

Asthma in preschool children: prevalence and risk factors

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Abstract

Background—The prevalence of asthma in children has increased in many countries over recent years. To plan effective interventions to reverse this trend we need a better understanding of the risk factors for asthma in early life. This study was undertaken to measure the prevalence of, and risk factors for, asthma in pre-school children.

Methods—Parents of children aged 3–5 years living in two cities (Lismore, n=383; Wagga Wagga, n=591) in New South Wales, Australia were surveyed by questionnaire to ascertain the presence of asthma and various proposed risk factors for asthma in their children. Recent asthma was defined as ever having been diagnosed with asthma *and* having cough or wheeze in the last 12 months *and* having used an asthma medication in the last 12 months. Atopy was measured by skin prick tests to six common allergens.

Results—The prevalence of recent asthma was 22% in Lismore and 18% in Wagga Wagga. Factors which increased the risk of recent asthma were: atopy (odds ratio (OR) 2.35, 95% CI 1.49 to 3.72), having a parent with a history of asthma (OR 2.05, 95% CI 1.34 to 3.16), having had a serious respiratory infection in the first 2 years of life (OR 1.93, 95% CI 1.25 to 2.99), and a high dietary intake of polyunsaturated fats (OR 2.03, 95% CI 1.15 to 3.60). Breast feeding (OR 0.41, 95% CI 0.22 to 0.74) and having three or more older siblings (OR 0.16, 95% CI 0.04 to 0.71) decreased the risk of recent asthma.

Conclusions—Of the factors tested, those that have the greatest potential to be modified to reduce the risk of asthma are breast feeding and consumption of polyunsaturated fats.

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Keywords: asthma; prevalence; risk factors; pre-school children

Asthma is a major public health problem in developed countries, especially in children. Ultimately we want to prevent asthma, not just to relieve its symptoms. However, the causes of asthma and the reasons for its increasing prevalence in the past few decades are not known. At present we can implement prevention strategies for asthma based on currently available evidence of risk factors. Some prevention strategies have been tested, including changes to early diet and/or to house dust mite exposure, but these have not been successful in significantly reducing the incidence of asthma for more than the first year of life. Clearly, better evidence of possible causal or preventive factors needs to be collected so that better prevention strategies can be developed. Risk factors for asthma have been studied extensively in school age children but there is little information about younger children. The advantage of studying preschool age children is that information about potential risk factors and their effects is collected closer to the time of disease inception. However, these children are not young enough to make disease misclassification a significant problem—that is, by misclassifying transient early wheeze as asthma. In this paper we

describe the epidemiology of asthma in preschool age children (3–5 years) in two rural Australian cities, one with a humid climate and close to the coast (Lismore) and the other a dry inland city (Wagga Wagga). We also investigate important putative risk factors for asthma, including dietary fatty acid intake, number of older siblings, breast feeding, and atopy, which have all been identified as being associated with asthma in older children.