

Peer Review

Review of: "Effectiveness of the PAS for Diagnosing the Severity of Acute Appendicitis in Children: A Cohort Study"

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Thank you for asking me to review this manuscript on evaluating the Pediatric Appendicitis Score (PAS) for diagnosing appendicitis severity in children.

Major Comments:

1. Study Design and Methods:

- The retrospective cohort design is appropriate for evaluating PAS as a diagnostic tool
- The sample size (n=86) is relatively small for a diagnostic validation study
- The statistical methods, including ROC curve analysis and logistic regression, are appropriate
- The inclusion/exclusion criteria and patient selection process are well documented in the flow diagram

2. Results:

- The primary finding that PAS ≥ 8 alone has limited diagnostic accuracy (59.3% AUC) for differentiating complicated vs simple appendicitis is clearly presented
- The odds ratio of 2.246 (95% CI 0.917-5.50, p=0.077) indicates the association is not statistically significant
- The secondary analyses of individual PAS components and their associations with severity provide useful insights
- The tables and figures effectively present the data

3. Major Limitations:

- The retrospective design introduces potential documentation and selection biases

- The single-center nature limits generalizability
- The lack of power calculation/sample size justification
- No multivariable analysis incorporating other known predictors of severity
- Limited discussion of how these findings compare to existing severity prediction tools

4. Discussion:

- The authors appropriately acknowledge the study's limitations
- The discussion could be strengthened by:
 - * More thorough comparison with other severity prediction tools
 - * Clearer recommendations for clinical practice
 - * Specific suggestions for future research directions

Minor Comments:

1. Abstract:

- The conclusion could better reflect the study's implications
- The methods section should specify the study period

2. Introduction:

- Well-written with appropriate context and rationale
- The research question and objectives are clear

3. Tables/Figures:

- Table 2 would benefit from clearer formatting
- Figure 2 (ROC curve) needs better labeling of axes
- Some tables contain redundant information

4. Language and Style:

- Generally well-written, but some sections need editing for clarity
- Several typos and grammatical errors should be corrected
- Some technical terms need consistent usage throughout

Recommendations:

1. Major Revisions Needed:

- Add power calculation/sample size justification
- Conduct multivariable analysis including other severity predictors
- Strengthen the discussion of clinical implications

- Expand the comparison with existing literature
- Consider combining/streamlining tables

2. Minor Revisions:

- Copyedit for grammar and consistency
- Improve table/figure formatting
- Clarify the statistical methods description
- Add specific recommendations for future research

Overall Assessment:

This manuscript addresses an important clinical question regarding the utility of PAS for predicting appendicitis severity. While the methodology is sound, the study's limitations and modest findings suggest PAS alone is insufficient for this purpose. With appropriate revisions addressing the above points, particularly regarding clinical implications and comparison with other prediction tools, this paper could make a valuable contribution to the literature on pediatric appendicitis management.

Recommendation: Major revision required

Declarations

Potential competing interests: No potential competing interests to declare.