

Neutrophil Percentage as a Potential Biomarker of Acute Kidney Injury Risk and Short-Term Prognosis in Patients with Acute Myocardial Infarction in the Elderly [Letter]

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Dear editor

Chen et al have conducted an interesting study, investigating the predictive value of neutrophil percentage for post-myocardial infarction prognosis, particularly for assessing the risk of acute kidney injury (AKI) among older adults.¹ Their findings, revealing a 29% increase in AKI risk for every one standard deviation rise in neutrophil percentages and a risk threshold of 76.1%, offer valuable insights not previously reported. Nevertheless, to enhance the understandability of their conclusions and enrich clinical relevance, we wish to raise several points with regard to data interpretation.

In their introductory remarks, the authors aptly characterized neutrophil percentages as a surrogate marker of inflammatory status, which aligns with results in the existing literature. However, it is crucial to acknowledge that composite parameters like neutrophil percentages or other blood cell ratios (eg neutrophil-to-lymphocyte ratio, platelet-to-lymphocyte ratio, and lymphocyte-to-monocyte ratio), while indicative of inflammation severity,² may also be influenced by factors beyond inflammation alone. Indeed, single parameters such as leukocyte or neutrophil counts, C-reactive proteins, cytokines, and composite ones like neutrophil percentages, are all regarded as instruments for assessing systemic inflammation.² Blood cell ratios, on the other hand, can also be subject to variations due to factors such as the timing of sample collection and the underlying pathophysiology of index diseases.³ Moreover, changes in neutrophil percentages are also indirectly influenced by those of lymphocytes and/or monocytes, suggesting a broader context besides inflammation. Therefore, we advocate for the inclusion of variables affecting bone marrow function or nutritional indices in multivariate analyses, to elucidate the true biologic significance of neutrophil percentages within the study framework.

Additionally, it is imperative to consider other pertinent factors when analyzing the risk of AKI, such as baseline proteinuria levels and the functional status of these older adults under study. Proteinuria is a common finding in hospitalized older adults,⁴ and has been established as a critical determinant of AKI risk across various populations. Likewise, functional status bears a significant association with AKI probability in older adults.⁵ Hence, we recommend that the authors incorporate these factors into their analyses to provide a comprehensive assessment of AKI risk in their study cohort.

By addressing these considerations, the authors can enrich the interpretative depth of their findings and enhance clinical applicability of their research in guiding prognostic evaluations in older adults post-myocardial infarction.

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