

Original Research

Association between dietary habits and asthma severity in children

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ABSTRACT:

Background: To assess the relationship between dietary habits and severity of asthma in children. **Materials & methods:** A total of 50 children were taken under consideration. The cases were children with persistent asthma (mild, moderate or severe) while the controls were those with intermittent asthma. **Results:** Children with age group of 4 to 14 years were considered. Control group has 20 cases whereas rest are the case group children. A chi-square test was used. Data was collected and results were obtained. No significant association was observed between dietary habits and severity of asthma. However, P-value was significant for obesity. **Conclusion:** There is no significant relationship between dietary habits and severity of asthma in children.

Keywords: asthma, children, diet.

Received: 23 April, 2022

Accepted: 26 May, 2022

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This article may be cited as: Amandeep, Aarti. Association between dietary habits and asthma severity in children. Int J Res Health Allied Sci 2022; 8(3):31-32.

INTRODUCTION

Asthma is a chronic inflammatory disease of the airways, affecting around 330 million individuals worldwide. Out of 359 diseases, asthma has been classified as the 30th and 32nd cause of disability-adjusted life years (DALYs) in females and males, respectively. ⁽¹⁾ It is the most common chronic disease in children ⁽²⁾. The prevalence of asthma has nearly doubled over the last decades, especially in Westernized countries and developing countries with rapid urbanization. ⁽³⁾ This cannot be explained by genetics alone and it has been hypothesized that this increase is a consequence of changing environmental and/or lifestyle factors. ⁽⁴⁾

Factors for the increasing asthma rates are not totally understood, lifestyle and diet may be important contributors. While intake of nutrient dense foods such as fruits, vegetables, and fish were found to be inversely associated with asthma symptoms and atopy among children and adolescents, other caloric dense foods that are high in sugar and fat were associated with an increased prevalence of asthma symptoms. It is possible that the effects of a certain food or nutrient are, in fact, a result of the synergistic effect of multiple diet components, and so investigating a diet

pattern in relationship to diseases such as asthma may be more informative. ^(5,6,7)

MATERIALS & METHODS

A total of 50 children were taken under consideration. The cases were children with persistent asthma (mild, moderate or severe) while the controls were those with intermittent asthma. Dietary habits were determined based on the consumption of specific foods or food groups in the past 12 months. Specific food or food groups included: milk or yoghurt, meats (bovine, pork, and poultry), vegetables (leafy and non-leafy) were included.

RESULTS

A total of 50 children were included in a study. Children with age group of 4 to 14 years were considered. Control group has 20 cases whereas rest are the case group children.

A chi-square test was used. Data was collected and results were obtained. No significant association was observed between dietary habits and severity of asthma. However, P-value was significant for obesity.

Table 1: Characteristics of study population

Variables	Persistent asthma N= 30	Intermittent asthma N= 20	P- value
Gender male	22	13	0.03
Obesity	13 (43.4%)	6 (30%)	<0.001*

* : significant

Table2: Association between dietary habits and severity of asthma

Food consumption	Persistent asthma	Intermittent asthma	P- value
Milk	26 (86.7%)	18 (90%)	0.8
Vegetables	22 (73%)	12 (60%)	0.5
Meat	21 (70%)	19 (95%)	0.23

DISCUSSION

To assess the relationship between dietary habits and severity of asthma in children. The prevalence of asthma has nearly doubled over the last decades. Twentieth century changes in environmental and lifestyle factors, including changes in dietary habits, physical activity and the obesity epidemic, have been suggested to play a role in the increase of asthma prevalence and uncontrolled asthma worldwide.^(8,9) A large body of evidence has suggested that obesity is a likely risk factor for asthma, but mechanisms are still unclear. Regarding diet and physical activity, the literature remains inconclusive.⁽¹⁰⁾

One of the study showed Cases (n=268) were children (3-12yr) with persistent asthma and age-matched controls (n=126) were those with intermittent asthma. Dietary habits were determined based on food consumption in the past 12 months classified as frequent (≥ 3 times per week) or infrequent (never or < 3 times per week). Nutritional status was classified into two categories according to WHO Child Growth Standards: obese: $> 2Z$ -score of BMI-for-age; non-obese: $\leq 2Z$ -score of BMI-for-age. No significant association was observed between frequency of consumption of specific foods, food groups, or dietary pattern (pro- or contra-Mediterranean diet) and the severity of asthma.^(11,12) In this study, children with age group of 4 to 14 years were considered. Control group has 20 cases whereas rest are the case group children. A chi-square test was used. Data was collected and results were obtained.

Several studies have evaluated the impact of dietary patterns on asthma and asthma outcomes in children and adolescents, with the Mediterranean diet pattern being a common approach. Recently, found a relationship between a Mediterranean diet score and asthma status in a subset of the Peruvian population used in this analysis.⁽¹³⁾ According to our study, no significant association was observed between dietary habits and severity of asthma. However, P- value was significant for obesity.

CONCLUSION

There is no significant relationship between dietary habits and severity of asthma in children.

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