

## **SYNOPSIS**

Inhaled corticosteroid (ICS) therapy has revolutionized modern asthma management, but there are several drawbacks to the use of inhalers. Misconceptions, interrupted supply of inhalers and mismatching of the drug with the type of device used for their administration are some of the major problems encountered in the public sector services while their exorbitant cost is a major problem in the private sector health services in our country.

This research project was undertaken to establish

- (a) To identify Risk/ trigger factors and socio-demographic characteristics in childhood wheezing in children who presents to a family practice
- (b) Effectiveness of ICS in managing childhood asthma and their economic implications to the patient when used at the primary care level.
- (c) To describe patient/ parent satisfaction of the management of childhood asthma with inhaled corticosteroids (ICS)

National and international guidelines were used to select patients for initiation on inhaled steroids and the cost of treatment with ICS was compared with the cost of the disease itself at different levels. Parent satisfaction on this method of treatment was also assessed.

Childhood asthma being noted to be highly prevalent in the Kalutara district it was decided to study the risk factors, trigger factors and socio-demographic pattern of the disease in my practice.

Data was collected at the primary care unit of the Katukurunda Nursing Home in Kalutara and its branch clinic situated at the southern border of western province eighteen kilometers away at Aluthgama. It was done for a period of three years from July 2001 to July 2004. During this period patients in the 0-14 year age group who presented with asthma were included in the study group according to inclusion / exclusion criteria. The number selected for the study group was 1089 and a control group of 239 was selected from patients in the same age group who presented for other illnesses and had no history of asthma.

Sixty patients from the study group were later selected for inhaled corticosteroid treatment according to national and international guidelines. The patients in this study group were followed up for approximately one to one and a half years. Data was collected at several review visits, on average 14.7, 16.5, 16 and 17.8 weeks apart, respectively.

A risk factor assessment form (Annexure 2) was filled by all patients in the study group as well as the controls. Analysis of this data enabled the author to make several conclusions with regard to risk and trigger factors associated with childhood asthma in the Kalutara district.

All patients (n=1089) in the study group maintained an asthma diary in addition. The decision to initiate inhaled corticosteroids was made according to international guidelines and the national guidelines on asthma management.

Before starting inhaled steroids a consent form (CF-Annexure 3) was signed by the parent/guardian of those children selected for ICS therapy. Also, direct and indirect expenses incurred by the parent/guardian for the disease during the preceding period of three months were recorded on an expense assessment form (EXP- Annexure 4). Direct expenses, indirect expenses and the expenses for purchasing inhaled steroids with spacers were recorded at each visit. This data was analysed to arrive at conclusions on the cost-effectiveness of inhaled steroids.

All parents/guardian of children who were on inhaled steroids marked a visual linear analogue scale (Annexure 5) at each visit to indicate their satisfaction on the clinical response of the child's condition to ICS therapy.

Findings of this study reveal that a family history of eczema and asthma are risk factors for childhood asthma. Smoking in the presence of the child proved to be a significant risk factor for childhood asthma.

According to this study it was shown that children who got common cold and sneezing more frequently had a greater chance of developing wheezing. Consumption of chilled drinks was perceived by the parents/ guardian as trigger factors for childhood asthma.

Using kerosene oil as a fuel for cooking increased the risk of childhood asthma.

Regarding ICS therapy, the study revealed that only 1% of patients with asthma require ICS therapy when they present below 24 months of age. Around 5% of Children who presents with childhood wheezing between 25-60 months of age need ICS therapy while about 11% need ICS when they present with childhood wheezing after 61 months of age. Episodes of asthma were markedly reduced from 7 attacks to 1 attack per month when inhaled steroids were used for 3 months. The findings also reveal that direct and indirect expenses gradually reduce when ICS therapy is used over a period of time and there is a decline in total expenses in managing childhood asthma.

The satisfaction score of parent/guardian of patients on ICS therapy increased with each visit, indicating improvement in the patient's disease status with continuous use of inhaled corticosteroids.

In conclusion, ICS therapy when used according to national and international guidelines is very cost effective and satisfying to the patient and family, and reduces the health expenditure on asthma incurred by the population studied in this project.