

Reply to “Accurate Use of Neutrophil to Lymphocyte Ratio in predicting prognosis of papillary thyroid carcinoma” – WJS-14-06-0881

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We would like to thank Sertoglu *et al.* for their interest in our recent article [1]. Here are the responses to their comments.

Regarding to their first comment, we would like to point out that all of our patients had total and differential white blood cell counts within the normal range as defined by our laboratory.

Although it might be true that using a specific WBC range as an exclusion criterion may reduce biases, it is currently unclear what specific range should be chosen or taken. Furthermore, adding yet another exclusion criterion would further limit the clinical utility of preoperative neutrophil-to-lymphocyte ratio (NLR) in cN0 PTC as fewer consecutive patients would be eligible. As correctly pointed out, there are many factors such as individual laboratory, instruments and measurement methods that may could potentially affect the accuracy and reliability of preoperative NLR and that was the reason why all blood counts were taken around the same time of the day one day before the actual thyroidectomy and were analyzed in the same laboratory using the same whole blood analyzer within a few hours of collection.

Regarding to their second comment, our chosen cut-off values for NLR actually represented the tertiles (i.e. values which divided the cohort into lower one-third (0-33.3%), middle one-third (33.4-66.7%) and upper one-third (66.8 – 100%)). The main purpose was to have a roughly equal number of patients within each group for comparison. Another advantage of having three groups (instead of two using say, the median) was the ability to observe any interesting trend with higher tertiles. Although the receiver-operating characteristic analysis is a great way of determining an optimal cut-off for test sensitivity and specificity, this was not our primary aim of our analysis. We did compare our overall NLR with that of the two previous studies [2,3] and they appeared similar in actual value.

Regarding to the last comment, although we agree that it might be interesting to further study the role of other inflammatory markers such as CRP, ESR, IL-6 in papillary thyroid carcinoma (PTC), given the findings of the present study, we are less optimistic on their prognostic potential. In our opinion, unlike other non-thyroidal cancers like lungs, breasts and kidneys, PTC induces very limited systemic inflammation. This is supported by our data showing that the NLR between those with a benign goiter and with a clinically-nodal positive PTC was not significantly different (2.80 ± 1.77 vs. 2.74 ± 2.32 , $p=0.951$). Perhaps, this might be why even PTC patients presenting with distant metastases can remain relatively asymptomatic and do extremely well for a long-period [4].

References:

1. Lang BH, Ng CP, Au KB, Wong KP, Wong KK, Wan KY (2014) Does Preoperative Neutrophil Lymphocyte Ratio Predict Risk of Recurrence and Occult Central Nodal Metastasis in Papillary Thyroid Carcinoma? World J Surg. DOI: 10.1007/s00268-014-2630-z
2. Liu CL, Lee JJ, Liu TP, Chang YC, Hsu YC, Cheng SP (2013) Blood neutrophil-to-lymphocyte ratio correlates with tumor size in patients with differentiated thyroid cancer. J Surg Oncol. ;107(5):493-7. doi: 10.1002/jso.23270.
3. Seretis C, Gourgiotis S, Gemenetzi G, Seretis F, Lagoudianakis E, Dimitrakopoulos G (2013) The significance of neutrophil/lymphocyte ratio as a possible marker of underlying papillary microcarcinomas in thyroidal goiters: a pilot study. Am J Surg;205(6):691-6. doi: 10.1016/j.amjsurg.2012.08.006.

4. Lang BH, Wong KP, Cheung CY, Wan KY, Lo CY (2013). Evaluating the prognostic factors associated with cancer-specific survival of differentiated thyroid carcinoma presenting with distant metastasis. *Ann Surg Oncol* ;20(4):1329-35. doi: 10.1245/s10434-012-2711-x.