

Population Prevalence of Asthma in Aljiza District

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Abstract

Background: Asthma is a condition in which your airways narrow and swell and produce extra mucus. **Objective:** In this study we determine the prevalence of asthma among the population of Aljiza District, Jordan. In order to determine the prevalence of asthma in Aljiza District (Amman, Jordan), **Method:** a questionnaire was distributed to 4200 respondents of different age and gender. **Results and Conclusions:** The responses were reviewed and the incidences were determined. From the 4200 questionnaires by respondents 131 person (3.1%) suffered from physician-diagnosed asthma. No attempt was made to confirm the diagnosis and the results relied upon responses to questionnaire. The prevalence of asthma in adult females was higher than that of males in all groups. Adult females and males showed a significant priority on other age groups, and children, 5-10 years group have higher prevalence than children, 10-15 years group, in both males and females. In order of frequency, the triggering factors were common cold, dust, allergens, smoke, exercise, and chest infection. A relationship between asthma and paternal smoking, family history and to a lesser extent recurrent chest infections was suggested. The prevalence of asthma in Aljiza District is less than that reported in the southern and northern parts of Jordan and some Middle East countries. Although our results show a low prevalence of asthma, it still is a health problem among children and the adults in Aljiza District.

Keywords: Asthma, population prevalence, Aljiza District, Jordan

Introduction

Asthma is one of the most common chronic respiratory diseases and is a major health problem worldwide, affecting people of all ages, genders and religions ⁽¹⁾. The prevalence of asthma may be as high as 334 million according to a report from the Global Asthma Network published in 2014 ⁽²⁾.

The disease represents a significant burden at life not only in term of morbidity and quality of life, but also in terms of health cost, especially in developing countries ^(3, 4).

Though most of the available information regarding the prevalence of asthma indicates that West European countries have some of the highest prevalence rates of

asthma in the world, nevertheless Latin American, Asian, Middle Eastern and some Arab countries also showed a relatively high prevalence of this disease ^(4, 5). Moreover, results on the prevalence of asthma in Arab countries suggest that the highest rate was reported among people who lived in desert ⁽⁶⁾ and lowest is among people living in urban areas ⁽⁷⁾.

In Jordan and though the disease is increasing recently there is a limited information on the prevalence of asthma in many parts of the country ⁽⁸⁾. The aim of the present study is to investigate the prevalence and severity of asthma and asthma related symptoms in Aljiza District.

Material and Method

Aljiza District is located about 50 km. south of Amman with a population of about 60000 inhabitants and also the study protocol conformed to the ethical guidelines of the 1975 Helsinki Declaration and the approval was obtained from ethical committee of Middle East University-Amman-Jordan.

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The design of this study was cross-sectional. It was carried out among people living in this area to include a random sample of school children, university students and families. For the school children a self-administered questionnaire was distributed to parents via their children, who returned the questionnaire after it had been completed by one of their parents. The questionnaires asked for the following details: age and sex, chest diseases, allergic rhinitis, family history of asthma, parental smoking.

The data were analyzed using statistical package for social science (SPSS) version 23. descriptive statistics. Chi – square test (X²) was used in this study on a level of significance less than (P <0.05).

Results

A survey was conducted on a sample of 4200 individuals. For this purpose a questionnaire was prepared and distributed. The completed questionnaires include 2500 males and 1700 females. The questionnaires revealed that 131 subjects (3.1%) have physician

diagnosed asthma including 71 males (2.8 %) and 60 females (3.5%). The results are presented in Table 1.

Table II shows that in all age groups the prevalence in females is higher than that in males, and that it is significantly higher in adult female than in the other two female age groups (5-10 yrs.) and (10-15 yrs.). The same trend is observed within male prevalence asthmatic groups where prevalence is significantly higher in the adult group than in the 5-10 yrs. and 10-15 yrs. groups. The results also show that children (5-10 yrs.) have higher prevalence than that of (10-15 yrs.) and this trend is consistent in both female and male groups.

Most of asthma episodes appeared to be triggered by common cold (64.1%), dust (31.3%) and allergens (30.5%) and to less extent smoke (14.5%), exercise (12.2%) and chest infections (3.8%) (Table III).

Table IV shows the relationship between asthma and the risk factors studied. The results revealed that paternal smoking (42.7%), family history (24.4%) and recurrent chest infections (19%) are the most significant factors associated with this disease. (Table IV).

Table 1: prevalence of asthma in Aljiza District, Jordan

	Female No. (%)	Male No. (%)	Total No. (%)
	1700	2500	4200
Physician diagnosed	60 (3.5)	71 (2.8)	131 (3.1)

Table II: distribution of asthma patients among age groups

	Age groups		
	5-10 yrs.	10-15 yrs.	>15 yrs.
	No. (%)	No. (%)	No. (%)
Female	9 (15)	5 (8.3)	46 (76.7)
Male	7 (9.9)	3 (4.2)	61 (85.9)

Table III: Triggering factors of asthma among 131 individuals

	Female No. (%)	Male No. (%)	Total No. (%)
Common cold	41 (68.3)	43 (60.6)	84 (64.1)
Smoking	7 (11.7)	12 (16.9)	19 (14.5)
Allergens	22 (36.7)	18 (25.4)	40 (30.5)
Exercise	8 (13.3)	8 (11.3)	16 (12.2)
Chest infection	2 (3.3)	3 (4.2)	5 (3.8)
Dust	19 (31.7)	22 (31)	41 (31.1)

Table IV: The risk factor for physician diagnosed asthma

Personal history	No. (%)
Recurrent chest infection	
Present	25 (19)
Absent	106 (81)
Allergic rhinitis	
Present	5 (3.8)
Absent	126 (96.2)
Family history	
Present	32 (24.4)
Absent	99 (75.6)
Maternal smoking	
Present	10 (8.3)
Absent	121 (91.7)
Paternal smoking	
Present	56 (42.7)
Absent	75 (57.3)

Discussion

The primary objective of this study was to estimate the prevalence of asthma in a semi-desert area (Aljiza). The result of this study revealed an overall prevalence of asthma of 3.1% which is lower than that reported from Jordan and many other Middle East countries^(1, 9-13). However, a study carried out in Anatolia, Turkey showed that a prevalence of asthma as low as 1% in age group of (15-29 yrs.) and 2.6% in the (13-49) age groups. This is a low a low prevalence and is aligned with our findings⁽¹⁴⁾.

Result on asthma from different countries and localities have consistently shown a high prevalence of this disease in women during adult hood^(1, 10, 15, 16). Consistent with this, our result revealed a similar finding in that a significant higher prevalence in women compared to men ($p > 0.05$). Though there are many explanations for this phenomenon no single explanation can fully explain the gender difference. Among these hypotheses female hormones might play a role in inducing this higher prevalence⁽¹⁾.

Concerning age groups, the present study showed that children of age group 5-10 yrs. Was slightly higher than age group of 10 to 15 yrs. group. This is in agreement with results reported by other authors^(9,17). Furthermore, our findings concerning gender difference showed that the rate of physician diagnosed asthma was higher in female age group 5-10 yrs. and 10-15 yrs. respectively. This is not in agreement with previous studies in Jordan and elsewhere^(9,12,18).

Several triggering factors were examined in this study. Two among them, namely common cold and allergens show highly significant association with the disease; others like smoking and dust also have a role in triggering asthmatic attack. This confirmed earlier findings from different localities in Jordan and elsewhere^(9,14).

Finally, with regard to risk factors paternal smoking and family history appears to be the most important risk factors in this survey, (42.7 %) and (24%) respectively. This is an agreement with Weitzman et al. (1990) findings⁽¹⁸⁾.

Though the present results indicated a low prevalence of asthma to confirm these results a further study is needed in the area.

Conclusion

The observed prevalence of asthma in Aljiza is 3.1 % which is comparatively lower than the reported prevalence in many parts of Jordan and Middle East countries. Though the present results indicated a low prevalence of the disease still there is a belief that asthma and wheezing have a negative impact on health and the quality of life and therefore further studies are needed to obtain a reliable data in the prevalence of asthma in both children and adults by using a Standard European community Respiratory Health Survey (ECRHS) questionnaire and tools.

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Conflict of Interest: None

Ethical Clearance: The study protocol conformed to the ethical guidelines of the 1975 Helsinki Declaration and the approval was obtained from ethical committee of Middle East University-Amman-Jordan.

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