



## IL-10 and RANTES are Elevated in Nasopharyngeal Secretions of Children with Respiratory Syncytial Virus Infection

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**Background:** Respiratory syncytial virus (RSV) infection causes asthma-like symptoms in infants and young children. Although an increase in several mediators in the airway during RSV infection has been reported, the mechanisms involved in airway inflammation are not fully understood. The aim of this study was to investigate the immunological deviation associated with airway inflammation by measuring cytokine and chemokine levels in the airway during RSV infection.

**Methods:** One hundred and ten children under 3 years of age with respiratory symptoms were enrolled in this study from November 2004 through January 2005. Nasopharyngeal secretions (NPAs) were gently aspirated and analyzed with RSV antigen, thereafter the concentrations of IL-4, IL-10, IFN- $\gamma$ , and RANTES were measured using an ELISA kit. We also investigated the prognosis of each child after 1 year by reference to clinical records or by interviews and re-evaluated the cytokine and chemokine levels.

**Results:** Of the subjects, 70 children were RSV positive and 40 were negative. Only 4 children were given a diagnosis of asthma by the pediatrician when NPAs were collected. The levels of IL-4, IL-10, and RANTES were significantly higher in the RSV-positive patients than RSV-negative patients with P values at 0.0362, 0.0007, and 0.0047, respectively. In contrast, there was no significant difference in the levels of IFN- $\gamma$ . Furthermore, there was a significant positive correlation between IL-10 and RANTES.

**Conclusions:** The increased production of IL-4, IL-10, and RANTES in the airway may play an important role in the pathophysiological mechanisms of RSV infection.

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