Are Eosinophils Needed for Normal Health?

To the Editor: The recent state-of-the-art review on eosinophils in health and disease by Wechsler et al1 is a comprehensive statement of current thought. In their summary, the authors conclude that eosinophils may be involved in numerous homeostatic functions, including metabolism, tissue remodeling, and immune-regulatory roles. However, current treatment outcomes have not disclosed such abnormalities. In addition, a prior review of the consequences of not having eosinophils also failed to find any characteristic effect of eosinophil depletion in humans.6 Because much of the data supporting the homeostatic properties of the eosinophil is derived from in vitro experiments and from murine studies, one can question whether the authors’ conclusions are correct in humans.

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In Reply—Are Eosinophils Needed for Normal Health?

To the Editor: We thank Drs Gleich and Leiferman for their letter in response to our state-of-the-art review on eosinophils in health and disease.1 They question the concluding summary, that eosinophils may be involved in numerous homeostatic mechanisms, including metabolism, tissue remodeling and development, neuronal regulation, epithelial and microbiome regulation, and immunoregulation, implicating a role for eosinophils in human health. They raise this point as the anti-interleukin (IL)—5Rx monoclonal antibody benralizumab, which abolishes circulating eosinophils through induction of antibody-dependent cytotoxicity, has not been associated with an adverse effect profile. Indeed, an open label study of 5 years’ experience provides some reassurance,2 although this publication included only 48 participants who have safety data exceeding 5 years, a number that is far too small to be conclusive. Furthermore, there is lack of insight as to whether the licensed dose of benralizumab, which depletes blood eosinophils, also depletes tissue eosinophils—an important unknown, as the metabolic and immunoregulatory roles of eosinophils in human health are tissue related, and the extrapolation from blood eosinophil depletion to the suggestion that eosinophils play no role in human health overlooks this specificity.

LETTERS TO THE EDITOR