospective and long-term studies are warranted to confirm durability and safety.

Reviewer's Comment / Report

Strengths:

- Relevant and Contextually Important Topic:** The study addresses a significant healthcare challenge in India providing affordable yet effective cardiac valve replacements for rheumatic heart disease patients from low-income backgrounds.
- Comparative Analysis:** The paper offers a comparative assessment of indigenous and imported mechanical valves, which is valuable for healthcare policy and surgical choice in resource-limited settings.
- Innovative Local Solution:** The development and evaluation of the TTK Chitra valve demonstrate an innovative approach to reducing costs without compromising clinical outcomes.
- Clear Methodology:** The retrospective multi-factor data collection, including patient demographics, surgical details, and postoperative outcomes, provides a robust foundation for the analysis.
- Implications for Accessibility:** The emphasis on affordability and accessibility aligns with global health goals, especially in developing countries.

Weaknesses:

- Limited Follow-up Duration:** The study's follow-up period is restricted to 30 days post-operation, which precludes assessment of long-term durability, complications, and reoperation rates crucial for evaluating valve performance.
- Retrospective, Single-Center Design:** The single-center retrospective design limits generalizability. The absence of prospective data or multicenter validation reduces the robustness of the conclusions.
- Insufficient Statistical Detail:** The report lacks detailed statistical analysis results, such as p-values, confidence intervals, and effect sizes, which are necessary to substantiate claims of equivalence between valves.
- Incomplete Socioeconomic Analysis:** While cost comparison is highlighted, comprehensive socioeconomic impact, including quality of life and long-term treatment costs, has not been included.
- Formatting and Clarity Issues:** There are several typographical and grammatical errors, inconsistent referencing styles, and some sections that could benefit from clearer structure and language refinement.

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6. **Limited Discussion on Valve-specific Outcomes:** The paper briefly mentions clinical improvements but lacks detailed echocardiographic data, complication rates (e.g., thromboembolic, bleeding), or specific valve performance metrics.

Recommendations for Revision:

- **Clarify and expand on statistical analysis:** Provide detailed data, including p-values, confidence intervals, and effect sizes, to strengthen the evidence of equivalence.
- **Address follow-up limitations:** Acknowledge the short follow-up and discuss plans for long-term evaluation.
- **Enhance methodological detail:** Include more information about surgical techniques, patient selection criteria, and postoperative management protocols.
- **Improve language and formatting:** Correct typographical and grammatical errors, standardize referencing style, and improve section headings for clarity.
- **Add more detailed outcome data:** Incorporate echocardiographic parameters, complication rates, and reoperation data if available.
- **Discuss long-term implications:** Include or suggest plans for long-term studies assessing valve durability and patient quality of life.

Additional Notes:

- The language throughout the manuscript should be proofread to eliminate typographical errors (e.g., "Govenrnment" should be "Government," "follow up" should be "follow-up").
- Consistency in terminology and formatting of references will enhance readability and professionalism.
- Consider including a flowchart or table summarizing patient demographics, procedural details, and outcomes for clarity.