EDITORIAL

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Stability, variability, and treatment implications of the blood eosinophil count in Korean patients with chronic obstructive pulmonary disease

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The blood eosinophil count (BEC) plays a critical role in the management of chronic obstructive pulmonary disease (COPD), particularly in guiding the use of inhaled corticosteroids (ICS) to mitigate the risk of exacerbations in patients with elevated eosinophil levels [1]. Although its utility has been well established in controlled clinical trials, the behavior of the BEC in real-world settings remains underexplored, raising questions about its broader clinical applicability. Moreover, real-world evidence on the relationship between the BEC and the risk of future exacerbation is inconsistent. For example, findings from the COPDGene cohort revealed a strong association between moderate to severe COPD and a BEC of ≥ 300 cells/μL, whereas the SPIROMICS cohort failed to replicate this finding [2,3].

In this context, the study by Rhee et al. [4] provided valuable insights into the distribution, temporal stability, and clinical relevance of the BEC in patients with COPD, with a specific focus on the South Korean population. Their findings significantly enhance our understanding of the BEC, offering evidence that informs both regional and global perspectives.

First, the study reinforces the association between an elevated BEC and an increased risk of exacerbation, a trend that has also been observed in younger Korean patients with COPD [5]. However, other studies have revealed no association between the BEC and the severity of acute exacerbations, and some have even linked lower BECs to higher mortality rates [6,7]. These contrasting findings highlight the complexity of the BEC as a biomarker and underscore its limitations when used in isolation. As a result, recent research has shifted its focus toward examining the longitudinal variability of the BEC, to evaluate more accurately its prognostic utility in COPD management [8].

Second, the study demonstrates moderate stability of the BEC over time, as indicated by intra-class correlation coefficients. This temporal consistency underscores the utility of the BEC in long-term treatment planning, supporting its relevance for routine clinical decision-making beyond the controlled environment of clinical trials.

Third, the authors found that greater variability in the BEC is associated with a higher frequency of exacerbations (≥ 2 per year). This subgroup-specific finding suggests that BEC fluctuations are more pronounced in patients with a significant exacerbation burden, which may help explain the limitations of single-point measurements in risk prediction. These results highlight the potential advantages of repeated BEC assessments for more accurate risk stratification.

Finally, the study provides a detailed analysis of treatment patterns among patients with COPD in South Korea. It highlights a high prevalence of triple therapy (ICS, long-acting β-agonists, and long-acting muscarinic antagonists) among patients with a BEC of ≥ 300 cells/μL, reflecting adherence to evidence-based guidelines. However, the finding that 40% of patients with COPD in the KOCOSS cohort are prescribed ICS, despite 25% having a history of tuberculosis, raises important concerns [9]. Given that higher BECs in the presence of bronchiectasis with airflow obstruction are associated with a lower risk of exacerbation in patients receiving ICS, it may be worth reconsidering whether a history of mycobacterial infection should remain a contraindication for ICS use, particularly in patients who have COPD with an el-

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evated BEC [10]. These findings offer a nuanced perspective on how regional healthcare practices and clinical contexts influence treatment decisions.

In summary, Rhee et al. [4] deliver a comprehensive and insightful contribution to ongoing discourse on the role of the BEC in COPD management. Their study evaluates both the stability and variability of the BEC, linking these findings to real-world treatment patterns and clinical outcomes in the South Korean population. Notably, the observed variability in the BEC among frequent exacerbators highlights the need for longitudinal monitoring to improve patient risk stratification and optimize treatment strategies. By contextualizing their findings within the unique healthcare landscape of South Korea, the authors offer valuable insights for global practice, underscoring the importance of biomarker-driven approaches that are both evidence-based and contextually tailored. As precision medicine continues to advance, this study serves as a vital reminder of the complexities of COPD care and the necessity of integrating biomarkers with personalized patient management.

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