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The Outcome of Children Admitted With Brochiolitis

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Abstract

Background and Objectives: Bronchiolitis has been one of the leading causes of infant hospitalization in the world, especially in the age group of less than one year. Susceptibility to both bronchiolitis and post-bronchiolitis wheezing has been found to be multifactorial including factors related to the host, environment and the virus itself. We studied recurrent episodes of wheezing among children with history of bronchiolitis.

Methods: Children treated for first episode of wheeze and admitted for clinically diagnosed bronchiolitis were included in the study (n=35). Detailed treatment history of children with wheezing, evidence of atopy, detailed family history, socioeconomic details and history of pets in the family were obtained in a pre-designed proforma.

Results: It was found that if wheeze of bronchiolitis had occurred below 12 months of age, the chance of recurrence is more than if wheeze had occurred after 12 months of age. Family history of asthma was found to significantly affect the recurrent wheezing among children (P value for father, mother and sibling was 0.001, 0.01 and 0.01 respectively). Education of parents and family size were also not found to affect the recurrent wheezing among the infants in this study.

Conclusion: Factors like atopy did not influence the outcome of bronchiolitis in terms of recurrence. Male infants are more likely to develop wheezing recurrence, and so was first attack of wheeze of bronchiolitis before 1 year of age. We were not able to identify any specific markers for wheezing recurrence.

Keywords: infants; recurrent wheezing; genetic influence; bronchiolitis

Introduction

Bronchiolitis has been one of the leading causes of infant hospitalization in the world, especially in the age group of less than one year. Susceptibility to both bronchiolitis and post-bronchiolitis wheezing has been found to be multifactorial including factors related to the host, environment and the virus itself. Bronchiolitis is a distressing, potentially life threatening respiratory illness that affects young babies. After a brief one to three day prodome of upper respiratory symptoms like fever, rhinorrhea etc, typical signs of bronchiolitis occur characterized by wheezing, dyspnea, respiratory distress, tachypnea and radiologic evidence of hyperinflation of the lungs. Most infants experience only a mild form of bronchiolitis, and they are managed on an outpatient basis. However, according to various medical reports, it is found that bronchiolitis associated with hospitalizations have increased considerably since 1980s.

The diagnosis of bronchiolitis is generally clinical; whether diagnostic tests change the management of the

disease is unclear. Given the high incidence of the disease, different treatment modalities have been in practice for some years. Some of these therapies are specific to the virus (e.g., rabivirin), while others are symptomatic (e.g., bronchodilators, corticosteroids). Evidence on their efficacy is still lacking.

The relative severity of the disease among vulnerable subpopulations suggests that some infants may benefit from prophylactic therapy. Hospitalization for bronchiolitis is a risk factor for persistent asthma to develop later in life. This forms the basis of the present study.

Materials and Methods

This was a retrospective study including children admitted to a tertiary care hospital with bronchiolitis from January 2009 to December 2012. Children treated for first episode of wheeze and admitted for clinically diagnosed bronchiolitis were included in the study. The data of the details of 50 children were taken from the Medical Records Department pertaining to the above period. Among the identified sample of 50 children affected, the observation was focused if these children had recurrent wheezing or asthma. All of the 50 children were recalled to the hospital or seen at the place of their domicile. Of the 50 cases, 35 children had been under regular follow-up. While 10 children could not be traced, 5 children did not give consent to participate in the study. The effective sample size was thus 35 in the study.

After obtaining consent from the parent/guardian, the children were subjected to regular clinical examination. Detailed treatment history of children with wheezing was taken. All children were screened for evidence of atopy such as insect bite allergy, allergic dermatitis, allergic rhinitis, allergic conjunctivitis, food allergy, utricaria and angioneurotic edema. Detailed family history was collected regarding the above atopic diseases. Socioeconomic details and history of pets in the family were also obtained. Other details of the children were recorded in a pre-designed proforma.

Results

The data collected was analyzed by SPSS 15.0. It was found that if wheeze of bronchiolitis had occurred below 12 months of age, the chance of recurrence is more than if wheeze had occurred after 12 months of age. Among children in the age group 6 to 12 months, 14.3% had recurrent episode of wheezing, whereas among children below 6 months, it was 12.5%. But chi square test showed that this difference was not statistically significant. Among male children, 12.5% had recurrent wheeze, and it was 9.1% among female children (P=0.77). While considering the number of rooms in household and its relation with wheezing, it was found that the results was not significant at 0.05 level. Education of parents and family size were also not found to affect the recurrent wheezing among the infants in this study.

Further it was found that children living in different types of houses did not differ in regard to recurrent episodes of wheeze since the chi square test was not significant (P=0.85). Family history of asthma was found to significantly affect the recurrent wheezing among children (P value for father, mother and sibling was 0.001, 0.01 and 0.01 respectively). History of previous illnesses such as cough, cold, fever or factors like birth weight, neonatal hospital stay etc. were also not found to affect the recurrent wheezing among children. C-reactive protein was found to be higher among children who had recurrent episodes of wheezing. Some children were found to have been administered salbutamol or adrenaline during their first visit, which indicate the severity of condition. Such children were found to have recurrent wheezing later (P=0.0001).

Discussion

The results of our study shows that the incidence of wheezing recurrence is more in children who had their first attack of bronchiolitis at the age of less than 6 months and 6 months to one year. The study by Ensigur and Tal shows that there is a reduction in recurrence rate as child gets older (1). Thus it can be inferred that babies presenting with first episode of respiratory syncytial virus infection below six months have more chances for recurrence compared to older children. Overcrowding was not found to affect wheezing recurrence nor was socioeconomic status, parents' education or living in a well-maintained house. Family history or personal history of atopy was not found to influence wheezing recurrence. Our study strongly suggests that genetic influence play a major role in recurrent wheeze/asthma by giving highly significant statistical correlation between paternal/maternal/sibling asthma with recurrent wheeze.

As per our results, moderate to severe bronchiolitis leads to more chances of getting recurrent wheeze. Those children with moderate to severe bronchiolitis need close follow up and health education as they are more prone to asthma. The fact that oxygen saturation at the time of admission and length of requirement of oxygen correlated with recurrence of wheeze in various studies is attested by the results of our study also (2). There was no correlation between low birth weight and wheezing in our study. This was in contrast with other major studies that showed that low birth weights have more chances of wheezing. This could be due to the small sample size of our study, also, we did not include who had very low weight at birth and who had received ventilatory support or had severe respiratory distress.

Conclusions

Factors like atopy did not influence the outcome of bronchiolitis in terms of recurrence. Male infants are more likely to develop wheezing recurrence, and so was first attack of wheeze of bronchiolitis before 1 year of age. We were not able to identify any specific markers for wheezing recurrence and none of the children in the study developed asthma later in their life.

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References

1. Tal A, Bavilski C, Yohai D, Bearman JE, Gorodischer R, Moses SW. Dexamethasone and salbutamol in the treatment of acute wheezing in infants. Pediatrics 1983; 71:13-8.
2. American Academy of Paediatrics: subcommittee on diagnosis and management of bronchiolitis. Paediatrics 2006; 118:1174-93.