



Frequency of respiratory diseases in Al-Ramadi respiratory consultation clinic

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Abstract

Background: Respiratory disease, or lung disease, are pathological conditions affecting the organs and tissues that make gas exchange difficult in air breathing animals. They include conditions of the respiratory tract including the trachea, bronchi, bronchioles, alveoli, pleurae, pleural cavity, the nerves and muscles of respiration. Respiratory diseases range from mild and self-limiting, such as the common cold, influenza, and pharyngitis to life threatening diseases such as bacterial pneumonia, pulmonary embolism, tuberculosis, acute asthma, lung cancer, and severe acute respiratory syndromes, such as COVID-19.

Objective: To determine the frequency of different types of respiratory disease among patients attending Ramadi respiratory consultation clinic.

Methods: A cross sectional study was carried out on patients with different type of respiratory disease attended to AL-Ramadi Respiratory consultation clinic during the period between 1st September 2020 to 1st April 2021. Total of 4334 patients 2066 male and 2268 female who was attended al Ramadi Respiratory center constituted the study group.

Results: Of the 5685 patients studied, 2718 of them were males and 2967 were females and the female to male ratio was found to be 1.08. The P-value was not significant (P-value >0.05). In this study chronic bronchitis and acute bronchitis were noticed in higher percentages shown in table 1. With respect to the age group we notice a marked increase in the number of patients in the age group above 20 years old and below 40 years old (young group).

Conclusion: This current study provides evidence that respiratory illnesses account for significant and increasing the number of patients during winter season and during this period we find markedly increase the number of patients with chronic bronchitis, acute bronchitis and allergic bronchitis, which represent the leading cause of attending respiratory consultation clinic followed by pneumonia.

Keywords: respiratory disease, lung capacity, obstructive lung disease and restrictive lung disease

Introduction

Respiratory diseases range from mild and self-limiting, such as the common cold, influenza, and pharyngitis to life threatening diseases such as bacterial pneumonia, pulmonary embolism, tuberculosis, acute asthma, lung cancer, and severe acute respiratory syndromes, such as COVID-19. Respiratory disease can be classified in many different ways, including by the organ or tissue involved, by the type and pattern of associated signs and symptoms, or by the cause of the disease.

Obstructive Lung Disease

Is a category of respiratory disease characterized by airway obstruction, Asthma, chronic bronchitis, bronchiectasis and chronic obstructive lung disease (COPD). This limits the amount of air that able to enter alveoli because of construction of the bronchial tree, due to inflammation, obstructive lung disease are often identified because of symptoms and diagnosed with pulmonary function test such as spirometry. Although COPD shares similar characteristics with all other obstructive lung disease, such as the signs of coughing and wheezing, they are distinct conditions in terms of disease onset, frequency of symptoms and reversibility of airway obstruction [3].

Restrictive Lung Disease

Are category of extra pulmonary, pleural or parenchymal respiratory disease that restrict lung expansion, and its pattern of abnormal lung function defined by a decrease in

lung volume, either because of disease of the pleura, chest wall, or neuromuscular apparatus [4]. The total lung capacity is decreased and in severe restrictive defect, all of the subdivisions of the total lung capacity including vital capacity, functional residual capacity, and residual volume are decrease. It is often due to decrease in the elasticity of the lung themselves or caused by problem related to the expansion of the chest wall during inhalation like pneumonia, asbestosis, sarcoidosis and pulmonary fibrosis [1, 2]. Restrictive lung diseases are often divided into two groups, depending on whether their causes are intrinsic (due to stiffening, inflammation, and scarring of lung tissues they include pneumonia, tuberculosis, sarcoidosis, idiopathic pulmonary fibrosis and lung cancer). Or extrinsic (complication with tissues or structures outside of the lungs, including neurological conditions, muscle weakness, or stiffening of the chest wall, like pleural effusion, scoliosis, neuromuscular disease, myasthenia gravis and diaphragm paralysis [10].

Chronic bronchitis

Its type of COPD which is a group of lung diseases that makes it hard to breathe and get worse over time, the other type of COPD is emphysema. Most patients have both emphysema and chronic bronchitis, the long term exposure to irritant (second hand smoke, air pollution, and chemical fumes or dust from the environment or workplace) are the most common cause, rarely, genetic condition called alpha-1-antitrypsin deficiency can play role in causing chronic

bronchitis. The symptoms are frequent coughing, wheezing, shortness of breath and chest tightness.

Acute bronchitis

Caused by virus or bacteria, or it can be caused by allergies. Coughing is the main symptom of both acute and allergic bronchitis, with acute bronchitis, the cough usually lasts a few days or weeks, producing yellow or green mucus, fever and sometimes chills.

Allergic bronchitis

Involves inflammation of the bronchi caused by an allergen, or airway irritants such as pollen, dust, and mold can trigger symptoms.

Asthma

Is chronic inflammatory airway disease, affecting millions of people globally. The prevalence of asthma is variable around the world, ranging from 1-20% for both children and adults. There is wide variation among countries, in addition to the use of different measurement tools and different epidemiological definitions of asthma.

Covid 19

The first patient with covid -19 was reported in Iraq was reported in Iraq on 24 February 2020 for the Iranian student who came from Iran. As of 24 May 2020, the confirmed cases of COVID -19 infections reached 4469, with 160 deaths and 2738 patients recovered from the infection [5].

Nasiriya Technical Institute Study

About 45 % of patients were females (with 31% death of the total case. and 55 % were male (with 68% deaths of the total cases) most cases are between the age of (20-59) years old [5]

BOLD study

Burden of obstructive lung disease [6].

BOLD study: burden of obstructive lung disease. The Prevalence of and potential risk factors for chronic bronchitis symptoms. This study show the median prevalence of chronic bronchitis was 2.6%, with wide variation across countries ($P < 0.001$, 0.7 – 0.9.7%) [6]

The 2nd Dutch National Survey of General practice: - incidence of GP- diagnosed respiratory tract infection according to age, gender and high – risk co- morbidity [7].

Sudi Med J study

Asthma prevalence among adults in Saudi Arabia, to investigate asthma prevalence and to measure asthma symptoms among Saudi adults in Riyadh [8].

The prevalence of physician diagnosed asthma was 11.3 with no significant different between male and female [8].

Fallujah study

Prevalence of Tuberculosis in Al – Fallujah, Iraq 2012–2018 [9]

Victor Kim and Gerad J. Criner study

Cross sectional studies that compared clinical characteristics in subject with chronic bronchitis and chronic obstructive

pulmonary disease [11]

Aim of Study

The main purpose of this study was to determine the frequency of different types of respiratory disease among patients attending Al-Ramadi respiratory consultation clinic.

Materials and Methods

This prospective study was performed on patients with different type of respiratory disease attended to AL- Ramadi Respiratory center during the period between 1st August 2020 to 1st April 2021. Total of 5685 patients 2718 male and 2967 female who was attended al Ramadi Respiratory consultation clinic constituted the study group. Data were collected from outpatient s registration and follow up sheets of all patients, regarding age, sex, residence, result of all investigation and final diagnosis, also, personal information of the patients was kept confidential. For statistical analysis SPSS – 20 (statistical package for social sciences – version 20) and the chi-square test was used to analyze the group's percentage in addition to the statistical tables. Variables were described using frequency and percentages. A P-value < 0.05 was considered to be significant and a P- value > 0.05 considered to be not significant.

Results

Of the 5685 patients studied, 2724 of them were males and 2961 were females and the female to male ratio was found to be 1.08. The P-value was not significant ($P > 0.05$) in this study chronic bronchitis and acute bronchitis were noticed in higher percentages shown in table 1.

Table 1: Distribution of patients according to the type respiratory diseases

Respiratory disease	Male	Female	Total No.	Frequency
Chronic bronchitis	876	765	1641	28.86 %
Acute bronchitis	662	801	1463	25.74
Pneumonia	452	504	956	16.82 %
Suspected covid 19	380	333	713	12.55 %
Chronic bronchial asthma	179	275	454	7.98%
Pulmonary TB	78	102	180	3.16 %
Other respiratory disease	97	181	278	4.89%
Total No.	2724	2961	5685	100.00

With respect to the out patients registration rate in the respiratory consultation clinics. The percentage was high during winter months. Patients with repeated visits are considered as one case, as shown in table 2.

Table 2: Frequency of patients per months

Months	No. of patients	Percentage
August 2020	667	11.74 %
September 2020	539	9.48 %
October 2020	675	11.88 %
November 2020	780	13.73 %
December 2020	649	11.41 %
January 2021	786	13.82 %
February 2021	905	15.91 %
March 2021	684	12.03 %
Total No.	5685	100.00

Table 3: Frequency of patients according to the gender

Months	Male No.	Percentage	Female No.	Percentage
August 2020	320	5.62	347	6.10
September 2020	441	7.76	464	7.59
October 2020	333	5.68	342	6.01
November 2020	404	7.10	376	6.61
December 2020	330	5.80	319	5.61
January 2021	302	5.31	484	8.51
February 2021	256	4.50	283	4.97
March 2021	338	5.94	346	6.08
Total No.	2724	47.92	2961	52.08

With respect to the age group we notice a marked increase in the number of patients in the age group above 20 years old and below 40 years old (young group).

Table 4: Distribution of patients according to the age group

Age group (years)	Total No.	Percentage
0 – 20	1471	25.88
21 – 40	2003	35.24
41 – 60	1719	30.24
61 – 80	424	7.45
Above 80	68	1.19
Total No.	5685	100.00

Table 5: Frequency of respiratory diseases according to months

Respiratory disease	August 2020	Septem 2020.	October 2020	November 2020	December 2020	January 2021	February 2021	March 2021	Total No.
Chronic bronchitis	197	152	167	288	201	194	251	191	1641
Acute bronchitis	183	161	130	175	152	224	234	204	1463
Pneumonia -	112	103	144	104	105	133	146	109	956
Suspected COVID 19	72	36	140	113	68	69	149	66	713
Bronchial asthma	65	53	33	46	57	86	42	72	454
Pulmonary TB	17	13	34	34	41	53	54	14	180
Other resp. diseases	31	21	27	20	25	27	29	28	278
Total No,	667	539	675	780	649	786	905	684	5685

Discussion

This study is the 1st study done about the frequency of respiratory disease in Al- Ramadi districts depending on the information from the outpatient registration unit and follow up sheet of all patients in the consultant clinic of respiratory disease in Ramadi district. Al- Ramadi district is the center of Al- Anbar province which situated at the west of Iraq (about 100 K. meter from Baghdad – capital of Iraq). The total population is about 668410 people. This current study provides evidence that respiratory illnesses account for significant and increasing the number of patients during the winter season (December 2020 – January 2021). And during this period we found markedly increased the number of patients with chronic, acute and allergic bronchitis. The result show that obstructive pulmonary disease (chronic bronchitis) account for the majority of cases, this is compatible with other studies as the (Victor Kim and Gerad J-Criner study) 11 And there is increase male/female ratio because the males represent the majority of working staff in this city due to the culture of community and life style. And the majority of them working in dust place and more exposed to secondhand smoke, irritant material, chemical fumes or dust from the environment or workplace, and basically large number of them are heavy smoker. And markedly increase cases in winter season (november2020-January 2021) the result also shows an increase in percentage of patients between the age 20-40 years old (young and working group). A high number of this age group are cigarette smokers. Regarding Pneumonia: - its account (16%) of total cases, most of them viral origin, was higher than other studies like (The 2nd Dutch national Survey of General Practice) [7]. Because of the high number of patients exposed to contaminated environments. There is no relationship between the number of cases and time (season) but there is a slight difference between male and female cases (female cases slightly higher and females /males ratio = 1.11). Regarding suspected COVID 19 cases: - its account (12.54%) there is fluctuation in number of

cases specially during the last 6months and there is significant association between the sex of patients and the risk factor (the number of males cases more than females and increase males /females ratio) because males are more expose to environmental contamination and overcrowding and infected site. The most cases are between the age of (20-60) years old. And this is compatible with Nasiriyah Technical Institute Study. (5) Regarding Chronic Bronchial Asthma: - Its account (7.98%). There is slightly increased number of cases during winter time and there's significant difference between male and females (females cases more than males cases and female /male ratio = 1.53). My study is incompatible with SAUDI MED J study (8) Regarding Pulmonary Tuberculosis (PTB): - Its account 3.16 % with increased number of cases during winter season and significant difference between males and females (increase females/males ratio.) Most cases are between the age 40-80 old age group, the result of this study more than and incompatible with Fallujah study (9). Regarding other respiratory disease: - its account 4.89% females were affected more than males. It includes many types of respiratory disease like acute laryngitis, pulmonary fibrosis, pleural effusion, flu like illness, pulmonary edema and others. The prevalence rate of respiratory disease of Ramadi city: - 85.05 for each 10,000 people.

Conclusion

This current study provides evidence that respiratory illnesses account for a significant and increasing number of patients during the winter season and during this period we find a marked increase in the number of patients with chronic bronchitis, acute bronchitis and allergic bronchitis, which represent the leading cause of attending respiratory consultation clinics followed by pneumonia.

Recommendation

AS the epidemiology of adult disease transitions from infectious to non-communicable disease, health researchers

and policy makers will need to establish reliable and consistent systems for diagnosis and recording disease in order to optimize treatment and preventive intervention. The methods suggested to slow progression of disease and decrease hospitalization include: water and food sanitation, smoking cessation or 2nd hand smoke, avoiding overcrowding places or dust from environment, wearing face masks and using personal protective means and encouraging hand washing with soap and disinfectant material.

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