Chapter 1

INTRODUCTION

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1.1 Context of the Study

Asthma is the most common chronic illness of childhood and is one of the most frequent reasons for visits to pediatricians. Data from the last three decades suggests that childhood asthma is increasing in prevalence and in severity, as demonstrated by increasing rates of hospitalization and mortality due to asthma. Asthma also negatively affects children during critical periods of growth and development and the annual cost of treating childhood asthma in the US is more than 2 billion dollars. Pediatric asthma has thus been identified as an important public health concern. A better understanding of the pathophysiology of childhood asthma has led to a wider range of treatment options and better management of the disease. However, assessment of childhood asthma is still made problematic by the lack of universally accepted definition. Furthermore, despite better knowledge of its pathophysiology, childhood asthma continues to be under diagnosed and under treated. Evaluation in the effectiveness of treatment is further restricted by limitations in our understanding of the epidemiology of the disease.

Ideally, an understanding of childhood asthma would most benefit from an examination of asthma incidence. In practice, however asthma incidence is very difficult to measure both because of the intensive long term monitoring required and the difficulty of establishing the date of onset of the condition. For these reasons, most studies of childhood asthma report prevalence. Asthma prevalence reflects both the incidence of asthma and average duration of the condition.

An increasing prevalence and severity of asthma has been reported worldwide. There are geographical variations of considerable magnitude in the prevalence of asthma during childhood and adolescence. The best
evidence on this aspect of epidemiology has come from the International Study on Asthma and other Allergic Disorders in children (ISAAC).\textsuperscript{1}

In phase 1 of the ISAAC study which ended in 1996, the ISAAC investigators reported the prevalence of wheezing (last 12 months) for 56 countries revealing rates up to five fold higher in child population in the 6–7 year age group and up to 15 fold higher in adolescence in the 13–14 year age group. This extraordinarily great difference and complexities of the pattern of the international distribution revealed by ISAAC study provides a clear indication that environmental factors play a role in the development of the disease. Territorial variation in the prevalence of asthma also helps us to hypothesize on the factors responsible for the distribution of the disease.

\section*{1.2 Need and significance of the present Study}

The prevalence of Bronchial Asthma is increasing all over the world. The present study aims to expose, the role of various putative environmental factors in Asthma. A vivid picture of the prevalence of this condition would be informative to paediatricians and helps to provide awareness among general population. This would in turn lead to proper referral of patient to centres and paediatricians for appropriate management of the case. We might also hit the nail on certain comorbid risk factors and thus contribute to disease prevention rather than control.

Recent reports show wide variation in the prevalence of asthma in the school going children from different geographical areas.\textsuperscript{1} But Indian studies are limited on asthma in children. Environmental factors including increasing exposure to air pollution, allergens, environmental tobacco smoke have been identified as risk factors for asthma.\textsuperscript{39} The present study is also visualized to assess geographical variation in the prevalence of asthma among children in this study area and to identify the role of possible
modifiable environmental factors that may ultimately lead to a reduction in the personal burden of this disease.

1.3. Statement of the Problem

The WHO in a joint workshop along with National Heart, Lung and Blood Institute (NHLBI) recently reported that asthma still remains underdiagnosed and undertreated throughout the world. The prevalence of asthma in Indian children currently estimated at 7–10% is on the rise and hyper–reactive airway disease would be affecting a large number of children in the coming decade. The present study was taken up to assess the prevalence and environmental predisposing factors of asthma, in school children aged 12–15 years.

1.4 Working definition of Terms

There is no universally accepted definition of Asthma. Wheezing and dyspnoea have always been considered the two most common symptoms of asthma. However, these symptoms are frequently absent in children. Instead recurrent or persistent cough is often the dominant symptom. Cough during sleep and after exercise are lesser known but are rather typical symptoms of the disease. To assess the prevalence of asthma, we include all children who were already diagnosed to have the disease and those with nocturnal cough (not associated with a common cold or chest infections). Allergic rhinitis was considered in any child who had an episode of sneezing with running/blocked nose in the absence of a common cold or flu–like illness or a child already diagnosed to have hay–fever. Atopic Eczema was diagnosed based on the presence of an itchy rash, present on and off for at least 6 month and also included those children with a known diagnosis of eczema. The questions
used to identify these conditions have been tested for sensitivity and specificity in phase one of the ISAAC study.¹

1.5 Hypothesis

1. There is a significant increase in the prevalence of asthma, allergic rhinitis and atopic eczema in three districts (Kottayam, Alappuzha and Idukki) of Kerala.

2. The common triggering factors predisposing to allergic disorders are dietary factors, exposure to vehicular pollution, exposure to smoke, exposure to pet animals, like dogs, cats, goats, hen etc. and passive smoking. It is hypothesized that the prevalence of allergic disorders in our locality is high.

3. There is a significant geographic variation in the prevalence of Bronchial Asthma, Allergic Rhinitis and Atopic Eczema in these three districts.

1.6 Scope

This study expects to serve as an important document for policy makers, government and health care personnel to improve lives of patients affected by Asthma. Prevention of the environmental trigger factors and parent education will help a lot to control Bronchial Asthma. The government may include all the anti asthmatic drugs in the essential list of drugs and may be made available free of cost for all patients.

1.7 Objectives

1. To study the prevalence of asthma in three selected districts of Kerala (Kottayam, Allapuzha and Idukki)
2. To study the prevalence of comorbid conditions of Bronchial Asthma like Allergic Rhinitis and Atopic Eczema.

3. To study the environmental predisposing factors of asthma.

4. To study the geographic variation in the prevalence and risk factors of asthma & other allergic disorders in the study area.