

Re: Elevated Peripheral Blood Eosinophils during Acute Exacerbation of Chronic Obstructive Pulmonary Disease Prevalence and clinical significance

Dear Editor,

We read with interest, the article by Al Sibani *et al.* published in the August 2022 issue of SQUMJ.¹ on elevated peripheral blood eosinophils (PBE) during acute exacerbation of chronic obstructive pulmonary disease (AECOPD). Patients who have been treated for COPD may develop acute exacerbations and respond to corticosteroids.² Pulmonary function tests in these patients show that FEV1.0 can be markedly improved in stable conditions after corticosteroid administration.² In the last several years, we also encountered three COPD patients with increased peripheral eosinophils during acute exacerbations. Two of them were severe COPD patients who required home oxygen therapy. Intravenous corticosteroids resulted in marked improvement in the patient's symptoms and FEV1.0. Therefore, we speculate that some patients who seem to have only COPD might have factors of bronchial asthma. We agree with the authors' view that peripheral eosinophil counts during acute exacerbations should be noted. However, there are some aspects where questions remain. It would be beneficial to know whether it was considered that increased eosinophils suggested that the patients had bronchial asthma. It was unclear if the patients had a history of paroxysmal dyspnoea at night or early in the morning or if there were any changes in FEV1.0 before and after beta-agonist inhalation in pulmonary function tests. For patients who had exacerbation eosinophilia, it was not clear if the peripheral eosinophil counts remained normal in the resting state when steroids were restored to pre-exacerbation levels. Finally, it would be helpful to know whether patients with eosinophilia were considered those with so-called 'asthma-chronic pulmonary obstructive disease overlap'.³

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Response from the Authors

Dear Reader,

Eosinophilic airway inflammation has been an increasingly recognised subtype of COPD and is unrelated to bronchial asthma.^{1,2} In addition, the Strategy for the Diagnosis, Management and Prevention of Chronic Obstructive Pulmonary Disease proposed by the Global Initiative for Chronic Obstructive Lung Disease (GOLD) has recommended initiating inhaled steroids of patients with stable COPD based on the eosinophils count.³ In regards to our sample, we excluded all patients with a history of bronchial asthma or symptoms suggestive of bronchial asthma;⁴ also, we have used the GOLD criteria to ascertain COPD diagnosis for all patients in our study.⁵

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With steroid therapy, a remarkable reduction in eosinophils count was noted from $0.6 \text{ cells} \times 10^9/\text{L}$ on admission to $0.2 \text{ cells} \times 10^9/\text{L}$ on discharge; however, there are no follow-up data on eosinophils counts when patients returned to the pre-exacerbation state. In our study, patients with elevated eosinophilic count had a shorter length of hospital stay but a higher one-year readmission rate. Our findings support the possibility that elevated eosinophils count is a unique entity related to a subtype of COPD rather than a manifestation of overlap between COPD and bronchial asthma, hence eosinophilic count should be used as a surrogate marker to guide steroid use in acute exacerbation of COPD and to guide long-term steroid treatment.

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