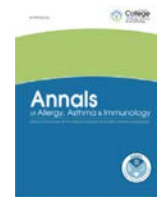




Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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## Correspondence

## Eosinophilic inflammation, coronavirus disease 2019, and asthma

### Are inhaled corticosteroids the missing link?



We congratulate Dr Ho et al<sup>1</sup> on their work that further clarified the relationship between blood eosinophils, asthma, and the risk of severe coronavirus disease 2019 (COVID-19). They leveraged data from their large clinical network, which unlike others,<sup>2,3</sup> includes outpatients diagnosed as having COVID-19. The authors effectively reveal that in asthma and in health, having a raised blood eosinophil count is protective against severe COVID-19 and associated mortality.

Clinicians have repeatedly noticed that the peripheral blood eosinophil count is low in inpatients with severe COVID-19.<sup>4,5</sup> Eosinophil counts also improve as patients recover from their COVID-19 illness.<sup>5</sup> Because the authors limited their data to the COVID-19 encounter of the patients, their conclusion that a high blood eosinophil count reduces the risk of mortality and hospitalization could simply be related to the suppression of blood eosinophil count in severe COVID-19. However, the authors try to account for this by using many surrogates for COVID-19 disease severity (blood and clinical markers), which could make their conclusions more robust.

We would be interested if the authors could comment on whether inhaled corticosteroid use explains the difference in risk between patients with and without asthma with a blood eosinophil count of greater than or equal to 200 cells/ $\mu$ L in their cohort.

We found the apparently increased protection of the raised blood eosinophil count among patients with asthma compared with patients without asthma (Table 4) in this cohort interesting.<sup>1</sup> Patients with asthma with a raised blood eosinophil count are more likely to derive benefit from inhaled corticosteroids,<sup>6</sup> whereas others have found that the use of inhaled corticosteroids reduces the risk of hospitalization and mortality among patients with asthma who develop COVID-19.<sup>2</sup> Our phase 2 clinical trial also revealed that the initiation of inhaled corticosteroids early in COVID-19 can reduce the risk of clinical deterioration and prevent increased healthcare resource use.<sup>7</sup>

Sanjay Ramakrishnan, MD<sup>\*,†,‡</sup>Mona Bafadhel, PhD<sup>\*,†</sup>

<sup>\*</sup> Nuffield Department of Clinical Medicine  
University of Oxford  
Oxford, United Kingdom

<sup>†</sup> National Institute for Health Research  
NIHR Oxford Biomedical Research Centre  
Oxford, United Kingdom

<sup>‡</sup> School of Medical and Health Sciences  
Edith Cowan University  
Perth, Australia

sanjay.ramakrishnan@ndm.ox.ac.uk

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**Disclosures:** Dr Ramakrishnan reports receiving grants and nonfinancial support from the Oxford Respiratory National Institute for Health Research and Oxford Biomedical Research Centre, during the conduct of the study; nonfinancial support from AstraZeneca; and personal fees from the Australian Government Research Training Program, outside the submitted work. Dr Bafadhel reports receiving grants from AstraZeneca; personal fees from AstraZeneca, Chiesi, and GlaxoSmithKline plc; and other support from Albus Health and ProAxis, outside of the submitted work.

**Funding:** The authors have no funding sources to report.