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Correspondence

Predictive value of procalcitonin for intestinal ischemia and/or necrosis in pediatric patients with adhesive small bowel obstruction (ASBO): Statistical and methodological issues

To the Editor,

I read the study conducted by Bracho-Blanchet and colleagues that was published in the *Journal of Pediatric Surgery* enthusiastically and meticulously [1]. The authors tried to examine the predictive performance of serum procalcitonin (PCT) level for intestinal ischemia or necrosis (IN) in patients with postoperative adhesive small bowel obstruction (ASBO) [1].

The results were very interesting. However, some methodological issues need to be considered to avoid misinterpretation. The estimated relative risk (RR) for elevated PCT (RR = 26.4) was relatively large, and its 95% confidence interval (CI) was very wide (4.39–159.5). It seems there is sparse data bias in the estimated effect for elevated PCT. Although the authors highlighted a small sample size as a limitation of the study, they did not attempt to perform sensitivity analysis to test how much the results are influenced by the small sample size. There are currently efficient approaches available to minimize the sparse data bias [2]. Also, in the study, the continuous variable of the PCT level is dichotomized which can lead to loss of information and low statistical power for analysis [3].

Another limitation of this study is that the estimates of the regression model were not validated internally. Split sampling, cross validation, and bootstrapping can be used to test the internal validity and robustness of the regression coefficients [4,5].We suggest that the authors check the internal validity of the estimates of the regression coefficients using these methods.

Finally, cross sectional designs cannot establish a temporal relationship between a predictor and an outcome [6], so the readers should be aware of the degree of prediction fallacy when interpreting the results of this study.

Conflict of interest

None.

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