Background

• Previous studies have shown that viral-induced wheezing illnesses in early life predispose to development of asthma.  
• Once asthma has developed, viral-induced respiratory infections are a known cause of exacerbations among children with asthma.  
• There are still children with asthma, however, who have exacerbations independently of viral illnesses.

Research Question

• No data exists that explores any characteristics unique to children with asthma who exacerbate with viral illnesses and those who exacerbate without viral illnesses.  
• This study aims to use the well-established COAST cohort of children from 6-11 years of age to ask if there is any difference between children who have asthma exacerbations with viruses and children who have asthma exacerbations without viruses.

Methods

• 259 children were followed prospectively from birth to adolescence in the Childhood Origins of Asthma (COAST) study, 102 met criteria for asthma at age 6 or 11 years.  
• Nasal samples were analyzed for respiratory viruses during exacerbations.  
• Respiratory viruses were identified by multiplex PCR.  
• Allergen-specific IgE were measured by Immucop performed at ages 6 and 11.

Results

• 60% of COAST children with asthma had exacerbations from ages 6-11.  
• Viruses were identified in 69% of exacerbations.  
• Children in the non-viral only and viral only groups had fewer exacerbations on average than children in the both group.  
• Indicators of atopy (e.g. total IgE and Aeroallergen sensitization) were important risk factors for both viral and non-viral exacerbations.

Conclusions

• Exacerbations secondary to viral illnesses are a known cause of exacerbations among children with asthma. Longitudinal characteristics of viral and non-viral exacerbations among children with asthma have not been completely defined.  
• Of those, 102 children had asthma at age 6 or 11 years.  
• Viral illness was associated with higher total IgE at age 6 (p=0.04) and asthma exacerbation.

References


Acknowledgments

Supported by NIH grants P01 HL70861 and U01 HL06824. We would also like to thank the COAST children, their families, and the COAST research staff for all of their efforts on this project.