Living without eosinophils: evidence from mouse and man

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This review of accumulated evidence for eosinophil depletion in mouse models and human clinical trials affirms that targeting eosinophils to treat eosinophil-associated diseases has therapeutic value without detrimental effects on health https://bit.ly/3biObDI

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Abstract

The enduring view of eosinophils, as immune effector cells whose primary function is host defence against infection by helminths and other microbial pathogens, sets the stage for a fundamental question regarding the safety of therapeutic eosinophil depletion. If eosinophils are significantly reduced or altogether depleted in an effort to alleviate the negative effects of tissue eosinophilia and eosinophilic inflammation in conditions such as asthma, COPD, chronic rhinosinusitis with nasal polyps, eosinophilic granulomatosis with polyangiitis and hypereosinophilic syndrome, would these patients become susceptible to infection or another illness? Development of mouse models in which the eosinophil lineage has been ablated, observations in patients naturally lacking eosinophils and data from studies of eosinophil-depleting medical therapies indicate that the absence of eosinophils is not detrimental to health. The evidence available to date, as presented in this review, supports the conclusion that even if certain homeostatic roles for the eosinophil may be demonstrable in controlled animal models and human *in vitro* settings, the evolution of the human species appears to have provided sufficient immune redundancy such that one may be hale and hearty without eosinophils.