

Role of Respiratory Viruses in Childhood Wheeze: Insights from Brazilian Studies

Respiratory virus infection is an established cause of wheeze in pediatric population. A very important and robust studies shows that wheeze in childhood were triggered by a respiratory virus infection. There are some phenotypes of asthma/wheezing in pediatric population and respiratory viruses are the most common cause of wheeze in children.

Regarding importance of this issue, there are few studies in Brazil about wheezing and respiratory virus infection in children, but these researches groups are very consistent and respected in scientific community.

To investigate the role of viral infections, allergen sensitization, and exposure to indoor allergens as risk factors for acute wheezing Camara et al., evaluated one hundred thirty-two children 0 to 12 years of age who sought emergency department care for wheezing and 65 children with no history of wheezing. Detection of respiratory syncytial virus antigen, rhinovirus and coronavirus RNA, adenovirus, influenza, and parainfluenza antigens was performed in nasal washes. Total IgE and specific IgE to mites, cockroach, cat, and dog were measured with the CAP system. Major allergens from mites, cockroach, cat, and dog were quantified in dust samples by ELISA. In children under 2 years of age, infection with respiratory viruses and family history of allergy were independently associated with wheezing (odds ratio, 15.5 and 4.2; $P = .0001$ and $P = .008$, respectively). Among children 2 to 12 years old, sensitization to inhalant allergens was the major risk factor for wheezing (odds ratio, 2.7; $P = .03$). Some risk factors for wheezing previously identified in temperate climates were present in a subtropical area, including respiratory syncytial virus infection in infants and allergy in children older than 2 years. Rhinovirus was not associated with wheezing and did not appear to be a trigger for asthma exacerbations.

Chong Neto et al., in a cross-sectional study by applying a standardized and validated questionnaire (EISL, from Spanish: Estudio Internacional de Sibilancias en Lactantes) to parents of infants, aged 12–15 months, that attended 35 random Health Centers in Curitiba, south of Brazil, for routine immunization between August 2005–December 2006. Factors associated with recurrent wheezing (± 3 episodes) were studied using bivariate and multivariate analysis.

A total of 3003 parents answered the written questionnaire and 22.6% of their infants had recurrent wheezing. Colds starting after four months of age was protection factor. Recurrent wheezing in early life can predict asthma in older children. It is important to identify infants with recurrent wheezing and risk to develop asthma in the future.