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Risk Factor of Childhood Bronchial Asthma in Iraqi Community.

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ABSTRACT

The aim of present study threw alight on some risk factors of bronchial asthma in childhood. Cross sectional study, enrolled asthmatic children patients who attending Center for Allergy & Asthma in Diwanyiah, Teaching hospital, data collection by questionnaire which is a modification of the ISAAC (International Study of Asthma and Allergies in Childhood), data analysis by application of SPSS program version 18. Analysis. $P < 0.05$ was considered significant. Ninety seven asthmatic children with age range from 1-15 years, mean age 8.5±3.7 years, Male to female ratio 1:1.4, thirty four percent were overweight, 21,8% were obese. Result reveal 52% of asthmatic children had family history of asthma, while 23% of them give family history allergic rhinitis and 11.3% of them had family history of eczema, 96% had history of family member smoking. The study concludes certain risk factors being associated with asthma namely positive family history of asthma, passive smoking, urban residence, high body mass index.

Keywords: asthma, risk factors family history, Obesity, overweighing, smoking.

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INTRODUCTION

Asthma is one of the most common chronic conditions affecting children, yet much remains to be learned of its etiology (1). Although genetic predisposition is clearly evident, gene-by-environment interaction probably explains much of the international variation in prevalence rates for allergy and asthma (2). Environmental factors such as infections and exposure to endotoxins may be protective or may act as risk factors, depending in part on the timing of exposure in infancy and childhood(3). Some prenatal risk factors, including maternal smoking, have been firmly established, but diet and nutrition, stress, use of antibiotics and mode of delivery may also affect the early development of allergy and asthma(4,5). Later in childhood, putative risk factors include exposure to allergens, breastfeeding (which may initially protect and then increase the risk of sensitization), family size and structure, and sex and gender(3). In adulthood, recurrence of childhood asthma may be just as common as new-onset asthma, which may have an occupational basis. A better understanding of these risk factors may eventually lead to opportunities for primary prevention of asthma (1).

PATIENTS AND METHODS

Study Design

Cross sectional study, enrolled asthmatic children patients who attending Center for Allergy & Asthma in Diwanyiah Teaching hospital, from march 2018-june 2018. This study was performed to determine some of the risk factors of childhood asthma

Data Collection

Ninety seven patients were included who reported a history of more than one reversible attack of shortness of breath and/or cough in the last 12 months, The diagnosis based upon the patient medical history, a questionnaire containing personal details with type and duration of disease has been dependent for each patient's information aspects, which documented by the physician and history of asthma, The questionnaire which is a modification of the ISAAC (International Study of Asthma and Allergies in Childhood) questionnaire and then translated to Arabic. included questions concerning sex, age, height, weight, , tobacco smoke exposure habits, family asthma history and health symptoms related to asthma prevalence: asthma previously diagnosed, wheezing, dysponea, Exposure to animal is considered present when the patient himself has contact with specified animal directly and persistently.

Additionally, Body Mass Index (BMI) was calculated by dividing weight in kilograms by height in meters square, using the formula: **BMI** = Weight [in Kg] / Height**2** [in meters] = Kg / m2 Less 18 consider underweight 18-24.9 normal weight, overweight if BMI is (25-29.5 kg/m2), Obese if BMI >30 .

Permission to conducted the study was obtains from health authorities. Discrete variables presented as number and percentage, were analyzed using chi square. continuous variables presented as mean ±SD (standard deviation) ,were analyzed statistically using student t-test.by application of SPSS program version 18. Significance was set at the $P \leq 0.05$ level in all analyses.

RESULTS

A study enrolled ninety seven asthmatic children with age range from 1-15 years, mean age 8.5±3.7 years, age at onset of disease 3.8 ±2.4 years, and disease duration 5 ± 3.7 years. Male to female ratio 1:1.4 , male constitute 58% and female 42%. Out 97 of patients, 20.6% in age group 1-4 years, 42.2% in age group5-10 years 37.2% in age group 11-15 years as in table 1.

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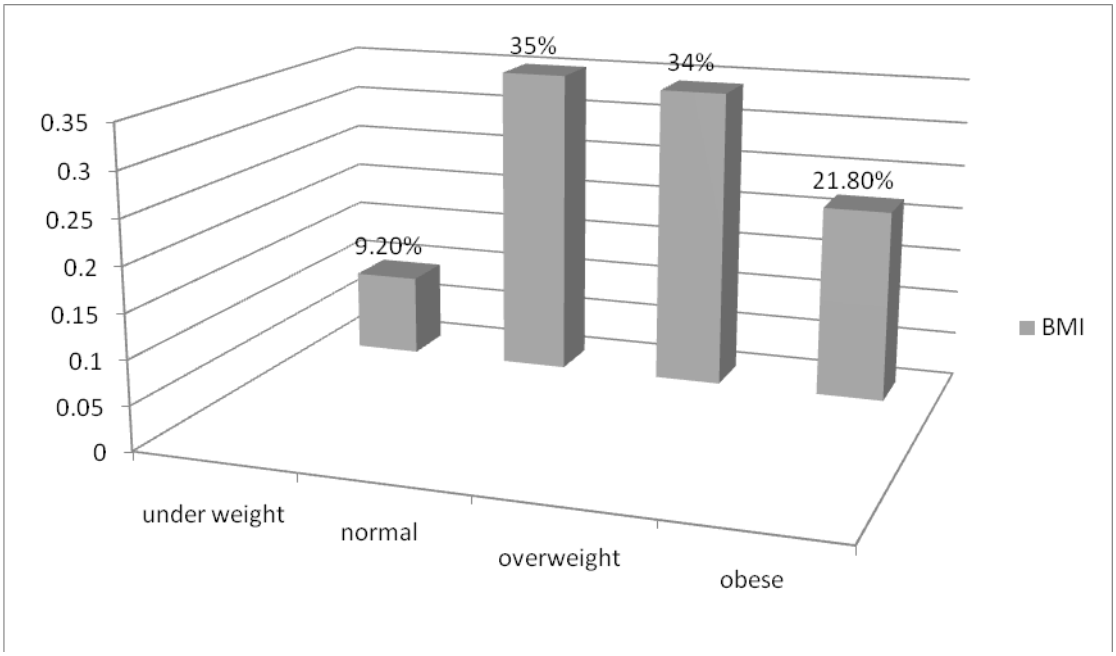
Table 1: age group distribution

Age	Asthma	
	No.	%
1-4 year	20	**20.6%**
5-10 year	41	**42.2%**
11-15 year	36	**37.2%**
Total	97	

In figure1, reveal 9.2% of asthmatic children were under weight, 35% were normal weight, 34% were overweight, 21,8% were obese.



In regarded to risk factors, our result reveal 52% of asthmatic children had family history of asthma, while 23% of them give family history allergic rhinitis and 11.3% of them had family history of eczema. Six percent who complain of previous atopy, 96% had history of family member smoking. About residency of sample, 73% of them resident in urban region, 27% living in rural region. Fifteen point four had history of skin allergy. Forty point three percent give history of bird contact or other animal in home, 11.3% had history of chemical pollutant, as in table 2.

Table 2: show prevalence of risk factors in study sample.

Risk factors		**Asthma patients**	
		No.	%
Family history of asthma		51	**52%**
Family history of allergic rhinitis		22	**23%**
Family history of eczema		11	**11.3%**
Personal history Of atopic		6	**6%**
Family smoking member		67	**96%**
Residence	Urban	71	**73%**
	Rural	26	**27%**

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Skin Allergy	15	**15.4%**
Direct bird contact or other animals	43	**44.3%**
Chemical pollutant	11	**11.3%**

DISCUSSION

Asthma is more common in developing countries. Environmental factors and diet may explain the difference in prevalence of asthma in children. Because of rapid economic improvements in developing , many of its cities are at different stages of modernization, resulting in increased prevalence of asthma (6, 7).

The study shows that childhood bronchial asthma in male 58% and female 42%, with a male to female ratio of 1:1.4 other study in Baghdad conclude asthma is more than twice more common in males (67.7%) than females with a male to female ratio of 2.1:1(13). while in Tikrit (2009) study reported 52% male and 48% female of study sample (14) .

Other study in Baghdad by Batool. A. Al-Haidary 2015 showed that asthma is more predominant among males rather than females in 2.5:1 ratio (15).

Regarded BMI in our result of study 55.5% of asthma patient were over weight or obese, similar result by Batool. A. Al-Haidary in study done in Baghdad 2015 which reveal 52% of patient were over weight or obese (15), other study by Ripabelli 2013 in Italia estimated high percent of over weight or obesity in asthmatics patient reach to 62% (16). These result are agreement with previous international studies (17) which indicated that overweight and obese children/adolescents are at greater risk of developing asthma

In our study 52% of patient had family history of asthma,23% family history of allergic rhinitis and family history of eczema 11.3%. These result coincide to study in Baghdad by Muhi K. Aljanabi 2010 which reported family history of asthma and allergic rhinitis in patient with asthma 50%, 27% respectively (13), study in tikrit reported 53% (14).

Another result of study there were 96% of patient recorded history of family member smoking in home, high prevalence of family member smoking also reported in study doing Baghdad by MuhiK. Aljanabi 2010 which reported 80.6% (13) , and by Batool. A. Al-Haidary 2015 recorded as low as 54% (15) ,in tikrit 2009 reported 41% (14) .

It is logical to think of cigarette smoke as irritant to the respiratory passages , provoking asthma in a genetically predisposed child. Reducing the prevalence of smoking in the adult population and particularly in woman of childbearing age , would significantly reduce the prevalence of wheezing in young children(13).

When studying the residency of the patients, we found that those who are residing in the urban area were having higher rate of asthma (73%) compared to those in rural area (27%), these result agreement with study by Waqar Al –Kubaisy 2012 in Baghdad which reported 80% residence in urban (18) and study by Muhi K. Aljanabi 2010 recorded 75% living in urban(14).Although several studies have demonstrated a lower risk of development of atopic and asthma with exposure to farm animals in early life, the findings of studies of the influence of exposure to domestic cats and dogs have been inconsistent (17). In some studies, exposure to cats was associated with a greater risk of allergic sensitization, whereas other studies showed a lower risk. Exposure to dogs may be protective not only against the development of specific sensitization to dog allergen but also against other sensitization (e.g., to house dust mites) and asthma. Study that observed associations between exposure to cats and dogs and childhood asthma are consistent with previous study by Salam et al.(19) but contrast with other studies which found pets were protective(20).

CONCLUSION

The study concludes certain risk factors being associated with asthma namely positive family history of asthma, passive smoking, urban residence, high body mass index.

Conflicts Of Interest: There is no conflicts of interest.
Source of funding- Self
Ethical clearance: The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/ have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity.

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