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LUNG ALERT

Asthma and natural killer T cells

▲ Akbari O, Faul JL, Hoyte EG, *et al*. CD4+ invariant T-cell-receptor+ natural killer T cells in bronchial asthma. *N Engl J Med* 2006;**354**:1117–29

The presence of CD4+ T helper cells in the airways of patients with asthma is well recognised, precipitating airway inflammation via cytokines such as interleukin-4, interleukin-5, and interleukin-13. Newly identified human natural killer T cells also express CD4. A subclass of this group, invariant natural killer T cells, possesses a restricted range of T cell receptors (V α 24-J α 18) which bind to glycolipid antigens presented by the class I MHC-like protein CD1d. Stimulation of such cells generates a potent cytokine response. The exact role of invariant natural killer T cells in humans is unknown. This study examined their role in asthma.

Twenty five patients were recruited, 14 with moderately severe asthma (10 taking inhaled corticosteroids), five with sarcoidosis, and six controls. None had received oral corticosteroids within 3 months of the study. Bronchoalveolar lavage (BAL), peripheral blood lymphocytes, and endobronchial biopsies were analysed.

Increased BAL lymphocyte counts with predominant CD4+ expression were seen in both patients with asthma and those with sarcoidosis. However, there were significantly more invariant natural killer T cells in those with asthma (mean 63%) than sarcoidosis (mean <1%). In asthma patients, natural killer T cells were over 100 times more abundant in BAL fluid than in peripheral blood. There was no significant difference in asthma between patients who were and were not receiving inhaled corticosteroids.

This study supports a role for invariant natural killer T cells in the pathogenesis of asthma and as a target for future therapy.

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