

Asthma in Adults; Epidemiology, Risk Factor and Patterns of Presentation: A Cross Sectional, Questionnaire Based Study in Baghdad Teaching Hospital

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Abstract

Background: Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role, leading to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing. Although clinicians are satisfied with this definition, epidemiologists are still searching for their own. Studies on asthma used either questionnaire or histopathophysiologic way to define asthma each has its privileges and drawbacks. Asthma has become more common in both children and adults around the world in recent decades. Its prevalence has been dramatically increased during last few years, but still no definite asthma prevalence is specified in Iraq.

Aim of the Study: To define the prevalence of some risk factors in Iraqi asthmatics, patterns of presentation, and to find the level of education about asthma among the patients, this study was conducted.

Method :Two hundred twenty five asthmatic patients diagnosed by questionnaire, supported by clinical detection of wheeze, were included in a cross sectional study done in outpatients clinic, Baghdad Teaching hospital in Baghdad, collected from December 2007 to March 2008.

Results: mean age for the study sample is 38 years, 50 are men and 175 are women. Normal body mass index reported in 86 patients, 78 patients (33.7 %) have positive family history of allergic diseases, 110 patients reported exposure to environment with house dust mite, and 49 patients (21.7%) were passive smoker. Persistent symptoms are commonest pattern of asthma reported in 157 patients. Eighty eight patients use their treatment regularly, and 31 patients used steroid inhalers. Proper usage of inhalers as assessed by demonstration found in only 39 patients. Spirometry or pulmonary function tests are performed only in 11 patients (4.9 %) for diagnosis or asthma follow-up.

Conclusions: High body mass index, exposure to an environment in favored for house mite inhabitation, family history of atopy, history of allergic diseases, Gastro-intestinal symptoms suggestive of gastroesophageal reflux disease and Allergic rhinitis and sinusitis are the commonest risk factors reported by asthmatics. Irregular treatment with inhalers especially corticosteroid and their improper usage are still widely spread among our patients, also spirometry and other pulmonary function tests are still rarely used in diagnosis, and management of asthmatic patients.

Key words: asthma, allergic diseases, inhalers

الخلاصة

المقدمة: الربو هو اضطراب مزمن للمسالك الهوائية، تلعب دورا في تكوينه عدد من الخلايا وبعضها من مكوناتها، مما يؤدي الى نوبات متكررة من الازيز، ضيق النفس و السعال . رغم اقتناع الاطباء في تعريفهم هذا فلا زال اختصاصيو الوبائيات يبحثون عن تعريفهم الخاص بالربو. تقوم الدراسات حول الربو الان باعتماد طريقة الاستبيان او استعمال التعريف الهستوباثوفسلجي للربو، وكلاهما له من المحاسن والسلبيات. لقد اضحى البرو اكثر شيوعا في العقد الاخير وفي

الاطفال و الكبار على حد سواء, وان معدل انتشار المرض هو بازدياد مضطرب في السنوات الاخيرة. ولازال العراق يفتقر الى احصاء لمعرفة معدل انتشار الربو فيه.

الهدف: لايجاد معدل انتشار عوامل الخطورة لمرضى الربو العراقيين, انماط الاستعلان, ولمعرفة مستوى الوعي بالمرض لدى المرضى المصابين بالربو و خصوصا المعلومات الخاصة بالعلاج.

الطرق: متتان وخمسة وعشرون مريضا مصابا بالربو تم تشخيصهم بطريقة الاستبيان المدعوم بالكشف السريري للاريز, ادخلو في دراسة وصفية. اجريت الدراسة في العيادة الخارجية لمستشفى بغداد التعليمي للفترة من كانون اول 2007 ولغاية آذار 2008.

النتائج: متوسط عمر مرضى الدراسة هو 38 عاما, 50 مريضا منهم ذكورا و175 اناثا. 86 مريضا كان مؤشر كتلة الجسم لديهم طبيعي, 78 مريضا (33,7%) لديهم تأريخ عائلي للأمراض الارجية, 110 مريضا لديهم تعرض الى غبار السوس المنزلي. في مرضى الربو المصابين بارتفاع ضغط الدم وجد ان حاصرات بيتا هي اكثر ادوية معالجة ارتفاع ضغط الدم استعمالا (19 مريض (39,59%). الاعراض المستديمة هو نمط الاستعلان الاكثر شيوعا في مرضى الربو وجد في 157 مريضا, 88 مريضا يستخدمون علاجهم بصورة منتظمة, بينما 31 مريضا يستخدمون بخاخ الكورتكستيرويد. استخدام البخاخ بصورة صحيحة وجد في 39 مريضا فقط فحوص بالمشاهدة. تم اجراء فحص وظائف الرئة و قياس التنفس في 11 مريضا فقط (4,9%).

الاستنتاجات:

1. مؤشر كتلة جسم عالي. التعرض الى السوس المنزلي. تأريخ عائلي للتأهب للأرجية و تأريخ اصابة بالامراض الارجية هي عوامل الخطورة الاكثر شيوعا في مرضى الربو.
2. التهاب المرئ الجذري, التهاب الانف و الجيوب النفية الارجية ممكن تزامنها مع الربو و تشخيصها و علاجها الصحيح ذو فائدة في علاج الربو و السيطرة عليه.
3. الجهل بمرض الربو كمرض مزمن. الاستخدام الامثل لادوية الربو المتوفرة لازال منتشر بين مرضى الربو والى حد ما بين الكادر الطبي المعالج له.
4. قياس التنفس و فحص وظائف الرئة لاتوال غير معتمدة بين الاطباء في تشخيص الربو و علاجه.

Introduction

Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role: causes recurrent episodes of wheezing, breathlessness, chest tightness, and coughing. These episodes cause airflow obstruction, often reversible either spontaneously or with treatment ⁽¹⁾. Although, physicians are apparently satisfied with the above definition, but researchers and epidemiologists are still not agreed on their own ⁽²⁾, so many studies ⁽³⁾ are conducted worldwide to establish such criteria. Asthma is one of the most common chronic diseases in the world. It is now estimated that as many as 300 million people of all ages, and all ethnic background, suffer from asthma and the burden of this disease to governments, health care systems, families, and patients is increasing worldwide, although the prevalence is not universal, it is as high as 18.4 % in Scotland, and as low as < 1 % in

Indonesia and Macau ⁽⁴⁾. Asthma has become more common in both children and adults around the world in recent decades. It is estimated that there may be an additional 100 million persons with asthma by 2025 ⁽⁵⁾. Asthma accounts for about 1 in every 250 deaths worldwide, many of the deaths are preventable ⁽⁶⁾. The mean prevalence of asthma in Middle East is about 5.8 % ⁽⁷⁾, generally within low prevalent areas. Gap is remained between available medical knowledge and medical therapy and its utilization for the benefit of asthmatic population in the Middle East. Under-diagnosis of asthma is a common problem. In terms of management, both under-treatment and treatment different from that recommended by the national and international guidelines commonly occur. In particular, there is an inadequate use of inhaled corticosteroids in the long-term treatment of asthma ⁽⁸⁾.

Patients and Method

Two hundred twenty five asthmatic patients were included in a cross sectional study, done in outpatient clinic, Baghdad Teaching hospital in Baghdad, collected from December 2007-March 2008. Those who reported a personal history of more than one reversible attack of shortness of breath and/or cough in the last 12 months, in the absence of suggestion for another diagnosis, supported by clinical finding of diffuse rhonchi as reported by two independent internist physicians, has been included. Definite history of active smoking, or ex smoking, Age less than 13 years, interstitial lung diseases and any clinical suspension of other diagnosis than asthma, have been excluded. Those who enrolled in the study were asked to answer a premade questionnaire form. Body mass index (BMI) = body weight in kg/ (body height in cm²). Normal BMI (< 25 kg/m²), overweight if BMI is (25-29.5 kg/m²), Obese if BMI = (30-40 kg/m²), and morbid obese if BMI is (>40 kg/m²)⁽⁹⁾. Exposure to animal is considered present when the patient himself has contact with specified animal directly and persistently, while eliciting house dust mite exposure considered positive if the patient reporting house environment suitable for the house mite inhabitation like presence of bedding, sofas, carpets, or any woven material with high humidity, especially when the patient is responsible himself for cleaning of sofas or carpets. Pattern of clinical presentation is considered *mild intermittent* if symptoms occur ≤ 2 times per week daytime and ≤ 2 times a month at night and the patient is asymptomatic between exacerbations, *mild persistent* if symptoms > twice / week but < once /day and >2 times a month at night, *moderate persistent* if symptoms occur daily and > 1 time a week at night, and

considered *severe persistent* if the symptoms occur continuously with frequent nocturnal symptoms⁽¹⁰⁾. Testing the knowledge of proper use of inhaler was done by observed trial of using the inhaler.

Results

Of the two hundred twenty five patients included in the study, 175 are women and 50 are men, their age ranged between 12-70 years with a mean 38 years, in all age group women outweighs the number of man (table 1). The of family history of allergic diseases is reported in 76 patients (33.7%), the types of family history of allergic diseases seen in table (2). Direct house dust mite exposure is the commonest risk factor reported by 110 patients (48.8 %), followed by passive smoking 49 patients (21.7 %), while other risk factors prevalence seen in table (3). Although combination of more than single allergic co-illness is commonly reported in asthmatic, allergic rhinitis is the most allergic co-illness reported predominantly table (4). Iraqi asthmatics in our study usually have mild persistent pattern (72 patients 32 %), while moderate, severe persistent and mild intermittent asthma seen in 54 (24 %), 31 (13.8%) and 68 (30.2%) respectively. 137 patients (60.9%) used their therapy as an on need base, while only 88 patients (39.1%) use it regularly. Those asthmatics used steroid inhalers are only 31 (13.7%). Those asthmatic patients performed pulmonary function tests (PFT) and spirometry as part of diagnosis or followed up are only 11 patients (4.9%), Table (5) reported our patients' knowledge about their disease and some of treatment facts.

TABLE (1) Demographic parameters of patients with asthma

Parameter		Patients	
		No	%
Gender	<i>Man</i>	50	22.2
	<i>Women</i>	175	77.8
Age	<i>Range</i>	12-70 yrs	
	<i>mean</i>	38	
Age group:			
< 20 yrs	<i>Man</i>	14	26.9
	<i>Women</i>	38	73.1
20-40 yrs	<i>Man</i>	32	34.1
	<i>Women</i>	62	65.9
>40 yrs	<i>Man</i>	4	5.1
	<i>Women</i>	75	94.9
Body Mass Index (BMI)	<i>Normal < 25</i>	89	39.5
	<i>Over Weight 25 - <30</i>	103	45.7
	<i>Obese 30-40</i>	28	12.5
	<i>Morbid Obese >40</i>	5	2.3
Total		225	

TABLE (2): Family history of allergic diseases in asthmatic patients

Presence of family history of allergic diseases	Patients	
	No	%
Positive	76	33.7
Negative	149	66.3
Types of Allergic Diseases		
<i>Allergic Rhinitis</i>	35	15.5
<i>Asthma</i>	26	11.5
<i>Allergic Laryngitis</i>	3	1.3
<i>Allergic sinusitis</i>	18	8
<i>Skin Allergy</i>	8	3.5

TABLE (3): Prevalence of other risk factor in asthmatics

Risk Factors	Patients	
	No	%
Direct House dust mite exposure	110	48.8
Passive smoking	49	21.7
Acidity and burn	31	13.7
Regurgitation	26	11.5
Direct bird contact	20	8.8
Contact with other animals	15	6.6
Chemical pollutant	8	3.5
Direct cat allergens exposure	2	0.8

TABLE (4): Allergic Co-Illnesses in asthmatic patients

Allergic Diseases	Patients	
	No.	%
Allergic Rhinitis	41	18.2
Allergic Sinusitis	22	9.7
Allergic Laryngitis	17	7.5
Skin Allergy	10	4.4
Combination	43	19.1

TABLE (5): Some diagnostic and management facts

Type of Parameter		No	%
Way of therapy	On need bases	137	60.9
	Regular	88	39.1
Types of Inhaler	Steroid	31	13.7
	Bronchodilators	147	65.3
Using spirometry and PFT in diagnosis, & followup	Yes	11	4.9
	No	214	95.1
Inhalers used by patients	Proper	39	26.5
	improper	108	73.5

Discussion

In our study the peak prevalence of asthma is in those aged 20-40 years (25.8%), which is later than that in the united state report, 5-15 years (20.4 %) ⁽¹¹⁾, exclusion of those younger than 13 years in our study may explain this difference. This is the same when we compare the mean of age in our survey (38 years), which is bit later than USA's (30 years), while 10 % of our asthmatics are more than 65 years, comparable to those in USA report. In our study women with asthma significantly outnumber men (77.8 Vs 22.2 %), and this is consistent with, although to high degree, the national Center for Health Statistic report which stated 55% for women and 45 % for man. The predominant prevalence in women is universal in all age group, unlike to what is reported in other study when boys involved commonly than girls below 20, and equal till 40 years and, women predominant thereafter ⁽¹²⁾. This difference can be attributed to sample bias or more exposure and medical seeking behavior in women ⁽¹¹⁾. Exclusion of

smokers and children could also explain this big difference. About 60 % of our patients are overweight, obese or morbid obese. Causal relationship with asthma is linked by many studies ⁽¹³⁾, but this correlation might also, at least partly, be the effect of oral corticosteroids, or reluctance to do more exercise due to physical limitation by the disease. Many studies stress on the importance of family history of atopy as measured by IgE level, skin reactivity, and history of allergic diseases ⁽¹⁴⁾. In our study one third of the patient has family history of allergic diseases. Difficulties in doing IgE level and skin reactivity in families of our asthmatic patients underestimate the prevalence of allergic diseases in the families of asthmatics. Allergic rhinitis predominantly or in combination with other allergic diseases detected in about 20 % of our asthmatic patients, this association was seen in others ⁽¹⁵⁾. In studies, prevalence of GERD in asthmatic vary greatly, using 24-h esophageal pH monitoring report it was ranging from 32 to 82 % ⁽¹⁶⁾. In our study the presence of GIT symptoms suggestive of GERD are reported in about 25 % of the patients.

The low prevalence of GERD in our asthmatic patients can be due to our dependence on clinical ground in the diagnosis, as 24-h esophageal pH monitoring is not readily available in Iraq, and this is insensitive to detect all GERD cases⁽¹⁷⁾, besides being a trigger for asthma, GERD can be the results of asthma medication as well, and its proper management can decrease the risk and severity of asthma exacerbations⁽¹⁸⁾. Although 70 % of our patients have persistent symptoms, only 40 % using their anti-asthmatic drugs regularly, and notably 13.7 % (table 5) of our asthmatics using inhaled corticosteroid however only 26.5 % use it properly and this is inconsistent with the report of National Asthma Education Prevention Program (NAEPP)⁽¹⁹⁾, that stresses on using inhaled corticosteroid in any asthmatics with persistent symptoms, our patients reluctance to use inhalers may be related to both medical and social problems and efforts needed on both sides, patients and their treating doctors to remove some odd and wrong believes about inhalers, help of mass media is mandatory in this aspect. Same results are also seen in Middle East area⁽²⁰⁾. Pulmonary function tests specially spirometry are critical tools in the diagnosis and management of asthma⁽¹⁹⁾, this is very exceptional in our study, reported only in 11 patients (4.9 %), this is clearly demonstrate that our physicians depend on clinical examination in the diagnosis of asthma, absence of advanced respiratory laboratory, might explain the lack of dependence on spirometry and PFT in the diagnosis and management of asthma.

Conclusions

High body mass index, exposure to an environment in favored for house mite inhabitation, family history of atopy, and history of allergic diseases are the commonest risk factors reported by asthmatics. Proper and regular use of

inhalers especially corticosteroid, are still a problem in asthma management among our patients. Spirometry and other pulmonary function tests are rarely used in the diagnosis, and management of asthmatic patients.

Recommendations

1. Nationwide study on asthma prevalence is still needed in Iraq.

2. Establishment of asthma group in any medical word is needed to educate the patient about asthma facts and proper way of providing secured therapy, and to purified patients mind's old and wrong believes.

3. Medical records is very important, especially in chronic diseases such as asthma to directorate the proper steps in the management, so medical records should be filled properly.

4. Pulmonary function tests are underused by Iraqi physicians taking care of asthmatics, a campaign to shedding light on this aspect among physicians is needed.

5. Active cooperation with the media to correct some faulty believes about asthma management in the community is one of the corner stone in the management of asthma

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