



Current perspectives on the role of interleukin-1 signalling in the pathogenesis of asthma and COPD

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Interleukin-1 signalling plays a major contributory role in the pathogenesis of asthma and COPD
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ABSTRACT Asthma and chronic obstructive pulmonary disease (COPD) cause significant morbidity and mortality worldwide. In the context of disease pathogenesis, both asthma and COPD involve chronic inflammation of the lung and are characterised by the abnormal release of inflammatory cytokines, dysregulated immune cell activity and remodelling of the airways. To date, current treatments still only manage symptoms and do not reverse the primary disease processes. In recent work, interleukin (IL)-1 α and IL-1 β have been suggested to play important roles in both asthma and COPD. In this review, we summarise overwhelming pre-clinical evidence for dysregulated signalling of IL-1 α and IL-1 β contributing to disease pathogenesis and discuss the paradox of IL-1 therapeutic studies in asthma and COPD. This is particularly important given recent completed and ongoing clinical trials with IL-1 biologics that have had varying degrees of failure and success as therapeutics for disease modification in asthma and COPD.