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Original Research Paper

Paediatrics

STUDY ON RISK FACTORS FOR ASTHMA IN CHILDREN ADMITTED IN GGH, GUNTUR.

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KEYWORDS :

1. INTRODUCTION:

Asthma is being the leading cause of hospitalization for children, it is one of the most important chronic conditions causing elementary school absenteeism. The risk of developing asthma depends on a variety of predisposing factors, both hereditary and environmental. Risk factors are: genetic predisposition (family history of atopy or asthma); perinatal factors (low birth weight, prematurity); exposure to a variety of allergens; upper respiratory tract infections; air pollution; tobacco smoke , diet and obesity. Substantial increase in the incidence of asthma over the past few decades, and geographic variation prevalence rates, supports the hypothesis that environmental factors may play an important role.

2. Objectives

To identify the risk factors of disease in children with asthma admitted in GGH,GUNTUR.

3. MATERIALS AND METHODOLOGY

Cross sectional study

A total of 50 children age between 4-12 years of age presenting to department of pediatrics at GGH, Guntur

Inclusion criteria:

Children of either gender aged 4-12 years with bronchial asthma

Exclusion criteria:

Evidence of active concomitant pulmonary disease other than asthma-Evidence of concomitant chronic systemic disease.

4. RESULTS

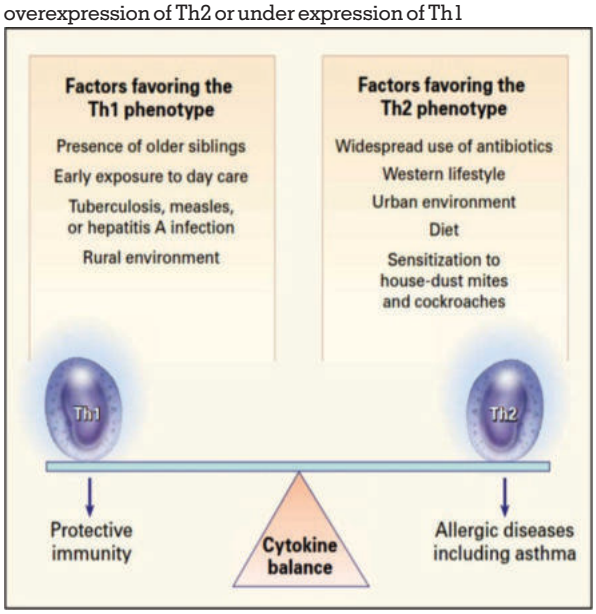
out of 50 children enrolled in study majority are 4-8 years old (48%) with male children 32 (63%), female children 18(37%) most of the children are from urban areas (60.2%) 30 out of 50 children were born with normal birth weight (60%) 29 out of 50 children had positive family history of allergic disorders (58.9%)30 out of 50 children had at least one coexisting allergic conditions (59.4%)14 out of 50 children had at least one guardian smoking at home(28%) 15 out of 50 children had exposure to pets (32%) 29 out of 50 children were started on cows milk before 1 year of age.(58%) Indoor pollution and outdoor pollution constitutes 6% and 15% risk to children respectively.

5. DISCUSSION

Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory airflow limitation. Various environmental and genetic factors play a role in pathogenesis of asthma. Airflow limitation is recurrent and caused by a variety of changes in airway which include broncho constriction, airway edema, airway hyperre sponsiveness, airway remodeling.

Host factors:

Innate immunity-Research has focused on an imbalance between Th1 and Th2 cytokine profiles and evidence that allergic diseases, and possibly asthma, are characterized by a shift toward a Th2 cytokine-like disease, either as overexpression of Th2 or under expression of Th1



Genetics:

5 asthma genes or gene complexes have now been identified including ADAM33, PHF11, DPP10, GPRA and SPINK5. Various studies have shown family history of asthma being an important predictor of asthma in children with boys being more asthmatic than girls.

Environmental Factors:

Two major environmental factors have emerged as the most important in the development, persistence, and possibly severity of asthma: airborne allergens and viral respiratory infections. In the susceptible host, and at a critical time of development both respiratory infections and allergens have a major influence on asthma development and its likely persistence.

Other factors :

Tobacco smoke, air pollution, food items and antenatal factors have also been associated with an increased risk for the onset of asthma.

Environmental tobacco smoke (ETS) –

A study of random community based populations in Michigan and Massachusetts showed the children of smokers were more likely to have asthma, particularly severe asthma, than children of non-smoking parents. In utero exposure to environmental tobacco smoke has also been found to increase the likelihood for wheezing in the infant.

Air pollution:

A number of studies have found an increased prevalence of asthma or asthma symptoms in children who live near roadways with high traffic counts.

Food:

It has been demonstrated that children who have food allergy tend to develop asthma at a younger age and also have more severe asthma symptoms. The common food items that have been implicated in food allergies are egg, nuts, milk and milk items, and certain fruits. An Indian Study from Kolkata implicated banana, brinjal, wheat and egg among the common food allergies noted in this region.

Obesity:

It results in important changes in the mechanical properties of the respiratory system which could explain the occurrence of asthma. However, there are also plausible biological mechanisms whereby obesity could be expected to either cause or worsen asthma. These include co-morbidities such as gastro-oesophageal reflux, complications from sleep-disordered breathing, breathing at low lung volumes, chronic systemic inflammation, and endocrine factors, including adipokines and reproductive hormones.

Antenatal factors:

Birth order, Maternal allergen exposure, Maternal smoking during pregnancy Obstetric complications ,Elective cesarean section are the possible antenatal influences on development of asthma, allergy.

6. CONCLUSION

Parental asthma, allergic rhinitis, atopic dermatitis ,lower respiratory tract infections, male gender, low birth weight, tobacco smoke exposure, reduced lung function at birth, formula feeding are some of the early childhood risk factors for asthma. Asthma severity fluctuates over time and is influenced by trigger factors. This study shows both genetic and environmental factors play a role in age of onset, persistence, severity and control of asthma. So reduction in exposure to environmental risk factors helps us in controlling the disease and results in decreasing the severity of asthma.

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