Rhinovirus-induced interferon production in asthma

After reading the article by Sykes et al., we would like to comment on impaired response to rhinovirus in relation to asthma severity. The authors examined rhinovirus-induced interferon (IFN) production in a cohort of asthmatic patients compared with controls. While they previously reported in this study; (2) the cohort on the whole did not cover all the spectrum of disease severity, with most patients having mild/moderate asthma; (3) impaired IFN production has been previously documented in epithelial cells cultured from well-controlled asthmatic patients. However, we recently found a defective IFN induction and increased viral replication in bronchial epithelial cells of preschool children with mild asthma. None of the children in our report were treated with oral or high-dose inhaled corticosteroids, the majority of them receiving only inhaled rescue salbutamol. Even more compelling is our finding of similar innate immune impairments in atopic children without symptoms of asthma. Clearly, our results suggest that asthma severity is not an issue closely related with IFN responses to rhinovirus infection. Of note, we also reported that rhinovirus-induced IFN production in epithelial cells was inversely related to IL-4 expression and eosinophil counts in bronchial biopsies, suggesting that Th2 inflammatory milieu, rather than asthma severity, is tightly linked with IFN responses to rhinovirus.

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