Risk Factors for Early Postoperative Small Bowel Obstruction after Anterior Resection for Rectal Cancer: Methodological Issues

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Dear Editor,

We were interested to read the paper authored by Suwa and colleagues published in the *World Journal of Surgery* in 2017 [1]. Their study was to assess the risk factors for small bowel obstruction (SBO) in early postoperative period after anterior resection (AR) for rectal cancer. The results provide evidence that the D3 lymph node dissection and DI formation are independent risk factors for EPSBO in AR [1]; however, some methodological issues should be noticed.

In this study, multivariate analysis was performed using the factors that were considered significant in the univariate analysis (factors with p values less than 0.05). The risk factors with p values less than 0.05 which have large effect on outcome and p values less than 0.2 may have a relatively small effect on outcome. If we selected only those with p value <0.05 in multivariable analysis, the effect of such predictors will be overestimated and in following the prediction power will be decreased. So, independent variables with p values less than 0.2 should be selected to be imported into the multivariable model. Otherwise, it can induce testimation bias in the results [2].

In the study, some odds ratios (ORs) and CIs were relatively large such as 17.25 (3.49–312.55) for low anterior resection and 13.61 (2.75–246.69) for D3 lymph node dissection in Table 2. This is probably due to the

multicollinearity [2]. Although, the authors have mentioned it in their study, the multivariate model may be affected by bias because of the multicollinearity [2].

The authors concluded that D3 lymph node dissection and DI formation are independent risk factors for early postoperative SBO in AR. However, the prediction models were not be validated through using some appropriate methods such as cross-validation and bootstrapping, otherwise, these results would be optimistic interpretation. Correcting optimism problem in study with small sample size have been more emphasized [3].

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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