Assessment Risk Factors for Asthma among Children Attending Azadi Teaching Hospital and Pediatric Hospital in Kirkuk City

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Abstract

A descriptive study was conducted from September 2017 to the January 2018. This study was conducted on children with "asthma" and aimed at assessing risk factors for asthma among children attending to Azadi Teaching hospital and pediatric hospital in Kirkuk city. Data were analyzed by applying descriptive statistics (frequencies, percentage). The result of the study showed that the majority of the sample 60 (75%) was attended to pediatric hospital . while 20 (25%) of the sample attended to Azadi Teaching hospital. Also the majority of the sample aged between (1-7) years, approximately 61.4%, most of the participants were male and constituted 63.6%. With regard to the method of feeding, most of the samples were using artificial feeding 52.3%. As for the gestational age, 72.7% were of full duration (9 months). The study explored that the main factor affecting asthma disease was the parents (71.4%) smoke inside the home. The family history 50% was the second state of caution (a genetic predisposition to develop rhinitis and asthma), and as for the recommendation, families should make sure from the child's hereditary tendencies, and after confirming that the child has asthma, parents should not smoke inside the home and during pregnancy, and care must be taken to ensure that the child has sufficient sunlight inside the house

Keywords: *Risk Factors, Asthma, Children, Azadi Teaching Hospital, Kirkuk City*

Introduction

Asthma is one of the most common major non-communicable diseases and for many, has a substantial impact on quality of life. Globally, asthma is ranked 16th among the leading causes of years lived with disability and 28th among the leading causes of burden of disease, as measured by disability-adjusted life years. Around 300 million people have asthma worldwide, and it is likely that by 2025 a further 100 million may be affected There is a large geographical variation in asthma prevalence, severity, and mortality. While asthma prevalence is higher in high income countries, most asthma-related mortality occurs in low-middle income countries. Despite the advances in asthma treatment in recent decades, there are still gains to be made in terms of improving patient education, employing new diagnostic approaches, and implementing personalized case management. A Project submitted A Project submitted healthcare use, and mortality are higher in adults. Interestingly, incidence and prevalence of asthma differs by sex across the lifespan. Pre-pubertal boys have a higher asthma incidence, prevalence, and hospitalization rate than girls of the same age, but this trend reverses during adolescence [(13)].

Females continue to have a higher burden of asthma than males well into the 5th decade of life. However, the female-male gap in asthma burden narrows around the 5th decade. Some even suggest that the sex differential in asthma incidence may reverse again, following a sharp increase in asthma incidence in males around the 4th decade of life [(13)].

The sex reversal in asthma burden around major reproductive events suggests that sex hormones may play a role in the etiology of asthma. The current evidence suggests that asthma is a complex multifactorial

disorder and its etiology is increasingly attributed to interactions between genetic susceptibility, host factors, and environmental exposures. These include environmental factors (air pollution, pollens, mold and other aeroallergens, and weather), host factors (obesity, nutritional factors, infections, allergic sensitization), and genetic factors (asthma susceptibility on genes). Although underlying mechanisms of asthma are not yet fully understood, they may include airway inflammation, control of airway tone and reactivity [10,11].

It is also now recognized that asthma may not be a single disease but a group of heterogeneous phenotypes with different etiologies and prognoses [24].

While phenotyping individuals with asthma has been used to help guide clinical management, defining the entity of "asthma" has been a major challenge encountered in research, especially in epidemiological research, where in-depth data collection needs to be balanced with the large number of study participants necessary for adequate power.

Review of Literature

The International Consensus Report on the Diagnosis and Treatment of Asthma defines asthma as „a chronic inflammatory disorder of the airways in which many cells play a role, including mast cells and eosinophil [6,7].

In susceptible individuals, this inflammation causes symptoms that are usually associated with widespread but variable airflow obstruction that is often reversible, either spontaneously or with treatment, and causes an associated increase in airway responsiveness to a variety of stimuli". Asthma typically presents with „wheezing", a high pitched whistling sound heard on expiration, and also on inspiration is the asthma is sever. Asthma also causes shortness of breath and chest tightness, and can cause cough, particularly in children.

About 25 million people in the U.S. have asthma; about 6 million of these are children. The condition affects men and women equally. Asthma causes over 14 million visits to doctors each year and nearly 2 million emergency room visits. Tragically, asthma can kill. Most people who die from asthma are over age 50, but children sometimes die of the condition

Diagnosing asthma clinically may present challenges, as there may be an overlap of symptoms with other chronic diseases. For example, pneumonia causes shortness of breath and sometimes cough; similarly, heart failure (more common in adults) causes shortness of breath and sometimes wheezing (hence the term „cardiac asthma") also, chronic obstructive pulmonary disease (COPD) in adults has symptoms similar to those of asthma. In populations where asthma prevalence is increasing, there may be a lag in its recognition, as occurred in the United Kingdom in the 1970s, when there was increasing concern about under diagnosis of asthma among older children. It is possible that the same phenomenon is occurring in other parts of the world where prevalence has been low and is now increasing. These factors suggest that the current global estimates of asthma may be underestimates.

Asthma is among the top 20 chronic conditions for global ranking of disability-adjusted life years in children; in the midchildhood ages 5–14 years it is among the top 10 causes. Death rates from asthma in children globally range from 0.0 to 0.7 per 100 000. There are striking global variations in the prevalence of asthma symptoms (wheeze in the past 12 months) in children, with up to 13-fold differences between countries. Although asthma symptoms are more common in many high-income countries (HICs), some low- and middle-income countries

(LMICs) also have high levels of asthma symptom prevalence.

Methods

3.1. Design of the Study

A descriptive study was conducted on children attending Pediatric hospital and Azadi Teaching hospital from September / 2017 to the January /2018 in Kirkuk city to assess risk factors for asthma among children aged from (<1–10 years).

3.2. Administrative Arrangement

The administrative permission was obtained from the Ministry of Health / Planning and Development of Resources Office, Kirkuk"s Health Directorate.

3.3. Setting of the Study:-

The study was conducted at Pediatric Hospital and Azadi Teaching hospital in Kirkuk.

3.4. The sample of the study:-

A non-probability (purposive) sample of (80) children attending pediatric hospital and Azadi Teaching hospital in Kirkuk City. These children were assigned for the study according to the following criteria:-

1- Children aged less than 10 years

2- Both sexes

3.5. Method of data collection

Data was obtained by the investigators who interviewed the children‟s families, filling out the structural questionnaire for demographic and cognitive elements. Each interview session

took about (10-20) minutes.

3.6. The Instrument of the study:-

The study instrument was designed and constructed by the investigators to measure the variable underlying the present study by:-

***1- Primary assessment*:**

An open format was administered to (20) children who were suffering from asthma at pediatric hospital and Azadi Teaching hospital in the city of Kirkuk in order to obtain approximate information about the knowledge of asthma in children.

2- The study questionnaire:

An assessment questionnaire was constructed and designed depending on open format information which consisted of two parts after reviewing the related literature and studies.

Part I

This part of the questionnaire included demographic data related to the respondent's characteristics such as :- age, gender, level of education, type of feeding , place of attending ,gestational age .

Part II

This part of the questionnaire consists of (7) structural elements related to the atmosphere in which children live. Items were classified according to three points - like (yes, no ,

uncertain), scale levels are recorded as (2) for the correct answer, (1) for the uncertain answer and (0) for the incorrect answer.

3. Statistical Analysis:

The present study was analyzed by SPSS program v.22.

3.7.Descriptive statistical data analysis:

This approach was applied through the measurement of the

following:-

1. Frequencies (*f*)

2. Percentage (%)

$$\% = \frac{f}{n} \times 100$$

3.8. Limitation of the study:

1- The sample size is not large enough due limit time of the

study.

2- Inadequate literature and no relevant research studies.

Result

Table (1) Demographic characteristics of the study samples (No. =80)

No.	Variables	Frequency	Percentage
Age			
1	less than 1 years	28	35 %
2	1-3 years	30	375 %
3	more than 3 years	22	27.5 %
4	Total	80	100.0%
Sex			
1	Male	22	27.5 %
2	Female	58	72.5 %
Total		80	100.0%
Mother level of education			
1	House Wife	62	77.5 %
2	Teacher	8	10.1 %
3	Officer	2	2.5 %
4	Clerk	3	3.7 %
5	High School Graduate	5	6.2 %
Total		**80**	**100.0%**

This table shows that most of the study sample were aged (1- 3 years) which constitute (37.5 %), while the lower frequency of the samples were (more than 3 years) which constitute (27.5 %).

Regarding the sex, most participants where Female which constitute (72.5%). Most children"s mothers were house wife which constituted (77.5%). Regarding type of feeding, most of the samples were bottle feeding which constitute (52.5%).

Regarding the gestational age most of samples were full terms which constitute (82.5%). Also, most of samples were from urban which constitute (85 %). The most of the participants were attending to Pediatric Hospital (75%) while (25%) of the sample attending from Azadi teaching hospital.

Table 2. the Risk Factors for Asthma

No.	Items	Yes		NO		Uncertain	
		Frq.	%	Frq.	%	Frq.	%
1.	Parent smoking inside the house	52	65 %	25	31.2 %	3	3.7 %
2.	Family history of atopy (genetic tendency to develop allergic rhinitis and asthma)	38	47.5 %	35	43.7 %	7	8.7 %
3.	Presence of pets in the house	30	37.5 %	50	62.5 %	0	0
4.	Heating and cooling system of the Residence	70	87.5 %	8	10 %	2	2.5%
5.	insufficiency sunlight in the house	42	52.5 %	35	43.7 %	3	3.7%
6.	lower respiratory infection during age of than 1-3 years	30	37.5 %	45	56.2%	5	6.2 %
7.	smoking during pregnancy	4	5 %	76	95 %	0	0%

This table demonstrates that 52 of parent (65 %) were smoking inside the house. 47.5 % of cases were from families with history of asthma (genetic tendency to develop allergic rhinitis and asthma). 50 of samples (62.5 %) no presence of pets in the

house. 70 of samples (87.5 %) have heating and cooling system of the residence. 42 of samples (52.5 %) have insufficiency sunlight in the house. 45 of samples (56.2 %) have no lower respiratory infection during age of 1-3 years. 76 of the mothers (95 %) were not smoking during pregnancy.

Discussion

This study aimed to assess the prevalence of asthma risk factors among children (<1–10 years) attending pediatric hospital and Azadi Teaching hospital inKirkuk city. Our study explored that most participants were female which constitute (72.5 %). While male constitute (27.5 %). This is disagree with Abdul Mohsen (2007) who mentioned in his study, more than half of the infected children (56.7%) were males, and that all children living in an urban setting are at increased risk for asthma. Further, most of the children"s mothers were house wife which constituted (77.5 %). In fact, most of the children who admitted to pediatric hospital because of difficulty in breathing then diagnosed as asthmatic patient were bottle feeding (52.5%).

Besides most of samples were from urban which constitute (85%). Also 42 of the sample (52.5%) due to insufficient sunlight This finding is supported by a study from USA which stated that sufficient exposure to sunlight besides street trees were associated with a lower prevalence of early childhood asthma. Asthma has increased during the last decades but seems to have reached a plateau. The burden of asthma is considerable. It influences quality of life; prevention of children from Asthma is one of the most chronic disorders in children.

The study showed that about (65 %) of parents was smoking inside the house. Further, (47.5 %) were having family history (genetic tendency to develop allergic

rhinitis and asthma). 50 of samples (62.5%) declared no presence of pets in the house. 42 of samples (52.5 %) have insufficiency sunlight in the house. 45 of samples (56.2%) no have lower respiratory infection during age of than 1-3 years. 76 of the mothers (95%) no smoking during pregnancy.

Previous studies reported that diagnosis, asthma-like symptoms, and environmental/occupational risk factors among children. Wheeze and asthma were indicated in 9.7% and 8.9% of medical records, respectively. Parents reported that children play in farming fields (21.8%) and feed livestock/animals (10.9%). Additionally, 13.2% and 9.4% of children have a household member who works around livestock or around grain, feed, or dust, respectively more than half of the sample (55.5%) were from infected women. Also, our study showed that most of the children (56.2%) had no lower respiratory infection during age of 1-3 years. 76 of the mothers (95%) were not smoking during pregnancy.

General epidemiologic characteristics including prevalence and severity of asthma and environmental and occupational risk factors have not been extensively evaluated within the pediatric hospital in Kirkuk city. Administering questionnaires allows for the collection of more directed responses concerning asthma-like symptoms as well as detailed exposure information as compared to information generally recorded in medical records. From the results of this hypothesis-generating pilot project, we were able to demonstrate the elevated occurrence of asthma-like symptoms as well as multiple occupational and environmental risk factors in this unique population, which is critical for developing future hypothesis testing research .

Conclusion

Majority of the sample are female, most of them there age ranged between (1-3)years old .More than half of the sample attending to the pediatric hospital .Factors related to environmental influences on a farm such as increased exposure to bacterial compounds in stables where livestock is kept prevent the development of allergic disorders in children. The prevalence of asthma participating may cause school.

Recommendation

1- Teaching about methods of improving housing conditions should be part of the management of asthma. Our results suggest that housing conditions play an important role in asthma among lower income populations.

2- Future studies aiming at providing baseline data to guide policies and planning on healthcare delivery system to children with Asthma in Kirkuk should focus on these issues.

3- Every year flu vaccine is recommended for children. Especially those with asthma. If child with asthma get the flu, they're at risk for flare-ups and developing a more serious illness.

4- A commitment to plant one million trees inside city Given the evidence from previous studies that street trees were associated with a lower prevalence of early childhood asthma. It is clearly important to consider this recommendation by the health policy makers.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of nursing and all experiments were carried out in accordance with approved guidelines.

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