

# **TO STUDY THE EPIDEMIOLOGICAL ASPECTS IN DETERMINING THE PREVALENCE AND EXPRESSION OF ASTHMA PHENOTYPES IN THE URBAN POPULATION OF NORTH CHENNAI**

**Keywords:** Asthma heterogeneity, Asthma phenotypes, Sputum cytology, personalised management

## **ABSTRACT**

### **INTRODUCTION:**

There has been a shift in the paradigm of asthma, from a single-disease concept toward a greater recognition of asthma as a complex, chronic disease with marked clinical heterogeneity. The expression of asthma is multidimensional, including variability in clinical, physiological, and pathological parameters. Classification requires consideration of these disparate domains in a unified model.

### **AIMS AND OBJECTIVES:**

1. To study the epidemiology of bronchial asthma phenotypes in urban population of North Chennai.
2. To assess the influence of environmental exposure on the prevalence and expressions of various phenotypes of bronchial asthma.

### **METHODOLOGY:**

We performed a cross sectional study on patients attending to our OPD with obstructive symptoms. Patients with significant post bronchodilator reversibility after spirometry were included in our study (n=250). Information was collected regarding the demographic data and various environmental and biological factors that influence the expressions of asthma in all individuals along with sputum cytology and Absolute Eosinophil Count.

### **RESULTS:**

Among the 250 subjects included in our study, four distinct clinical phenotypes were allergic 182(72.8%), asthma with obesity 20(8.0%), aspirin evoked 10(4.0%) and smoking related 38(15.2%) and two major cellular phenotypes were eosinophilic 182(72.8%) and neutrophilic 47(18.8%). Chi-square test was done by analysing the environmental and biological factors, mode of treatment and symptom control among the allergic and non-allergic phenotypes. The subjects with allergic phenotype had better symptom control in comparison to non-allergic phenotype (96% vs 59%) and the difference was statistically significant (Chi-square value 57.298; df=1; P<0.001).

### **CONCLUSION:**

Phenotyping of asthma serves as a stepping stone toward the practice of personalised treatment. Although asthma is a disease of westernised population, our study concludes that asthma is a disease of all irrespective of socio-economic status. Phenotype based asthma management would reduce prescribing wrong drugs to wrong patients. It helps to decrease the burden of “difficult to treat” asthma phenotypes in our community.