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Letter to Editor for The Diagnostic Value of Neutrophil/Lymphocyte Ratio in Distinguishing Peripheral and Central Vertigo in Patients with Dizziness

Editöre Mektup: Baş Dönmesi Olan Hastalarda Periferik ve Santral Vertigonun Ayırt Edilmesinde Nötrofil/Lenfosit Oranının Tanısal Değeri

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ABSTRACT

ÖZ

The study titled "Diagnostic Value of Neutrophil/ Lymphocyte Ratio in Distinguishing Peripheral and Central Vertigo in Patients with Dizziness" explores the utility of the neutrophil-to-lymphocyte ratio (NLR) as a diagnostic marker for differentiating central and peripheral vertigo. Findings reveal that NLR is significantly higher in central vertigo cases (median: 3.99 vs. 2.32; p<0.001), with a proposed cut-off value of 3.25. The retrospective study, involving 260 patients, highlights NLR's potential as a cost-effective, rapid diagnostic tool in emergency settings. However, its retrospective design and the need for validation across diverse populations suggest the necessity for further prospective research to confirm diagnostic accuracy and explore underlying mechanisms. Keywords: Emergency department, differential diagnosis, dizziness, neutrophil/lymphocyte ratio, vertigo

"Baş Dönmesi Olan Hastalarda Periferik ve Santral Vertigonun Ayırt Edilmesinde Nötrofil/Lenfosit Oranının Tanı Değeri" başlıklı çalışma, nötrofil-lenfosit oranının (NLR) santral ve periferik vertigoyu ayırt etmede tanısal bir belirteç olarak kullanılabilirliğini araştırıyor. Bulgular, santral vertigo vakalarında NLR'nin anlamlı derecede daha yüksek olduğunu (medyan: 3,99 vs. 2,32; p<0,001) ve 3,25'lik bir eşik değer önerildiğini gösteriyor. Retrospektif bir çalışma olan bu araştırma, 260 hastayı kapsıyor ve NLR'nin acil durumlarda hızlı, ucuz bir tanı aracı olarak potansiyelini vurguluyor. Ancak, retrospektif tasarımı ve farklı popülasyonlarda doğrulanma ihtiyacı, tanısal doğruluğun teyit edilmesi ve altta yatan mekanizmaların araştırılması için ileri prospektif çalışmaların gerekliliğine işaret ediyor. Anahtar Kelimeler: Acil servis, ayırıcı tanı, baş dönmesi, nötrofil/lenfosit oranı, vertigo

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Dear Editor,

I read with great pleasure the article titled "Diagnostic Value of Neutrophil/Lymphocyte Ratio in Distinguishing Peripheral and Central Vertigo in Patients with Dizziness" published in your journal, Online Turkish Journal of Health Sciences.¹ I am writing to share my thoughts on this article. The study stands out as an important investigation into the diagnostic value of the neutrophil/lymphocyte ratio (NLR) in differentiating peripheral and central vertigo in patients presenting to the emergency department with dizziness symptoms. The methodology, findings, and conclusions of the study provide valuable insights into the use of NLR in clinical practice.

Strengths of the Study: The article makes a significant contribution to clinical practice by demonstrating that NLR can be used to differentiate between central and peripheral vertigo in patients presenting to the emergency department with dizziness. NLR, being an easily obtainable and low-cost parameter, can be a useful tool in settings requiring rapid decision-making, such as the emergency department. Retrospective Design and Large Sample Size: The study features a retrospective design encompassing 260 patients. This large sample size enhances the statistical power of the findings and supports the generalizability of the results. Additionally, the comparison of demographic characteristics such as age, gender, and comorbidities between central and peripheral vertigo groups demonstrates the comprehensive nature of the analysis.¹ Diagnostic Value of NLR: The study reveals that NLR is significantly higher in patients with central vertigo. This finding suggests that NLR can be used in the diagnosis of central vertigo and may support the need for neurological imaging in these patients. This could provide a significant advantage in the rapid diagnosis and treatment processes in emergency departments.³

The literature on the role of inflammatory markers such as NLR in clinical diagnosis and prognosis has accumulated significantly in recent years. In this context, there are studies examining the diagnostic and prognostic value of inflammatory indices in various clinical scenarios, including vertigo, testicular torsion, acute aortic dissection, incarcerated hernia, acute cholecystitis, and multiple sclerosis. Ethics committee approval is not required for a letter to the editor.

NLR in Differentiating Vertigo

In a study by Sertbaş et al., NLR was found to be significantly higher in patients with central vertigo (median: 3.99 vs. 2.32; p<0.001).¹ This finding supports the use of NLR as a rapid and low-cost diagnostic tool in the emergency department. Similarly, NLR has been shown to have acceptable diagnostic power (AUC: 0.75) in differentiating testicular torsion from epididymo-orchitis, while newer indices such as the pan-immune inflammation value (PIV) have demonstrated superior performance (AUC: 0.81).⁴ Duyan et al. highlighted that NLR, PLR, and SII independently predict in-hospital mortality in Stanford Type B acute aortic dissection (BAAD) (OR: 9.16-8.57).⁵ These results reflect the critical role of inflammation in vascular pathologies. In incarcerated inguinal hernias, NLR, SII, and PIV have been shown to have acceptable diagnostic power (AUC: 0.738-0.765) in predicting strangulation.⁶ These findings underscore the importance of inflammatory markers in the early detection of conditions requiring surgical urgency in the emergency department. In the detection of multiple sclerosis (MS) relapses, NLR, RLR, and SII have demonstrated excellent diagnostic performance (AUC: 0.81-0.87).⁷ This is a significant finding highlighting the association between peripheral inflammation and central nervous system involvement. In differentiating complicated appendicitis, NLR, SIRI, and PIV have shown acceptable diagnostic value (AUC: 0.735-0.783), while the HALP score has limited diagnostic value (AUC: 0.64).8 This reflects the potential of indices derived from routine blood parameters in surgical decision-making processes.

Areas for Improvement

Retrospective Design: The retrospective nature of the study increases the likelihood of some data being missing or inaccurately recorded. Future prospective studies could more precisely evaluate the diagnostic value of NLR.⁹

Definitive Threshold for NLR: While the NLR threshold of 3.25 determined in the study is useful for differentiating central and peripheral vertigo, this

value needs to be validated in different populations and clinical settings. Additionally, the potential influence of other inflammatory conditions on NLR should be considered.¹⁰

In conclusion, this study makes a significant contribution by demonstrating that NLR can be used to differentiate between central and peripheral vertigo in patients presenting to the emergency department with dizziness. The use of easily obtainable parameters like NLR in settings requiring rapid decisionmaking, such as the emergency department, can expedite diagnostic processes and improve patient management. However, the retrospective nature of the study and the need to validate the definitive NLR threshold open an important area for future research. Sincerely.

Ethics Committee Approval: Ethics committee approval is not required.

Conflict of Interest: No conflict of interest was declared by the authors.

Author Contributions: Concept – NU; Supervision – NU; Materials – NU; Data Collection and/or Processing – NU; Analysis and/or Interpretation – NU; Writing – NU

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