*Al-Kitab Journal for Pure Science, 2019, 3(2): 120-130*
**ISSN: 2617-1260 (Print), 2617-8141(Online)**
**www.kjps.isnra.org**

# Prevalence of Bronchial Asthma among Patients attending Tertiary Allergy center /Kirkuk / Iraq

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## ABSTRACT

Background: The prevalence of asthma worldwide increased last three decades, according to the world health organization estimate in 2005, around 300 million people affected with asthma, little data for its prevalence at Middle East. Objective: To evaluate the prevalence of asthma among patients attending tertiary allergy center in Kirkuk. Patients and Methods: The study included 1840 patients of different age groups from 1-4 years to age group 65 and above and deferent gender male and female, attending to allergy center from first of January to 30th of December 2017. They are diagnosed by clinical examination, spirometer, complete blood picture including eosinophil count and for certain patient's chest x rays and sputum culture for suspect fungal infections like aspergilloses. Results: The study shows an increase prevalence of asthma at Kirkuk tertiary allergy center the prevalence was 6.94% and it is prevalence significant higher in adults than children, study shows at age group 20-44 year was 37.5% and age group45-65 years total number was 528 percentage 28.7%. Seasonal changes was clear there is an increase asthma cases at spring months from April to May the prevalence was 29.83% and an increase in autumn months from September to November the prevalence was 30.05%. According to gender the study shows the females little higher than males in the females was 5053%,in males49.47% .Conclusion: The prevalence of asthma is high in these locality and need more longitudinal data studies at the level of government to discover seasonal environmental factors play role in provoking asthmatic attack and need to be observed and studied which is important in prevention of asthma in our locality.

**Keywords:** Nuclear structure; collective excitations; Random Phase Approximation????.

DOI:http://dx.doi.org/10.32441/kjps.03.02.p10

Al-Kitab Journal for Pure Science, 2019, 3(2): 120-130
ISSN: 2617-1260 (Print), 2617-8141(Online)
www.kjps.isnra.org

# أيجاد حالات الربو القصبي لدى مراجعي مركز الحساسية التخصصي في كركوك

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## الملخص

الربو القصبي مرض مزمن وهو في زيادة انتشار في انحاء العالم. حيث بلغ عدد المصابين لحد عام2005 الى(300,000,000) شخص حسب إحصائية الامم المتحدة وهناك معلومات قليله عن نسبة انتشارها في الشرق الاوسط عموما . في هده الدراسة تم دراسة ايجاد حالات الربو القصبي في المركز التخصصي للحساسية في كركوك للفترة من الاول من كانون الثاني 2017الى 30 من كانون الاول 2017 ,وتم دراسة1840 حالة ربو قصبي من مختلف الاعمار من الفئة العمرية ( 1–4 ) سنوات حتى الفئة العمرية (65) سنه واكثر ومن كلا الجنسين وتم تشخيص الحالات عن طريق الفحص السريري واجراء فحوصات الدم وقياس حدة التنفس بجهاز فحص وضائف الرئة واشعة الصدر لبعض الحالات المستوجبة والمشابه لحالات التدرن وزرع البلغم للحالات المتوقعة للفطريات0

وأظهرت الدراسة ازدياد حالات البو القصبي ضمن مراجعي مركز الحساسية بنسبة 6.94% وكان المرض اكثر نسبة في البالغين حيث بلغ بالفئة العمرية

(20–44) نسبة 37.5 % والفئة العمرية ,(44–65 ) بلغ النسبة 28.7 % وهي عكس المتوقع حيث ان مرض الربو يصيب الاطفال عادة ويتم التحسن منه بالبلوغ بنسبة كبيرة .

وهناك زيادة في حالات الربو في مركزنا لموسم الربيع بالأشهر (اذار ,نيسان, مايس) وبلغ النسبة 29.8 % وكذلك زيادة في اشهر (الخريف ,ايلول, تشرين اول, تشرين ثاني )حيث بلغ 30.05 % وكان المرض في الاناث اكثر قليلا من الذكور في الاناث بنسبة 5.53 % وفي الذكور نسبة 49.47%

**الكلمات الدالة:** التركيب النووي، الاستئثارة التجمُعيّة، الطور العشوائي???????.

## 1. Introduction

Bronchial asthma: Is common chronic long term inflammatory disease of airways of the lungs and increasing airway hyper- responsiveness, characterized by variable and recurrent symptoms [1, 2].

Reversible airway obstruction and bronchospasm and symptom include episodes of wheezing coughing [3] tightness of chest and shortness of breath[1] these attacks reversible either spontaneously or with treatment .episodes may occurs a few times per day or a few times per week this become worse at night or with exercise[1] it often became at childhood[1]

The world asthma is from Greek word means “panting” [4]

Asthma is thought to be caused by complex combination of genetic and environmental factors [5].

Environmental factors includes exposure to airway pollution and allergens, other potential triggers include medication such as aspirin and beta blockers [1]

Asthma is classified according to the frequency of symptoms, forced expiratory volume in one second [Fev1] and peak expiratory flow rate [6]. It may also classified atopic or non-atopic, where atopic refers to predisposition toward development of type1 hypersensitivity [7]

Asthma is a complex multifactorial disease in which allergic factors and non-allergic triggers interact, results in bronchial obstruction and inflammation [8]. Exposure to various constituent including tobacco smoke, air born allergens ,dust mites, other in door pollutants is known triggers of wheeze or exacerbate of asthma in children they have been recently emphasized that indoor and outdoor allergens plays role in the etiology of childhood asthma[9].

In 2015, 358 million people globally had asthma up from 183 million in 1990. [10, 11] it caused death about 397.150 deaths in2015 in developing countries [1]

The prevalence of asthma in Middle East is lower than most developed countries however there is little longitudinal data to estimate the trend over time. [12]

The prevalence of asthma worldwide has increased during the last three decades.[13,14] The prevalence is increasing steadily in western countries .According to the world health organization estimate in 2005,around 300 million people affected with asthma, these number will reach 400 million in2025.[2] In some industrialized countries ,the prevalence is increasing in children [15]its reached to warning level and has affect more than one third of children[16].In Iraq asthma and allergic conditions in general has been increasing in the last three decades in relation to pollutions ,explosions ,oil companies , oil smoke, electric generators, cars and vehicle pollutions [17]

Asthma exacerbation is major cause of morbidity and mortality in asthmatic children [18]. According to study done by Smith kiln et al in 2002 around one third and those who were affected by asthma had some limitation in doing their daily activates such as physical, social activities, exercise and sleeping [19]

Seasonal variation in the frequency of asthma exacerbation, especially during child hood occur worldwide .Among preschool and older children most of seasonal information has been derived from studies of children who lived in the united states , Canada, the united kingdom and northern Europe[20,21,22] Several articles proposed that viral infections account for increase in asthma attack that are more pronounced during the fall when children's return to school[ 23] some studies report an increase in exacerbation in the spring[24].

Objectives

Al-Kitab Journal for Pure Science, 2019, 3(2): 120-130
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This study will estimate the prevalence 0f asthma in Kirkuk city in Tertiary allergy center for the period from first of January 2017 to 30th of December 2017.

## 2.Methodology

Setting and duration: The study was done in Tertiary center for allergic diseases in .Kirkuk from the period started from first of january2017 to the 30th of december2017
Subject and sample size
All attends member to tertiary allergy center included in the study, as a convenient .sample
.The patients stratified by age, gender, type of condition and seasonal variations

:Laboratory test
:The available lab. Tests which were applied to the study sample was as followed
Complete blood picture was performed for each patient complaining of allergic problem using 5 parts hematology analyzer [Quintus] [se. 12613 Stokholm-sweden] to detect the level .of eosinophil count for the confirmation of the diagnoses

:Examination equipment
The patient were examined clinically using liftmen's stethoscope and there blood .pressure by using mercury sphygmomanometer
For evaluation of asthma status peek expiratory flow meter was applied for suitable .cases

Chest x ray was applied for certain patients complaining from reproductive cough or bloody sputum specially during exacerbation to exclude other diseases, for presumptive tuberculous cases early morning two samples 0f sputum was performed to exclude the previous pulmonary tuberculosis among these patients and some un common cases as pulmonary candidiasis as Aspergillosis and Nocardiosis

## 2. Results and Calculations

Table-1-illustrate the distribution of asthmatic patients

| Months | Total asthmatic patients during each month | Percentage |
|---|---|---|
| January | 114 | 6.20 |
| February | 162 | 8.81 |
| March | 216 | 11.73 |
| April | 192 | 10.43 |

| | | |
|---|---|---|
| May | 141 | 7.67 |
| Jun | 85 | 4.61 |
| July | 117 | 6.36 |
| August | 135 | 7.34 |
| September | 191 | 10.39 |
| October | 164 | 8.91 |
| November | 198 | 10.76 |
| December | 125 | 6.79 |
| T0tal | 1840 | 100% |

Table -2- illustrate the total no. of patients according to seasons

| Season | Total asthmatic patients each season | Percentage |
|---|---|---|
| Winter [Dec, jan,feb] | 401 | 21.79 |
| Spring [march, April ,may] | 549 | 29.83 |
| Summer [Jun, July, August] | 337 | 18.31 |
| Autumn [Sep,October,nov] | 553 | 30.05 |
| All seasons | 1840 | 100% |

Table-3-illustrate the total no. of asthmatic patients according to age group

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| Age group | Total no, for each age group | percentage |
|---|---|---|
| 1—4 year | 58 | 3.15 |
| 5-9 year | 119 | 6.47 |
| 10-14 year | 167 | 9.07 |
| 15-19 year | 176 | 9.57 |
| 20-44 year | 690 | 37.5 |
| 45-64 year | 528 | 28.7 |
| 65 year and more | 102 | 5.54 |
| Total | 1840 | 100% |

Table -4-illustrate the distribution of asthmatic patients according gender

| Age group | Male | Percentage | Female | Percentage |
|---|---|---|---|---|
| 1- 4 years | 24 | 1.30 | 34 | 1.84 |
| 5- 9 years | 59 | 3.21 | 60 | 3.27 |
| 10- 14 Years | 96 | 5.22 | 71 | 3.86 |
| 15- 19Yaers | 77 | 4.19 | 99 | 5.39 |
| 20- 44 years | 317 | 17.24 | 373 | 20.28 |

| | | | | |
|---|---|---|---|---|
| 45 -64yaers | 272 | 14.79 | 256 | 13.92 |
| 65 years and more | 64 | 3.48 | 38 | 2.01 |
| T0tal | 1840 | 49.43 | | 50.57 |

This study shows an increase prevalence of asthma at Kirkuk tertiary center there are1840 cases of asthma from the whole allergy center attendance26509 in one year ,the prevalence was 6.94% as clear in table no.1 which is agree with asthma prevalence in the middle east as previously mention.

In table no 2 the seasonal fluctuation is clear there is increase asthma cases at spring months from April march and May. The prevalence was 29.83% and second increase at autumn moths September October and November the prevalence was30.05% and the lowest prevalence at summer months which was18.31% these results agree with all studies before.

Table illustrated the distribution of asthma according to age group which demonstrated significant higher in adults then child it is at age group20-44 total no.90 percentage37.5% and age group 45-65 total no.528 percentage28.7%.Which is not in occurrence with most studies showing predominance for asthma and wheeze during the first decade of life which reserved around time of puberty.

Table no.4 illustrate the distribution according the gender the table shows the female little high then males in the females was50.53% in males49.47 although studies found that women have 10.5 % higher chance of developing asthma over life time then men, boys under age 18 have 54% higher chance of develop asthma then girls.

## 3.Discussion

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The prevalence of asthma and allergy increased during last decades especially in child, however little is known about middle east region, , 50 studies in the middle east examine the prevalence of asthma and allergy in children under age of 18 years according to ISAAC criteria and were included total no. of 289.717 children were exam med in included studies the prevalence varied from0.7% in Isfahan to 22.3%to Baghdad. The total prevalence of diagnosed asthma was calculated 7.35%. The prevalence of asthma in Iranian child varied from1.26-11.6 the prevalence among Iranian school child is lower in compares for other neighbor countries [25,26].

According to study done among children at primary school in Baghdad the prevalence of asthma ever was 22.3%. Asthma was detected in 81.9% of those with wheezing in the last 12 months. Males was were predominant among child with asthma ever, Prevalence rates of asthma and of severe symptoms decreased with increasing age [27].

The prevalence of asthma in our study was 6.94% which agree with studies done at meddle east as shown above.

. In this study seasonal fluctuation is observed, there is an increase in asthma cases during spring months from march to May and autumn months from April to September and lower asthma cases at summer months, there are many provoking factors could play important role provokes asthmatic attack and need to be studded in addition to the findings in current study .

more detailed studies of environmental exposure that change parallel with seasonal epidemic of asthma in our locality for improving our understanding of the etiology and prevention of bronchial asthma in our locality [17]. Although studies found that women have 10.5% higher chance of developing asthma over their life time than men, boys under age 18 have 54% higher chance of develop asthma than girls[27]. In Europe asthma is more common in females 4.3% than in males [28,29] Women generally have disproportionate greater share of caring and house hold responsibilities then men as result they tend to be more exposed to asthma triggers like allergens [dust mites, fungus, molds and yeasts] and sensitizing agents [cleaning materials and house sprays] also perfumes, social personal health products cosmetics and others [29].In our study female asthmatic patients higher than male which agree with studies above.

The prevalence asthma in our study is high in adults than in children it is in occurrence with study done in Ma'an govern ate, Jourdan study demonstrate significant higher prevalence of asthma in adults than in children, this findings are not in occurrence with most studies shown predominance for asthma and wheeze during first decade of life which is reserved around time of puberty [30,31].

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