

INCREASED NEUTROPHIL-TO-LYMPHOCYTE RATIO: IS IT REALLY DIAGNOSTIC OF RESTLESS LEGS SYNDROME?

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Dear Sir,

I carefully read the article by Varım et al on restless legs syndrome (RLS) that was recently published in the *Singapore Medical Journal* and I have some points to raise. The authors stated that “*Dopamine imbalance and iron deficiency are the most common theories of RLS aetiology*”.⁽¹⁾ However, sympathectomy has been shown to result in a significant increase in the neutrophil-to-lymphocyte ratio (NLR) in rats.⁽²⁾ Iron-deficiency anaemia influences humoral, cell-mediated and nonspecific immunity, and is associated with an increased NLR.⁽³⁾ Given that both dopamine imbalance and iron deficiency are already associated with an increased NLR, I wonder what is new in this article.

Futhermore, in addition to what they listed, the authors should have stated that they excluded any patient with underlying uncontrolled hypertension (HT) or resistant hypertension, as both conditions can increase the NLR.⁽⁴⁾ Plasma cortisol levels should also be measured to exclude patients with secondary HT and the 24-hour urinary cortisol excretion test performed to identify subclinical cases.⁽⁵⁾ It is also not clear if the study excluded smokers. Moreover, the authors controlled for age and body mass index in both groups, but did not account for lipid levels, which can affect the leucocyte count.⁽⁵⁾

Finally, before we can conclude that the findings support “*the idea that systemic inflammation plays a role in RLS aetiology or that RLS is related to systemic inflammatory diseases*”, specific inflammation markers need to be used in addition to NLR. The area under the curve in receiver operating characteristic analysis and the specificity of NLR cut-off values were consistently found to be low, possibly due to the relatively small number of cases in the study.

Yours sincerely,

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REFERENCES

1. Varım C, Acar BA, Uyanık MS, et al. Association between the neutrophil-to-lymphocyte ratio, a new marker of systemic inflammation, and restless legs syndrome. *Singapore Med J* 2016; 57:514-6.
2. Horvathova L, Tillinger A, Sivakova I, et al. Chemical sympathectomy increases neutrophil-to-lymphocyte ratio in tumor-bearing rats but does not influence cancer progression. *J Neuroimmunol* 2015; 278:255-61.
3. Ekiz C, Agaoglu L, Karakas Z, Gurel N, Yalcin I. The effect of iron deficiency anemia on the function of the immune system. *Hematol J* 2005; 5:579-83.
4. Altintas N, Çetinoğlu E, Yuceege M, et al. Neutrophil-to-lymphocyte ratio in obstructive sleep apnea; a multi center, retrospective study. *Eur Rev Med Pharmacol Sci* 2015; 19:3234-40.
5. Belen E, Sungur A, Sungur MA, Erdoğan G. Increased neutrophil to lymphocyte ratio in patients with resistant hypertension. *J Clin Hypertens (Greenwich)* 2015; 17:532-7.

Editor's note: The authors, Varım et al, have declined to respond to the above letter.