Predictive Values of C-Reactive Protein and Neutrophil to Lymphocyte Ratio in Detecting Anastomotic Leak in Open Colorectal Surgery

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Dear Editor,

We read with interest the article entitled “Neutrophil to lymphocyte ratio (NLR) and C-reactive protein (CRP) as 2 predictive tools on anastomotic leak (AL) in colorectal cancer open surgery” by Mik et al. [1] recently published in *Digestive Surgery*. Among the 724 patients submitted to open colorectal surgery in the institutions involved in the study, 33 (4.6%) had an AL; the blood NLR and CRP values measured at the 4th postoperative day were significantly different in the groups of patients with and without AL. The authors performed receiver operating characteristic curves to estimate the area under the curve (AUC) and evaluate the accuracy of the tests, at cut-off values assessed by the Youden test. In particular, at a CRP cut-off value of 180 mg/L, the AUC was 0.83

(good), the sensitivity 75%, the specificity 91%, the positive predictive value (PPV) 52%, and the negative predictive value (NPV) 87%; the corresponding figures for an NLR cut-off value of 6.5 at the 4th postoperative day were AUC 0.68 (poor), sensitivity 69%, specificity 78%, PPV 49%, and NPV 88% [1]. We recently performed a similar study and we obtained similar NLR AUC, sensitivity, and specificity values (data not yet published), but a consistently lower PPV. The estimation of the PPV and NPV of a diagnostic test is strictly dependent on the prevalence of the disease to diagnose, along with the sensitivity and specificity of the test itself. In the study by Mik et al. [1] the occurrence of an AL was observed in the 4.6% of the patients; nevertheless, the use of this value to determine the

PPV and NPV of both blood CRP and NLR, together with the corresponding sensitivities and specificities reported, produces lower results than those described in the article. We would like to know which is the method used by the authors for the evaluation of the PPV and NPV of the tests performed, and what prevalence of AL did they use to obtain the results mentioned above?

References

- 1 Mik M, Dziki L, Berut M, Trzcinski R, Dziki A: Neutrophil to lymphocyte ratio and C-reactive protein as two predictive tools of anastomotic leak in colorectal cancer open surgery? *Dig Surg* 2017, DOI: 10.1159/000456081.