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Peer Review

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

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The objective of this study is very clear: to determine whether using the PAS (Pediatric Appendicitis Score) is sufficiently effective in diagnosing acute appendicitis. In conducting research, the objective should serve as a reference in determining the research methodology, including the most crucial aspect—sample size calculation. This is a fundamental requirement for determining hypothesis acceptance through appropriate statistical testing. However, this study does not explain how the sample size was calculated; it only states that the sample consists of all cases within a certain time interval. This approach does not guarantee that the sample size is adequate or aligns with the necessary calculations.

In diagnostic test studies, the sample size and the proportion of samples with the outcome significantly influence the statistical test results, including the AUC (Area Under the Curve) value. The larger the sample size, the assumption is that the precision will be increasingly accurate.

Therefore, in this study, since it is unclear whether the sample size is sufficient, the presented results remain questionable.

To calculate the required sample size, the following AUC (Area Under the Curve) formula can be used:

$$n = \left[\frac{Z_\alpha \sqrt{2V_1} + Z_\beta \sqrt{V_1 + V_2}}{\theta_1 - \theta_2} \right]$$

Declarations

Potential competing interests: No potential competing interests to declare.