

## Neutrophil-to-Lymphocyte Ratio in Prognosis of Gastric Cancer

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Dear Editor:

We have read with great interest the article 'Clinical Significance of Preoperative Inflammatory Parameters in Gastric Cancer Patients' by Lee et al.<sup>1</sup> This study assessed the potential relationship between the severity of inflammation and prognosis in cancer patients. They showed that preoperative elevated neutrophil-to-lymphocyte (N/L) ratio could predict the advanced stage of gastric cancer (GC).

Routine peripheral blood counts may be useful in prognosis of many malignancy such as GC. A complete blood count is a routine examination method that gives us information about the patient's formed blood contents: the red and white cells, the platelets, the count and dimensions of subgroups of cells, and parameters like the red cell distribution width, platelet cell distribution width and mean platelet volume.<sup>2</sup> White blood cell (WBC) count is one of the helpful inflammatory biomarkers in clinical practice. Although WBC is in normal range, subtypes of WBC like N/L ratio may predict cardiovascular mortality. N/L ratio is a readily measurable laboratory marker used to evaluate systemic inflammation.<sup>3</sup> Because hypertension, diabetes mellitus, metabolic syndrome,<sup>4</sup> left ventricular dysfunction, acute coronary syndromes, valvular heart disease, abnormal thyroid function tests, renal or hepatic dysfunction, known malignancy,<sup>5</sup> previous history of local

or systemic infection, inflammatory diseases, and any medication that related to inflammatory condition of patients, the measurement of N/L ratio can be potentially affected in all of above conditions. For these reasons, it would be better, if the authors had mentioned these factors.

In conclusion, the N/L ratio levels may be affected by many conditions. N/L ratio itself alone without other overt inflammatory markers may not accurately provide information about the prognosis of the patient.<sup>6</sup> So, the N/L ratio should be evaluated together with other inflammatory markers like mean platelet volume<sup>7</sup> and red cell distribution width.<sup>8</sup> We believe that these findings will guide further studies about mean platelet volume as a surrogate marker of early diagnosis in patients with GC.

### References

1. Lee DY, Hong SW, Chang YG, Lee WY, Lee B. Clinical significance of preoperative inflammatory parameters in gastric cancer patients. *J Gastric Cancer* 2013;13:111-116.
2. Ulusoy RE, Yokuşoğlu M, Kırılmaz A, Nevruz O, Baysan O, Kılıçaslan F, et al. Mean platelet volume in ST elevation and non-ST elevation myocardial infarction. *Gulhane Med J* 2011;53:114-118.
3. Balta S, Demirkol S, Celik T, Kucuk U, Unlu M, Arslan Z, et al. Association between coronary artery ectasia and neutrophil-lymphocyte ratio. *Angiology* 2013. [Epub ahead of print]
4. Balta S, Cakar M, Demirkol S, Arslan Z, Akhan M. Higher Neutrophil to lymphocyte ratio in patients with metabolic syndrome. *Clin Appl Thromb Hemost* 2013. [Epub ahead of print]

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5. Balta S, Demirkol S, Sarlak H, Kurt O. Comment on 'Elevated preoperative neutrophil/lymphocyte ratio is associated with poor prognosis in soft-tissue sarcoma patients': neutrophil to lymphocyte ratio may be predictor of mortality in patients with soft-tissue sarcoma. *Br J Cancer* 2013;108:2625-2626.
6. Balta S, Demirkol S, Unlu M, Celik T. Other inflammatory markers should be kept in mind when assessing the mean platelet volume. *Platelets* 2013. [Epub ahead of print]
7. Demirkol S, Balta S, Kucuk U, Celik T. Mean platelet volume may indicate early diagnosed gastric cancer based on inflammation. *Platelets* 2013. [Epub ahead of print]
8. Balta S, Demirkol S, Aydogan M, Unlu M. Red cell distribution width is a predictor of mortality in patients undergoing coronary artery bypass surgery. *Eur J Cardiothorac Surg* 2013;44:396-397.