

DEMOGRAPHIC STUDY OF ASTHMATIC PATIENTS IN SOUTHERN REGION OF IRAQ

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Abstract

In recent years, asthmatic patients recorded a high prevalence worldwide. The aim of the study was to address knowledge gaps in asthmatic cases with combination of factors affecting the epidemiology of the disease in Southern region of Iraq. A cross-sectional study had been done from October 2024 until April 2024. A total of 250 asthmatic patients from Southern regions in Iraq aged from 7 years to 80 years, with and without recurrent respiratory infections. In addition to patients who have been diagnosed by specialized clinicians and registered at Thi Qar Center for Respiratory diseases (TQLD) and evaluated through follow up visits. Results recorded a non-significant difference between patients according to sex and age group. High significant difference with P-value <0.001 have been scored in non-smoker patients, patients with three respiratory tract infections (RTI), disease severity, duration of disease of (< 1 year), patient who had no family history of asthma, patient who have four sibs and who were the third order between their sibs. **Conclusion:** knowledge gaps have been well addressed in studied asthmatic cases.

Keywords: Asthma, Prevalence, Severity

Introduction

Asthma represented as chronic inflammation of airways which leads to bronchial hyper-responsiveness and mucus hypersecretion, a divers stimuli cause recurrent and reversible episodes of wheezing, shortness of breath, chest tightness and coughing [1]. It is a non-communicable disease that causes disability and healthcare burden worldwide. A large number of people suffer from asthma, significantly children and having impacts their lives. It leads to recurrent symptoms, effects on their activities in addition to the effects on their learning process [2]. Asthma prevalence in most parts worldwide is increasing [3,4,5]. In recent years, urbanization and industrialization in Eastern and Southern countries resulted in significant modifications in environment and lifestyle that have been linked to asthma [6] Although asthma had been considered more common, recent studies estimated that maybe more people with asthma by 2025 [7]. Factors that cause asthma are not completely represented. Genetic predisposition in addition to environmental exposure to dust, passive smoking, and air pollution might be the main key role in asthma [8,9]. Regarding to Iraq, asthma had been increased during the last years resulted from air pollutions from oil industry, electrical generators, and vehicle [10]. The current study **aimed** to address knowledge gaps in asthmatic cases with combination of factors affecting the epidemiology of the disease in Southern region of Iraq.

Materials and Methods

A cross-sectional study had been done from October 2024 until the end of April

2024. A total of 250 asthmatic patients from Southern regions of Iraq aged from 7 years to 80 years, 126 with recurrent respiratory infections and 124 without recurrent respiratory infections were recruited in the study. In addition, patients who have been diagnosed by specialized clinicians and registered at Thi Qar Center for Respiratory diseases (TQLD) and evaluated through follow up visits were included in the study. Patients under treatment with immunosuppressive drugs, patients who have immunodeficiency as a result to nephrotic syndrome, or severe malnutrition have been excluded. Patient's data have been collected using a specially designed questionnaire that included, age, sex, detailed clinical data in addition to the patient's records. The data of this study was statistically analysis by using SPSS version 26, based in using Chi-square and descriptive statistic for mean and range at P-value <0.05.

Results

Demographic Characteristics

The study recorded no significant difference regarding to sex., with regard to age groups, the highest frequency of patients was within the age group <20 years but with no significant difference. Regarding to smoking, non-smoker patients frequency was 92.8% with a high significant difference with P-value <0.001. About the number of respiratory tract infections (RTI), 34.8% of patients with three respiratory tract infections (RTI) scored high significant difference with P-value (<0.001), 90.0% of patients with severe disease showed a significant difference with P-value (<0.001).

Furthermore, duration of disease also, scored significant difference with P-value (<0.001) as 86.8% of patients had disease duration less than one year. Regarding to family history, the study recorded a significant difference with P-value (<0.001) in patient who had no family history of asthma. Results recorded a

significant difference with P-value (< 0.001) in patient who had four sibs 21.6%. Finally, regarding to order between sibs, results noted a significant difference with P- value <0.001 , as 33.6% of patients were the third order between their sibs as in (Table 1).

Table 1: Demographic statistics of patient with asthma

Variable	Categories	No.	%	p. value
Sex	Male	122	48.8	0.704
	Female	128	51.2	
Age groups in years	<20 years	63	25.2	0.304
	21-35	49	19.6	
	36-50	48	19.2	
	51-65	48	19.2	
	66-80	42	16.8	
Smoking status	Smoker	9	3.6	<0.001
	Previous smoker	9	3.6	
	Non	232	92.8	
Recurrent RTI	Yes	126	50.4	0.899
	No	124	49.6	
No. of RSTI	One	52	20.8	<0.001
	Two	68	27.2	
	Three	87	34.8	
	Four	36	14.4	
	Five	7	2.8	
Severity	Mild	3	1.2	<0.001
	Moderate	22	8.8	
	Severe	225	90.0	
Duration of Disease	< 1 year	217	86.8	<0.001
	≥ 1 years	33	13.2	
Family history of asthma	Asthma	68	27.2	<0.001
	Atopy	53	21.2	
	Non	129	51.6	
No. of SIBS	One	6	2.4	<0.001
	Two	26	10.4	
	Three	49	19.6	
	Four	54	21.6	
	Five	52	20.8	
	Six	36	14.4	
	Seven	23	9.2	
	Eight	3	1.2	
	Nine	1	0.4	
Order BE SIBS	One	44	17.6	<0.001
	Two	72	28.8	

	Three	84	33.6	
	Four	36	14.4	
	Five	13	5.2	
	Six	1	0.4	

Hematological and Immunological Parameters Compared with Normal Value

The present study showed that the average of WBC, neutrophil, eosinophil, and IgE was within normal value, but near than high limit

value, lymphocyte and platelets was within normal value. Hb and HCT were within normal value but near than lower limit of normal value, with increased level of CRP, (Table 2).

Table 2: Evaluation of hematological and immunological parameters in asthmatic patients compared with normal value

Parameters	Patients Mean	Patients Range	Normal Value
WBC *10 ³	9.66	(3.4 – 22.1)	4.0 – 11
Neutrophil	6.14	(1.34 – 17.3)	2.0 – 7.5
Lymphocyte	2.57	(0.34 – 4.57)	1.0 – 4.5
Eosinophil	0.30	(0 – 2.48)	0.04 – 0.4
RBC *10 ⁶	4.71	(3.18 – 6.29)	3.8 – 5.5
Hb g/dl	12.7	(6.9 – 17.4)	11 - 16
HCT%	38.2	(24.6 – 51.3)	37 - 47
PLT *10 ³	266.6	(110 - 568)	150 - 400
CRP mg/dl	20.4	(3 - 258)	0 - 5
IgE	496.4	(3 - 2500)	0 - 696

Statistical Analysis

The data of this study was statistically analysis by using SPSS version 26, based in using chi-square and descriptive statistic for mean and range at P-value <0.05.

Discussion

Asthma has several etiologies, for this reason it considered as heterogeneous disease and usually marked with chronic inflammation in respiratory system airways. Several systems can be seen in asthmatic patients such as tightness of the chest, variable cough intensity in addition to breath shortness [11]. Even though there is increased cases of asthma during past twenty five years, overall disease burden and deaths persistently declined [12]. Many researches have been done to know the incidence of asthma in Middle and Northern regions of Iraq [13]. Data indicated a similar finding with the current study. There is an increased prevalence at many provinces with frequency of females slightly more than males but without significant difference. A study on asthmatic patients in Diyala governorate in Iraq indicated a significant increased frequency of females in comparison to males

[14]. Another study on asthmatic Iraqi patients indicated no significant differences between males and females [10]. Regarding to age group, adult asthmatic patients in Middle and Northern region showed a significant higher frequencies than children while in the current study, the highest frequency of patients was within the age group <20 years but with no significant difference. Global burden in young adult asthmatic patients between 1990 and 2019 indicated decreased frequencies [15]. Regarding to smoking, non-smoker patients frequency was 92.8% with a high significant. A study on asthmatic patients in Baghdad during the period between 2007 and 2008 indicated scored that 21% were passive smoker [16]. According to number of respiratory tract infections (RTI), 34.8% of patients with three RTI exhibit a significant. Severe asthma is infrequent but in patients whose disease is unmanageable, severe asthma might been developed [17,18]. The current study scored that 90.0% of patients with severe asthma were highly significant. Furthermore, time span of disease also,

scored significant as 86.8% of patients had disease duration less than one year. Regarding to family history, the study recorded high significant in patient who had no family history of asthma, a similar findings indicated in two studies [16,10]. Results recorded high significant in patient who had four sibs 21.6%. Regarding to order between sibs, results noted high significant, as 33.6% of patients were the third order between their sibs. The present study showed that the average of WBC, neutrophil, eosinophil, and IgE was within normal value, but near than high limit value, lymphocyte and platelets was within normal value. Hb and HCT were within normal value but near than lower limit of normal value, whereas the level of CRP was increased compared with normal value.

Conclusion: In this cross-sectional study, knowledge gaps have been well addressed in asthmatic cases as many studied factors affecting the epidemiology of the disease in Southern region of Iraq scored high significant differences.

Research Highlights:

- Knowledge gaps in asthma cases have been determined in the current study
- Increased frequency of asthmatic females in comparison to males needs further studies to explain sex factor
- Patients within younger age groups indicated most cases
- Most cases have severe asthmatic episodes and with many recurrent respiratory tract infections

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دراسة ديموغرافية لمرضى الربو في المنطقة الجنوبية من العراق

الخلاصة

في السنوات الاخيرة، سجل الربو انتشارا مرتفعا في جميع انحاء العالم. الهدف من الدراسة هو معالجة فجوات المعرفة في حالات الربو مع مجموعة من العوامل المؤثرة على وبائيات المرض في المنطقة الجنوبية في العراق. اجريت دراسة مقطعية من اكتوبر 2024 حتى ابريل 2024 على 250 مريض بالربو تتراوح اعمارهم بين 7 سنوات و 80 سنة، مع او بدون التهابات الجهاز التنفسي المتكررة. بالاضافة الى المرضى الذين تم تشخيصهم من قبل اطباء متخصصين و مسجلين في مركز ذي قار لامراض الجهاز التنفسي (TQLD). سجلت الدراسة فرقا غير معنوي بين المرضى وفقا للجنس و الفئة العمرية. تم تسجيل فروقا ذات دلالة احصائية $P\text{-value} < 0.001$ في المرضى غير المدخنين، المرضى الذين يعانون من ثلاث اصابات متكررة في الجهاز التنفسي، شدة الاصابة، مدة المرض (اقل من سنة)، المرضى الذين لديهم اربعة اشقاء المرضى الذين ترتيبهم الثالث بين اشقائهم و المرضى الذين ليس لديهم تاريخ عائلي للربو. الاستنتاج: في هذه الدراسة المقطعية، تمت معالجة فجوات المعرفة بشكل جيد في حالات الربو.

الكلمات المفتاحية: الربو، الانتشار، الشدة