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Asthma Incidence be Controlled by the Patient Who Intake Drugs with Good Life Style

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Abstract. Asthma is an inflammatory disease that effect the lung, particularly the airways. So many death cases had been recorded in the last decade due to its complications. As the symptoms (wheezing, SOB, broncho spasm, etc..) frequency per a day increased, the mortality rate increases with the development of bad life style and bad triggers (smoke, dust, food, car full's, perfume, medication, food, etc..) there is a serious need to put a focus on the regulation of treatment and life style to these patient. Although asthma is multi factorial (genetic and environmental predisposing) with no statistically sufficient information in Iraq there is an increase the no hospital admittion daily and delay the responses to the treatment. *Aim.* to study the biochemical markers effect the cases of asthmas and to evaluate the abnormality in sleeping period, performing the job in these patients and the responses to the medication *Methods.* A study was made from 200 asthma patient, there were between seventeen and more years old, they admitted to the respiratory center in Najaf province at Sader medical city. It started from 10th of 2018 to 5th of 2019. A data was collected from the patients after direct contact with them or with their relatives. The SPSS version 20 and EXCIL programs were used for analysis of the information . *Results.* it revealed that the majority of the female patient aged how aged from 40 to 49 years old were depended on inhaled steroid during their first line treatment. These patients suffered from difficulty in having a normal life style or normal job requirement. Most of them suffered from shortness of breath (SOB), wheezing, tightness in the chest, they were suffered from difficulty in normal sleeping. Conclusion: asthma occurrence in Iraq is increased tremendously that required more interest with better improvement of life style to perform a good sleeping period and decrease the hospital admission frequency. Recommendation. a further life style rearrangement and more medical care should be occur to decrease the sudden attacks that it may effect on the life span of the patients.

Keywords. Asthma, corticosteroids, long-acting beta-agonists, Chronic obstructive pulmonary, nocturnal attack

INTRODUCTION

Asthma is one of the most common inflammatory disease that attack the young patients in Iraq. It affect not only the normal function of the body but also disturb the normal life style and prohibit the normal sleep period. More than fifteen percent of the total Iraqi population affected and suffer from this disease and as with developing of the last technology and increase the air pollutions and un healthy diet together with increase the complication of the life the period of asthma attach and its incidence increase exponentially.(1,2)

This disease diagnosed by many symptoms including broncho-spasm, shortness of breath, coughing, sneezing and airflow obstruction. It could be getting really bad at night or after heavy running and after long day work that could be even interfere with the normal life style.(2,4). Ironically some time it could be prevented by regulation of the life style weather healthy food, clean air, avoiding the smoking, gases, dust and chemical or even living in the farm away from the cities as it could be caused not only by environmental but also could be caused by a genetic reasons(4-6).

As mentioned previously, its symptoms. Signs and symptoms of asthma may include: sputum discharge, Shortness of breath, wheezing, coughing and others and it could be increase at mid night. Dawn and at the early morning and in very cold or very hot weather (7-9)

Chronic obstructive pulmonary disease can be presented with asthma especially at the age more than sixty. Chronic obstructive pulmonary disease can be diagnosed by increase the neutrophils. Both asthma could be controlled by many class of drugs including: corticosteroids, long-acting beta-agonists and others (10)

Asthma could not be controlled completely, but is symptoms can be managed by reduce the exposure to the causative factors weather reduce smoking, avoidance the dust and dirty weather, chemicals, heavy exercise, and incomppliance to asthma medication(11).

These drugs include the following (12):

- 1-Bronchodilators for a short-term relief of symptoms, and reduce its attack : aminophylline
- 2-leukotriene receptor blockers(montelukast and zafirlukast)
- 3-corticosteroids (IV or inhaler)
- 4-beta agonists (salbutamol, salmeterol and formoterol)
- 5-mixing sprays containing both corticosteroids and long-acting beta-agonists
- 6-Anticholinergic medications, such as ipratropium bromide

This study had been conducted to see the degree of response of the patients to medication and the clinical risk factors of asthma and to assess the asthma control depending on the asthma control test (ACT) and to determine the distribution of this disease according to gender, age and duration of disease.

METHODS

Two hundred asthma patient had been selected (84) male and (116) female based on the fact that highest prevalence of asthma was about 20 % of the total population. The age were seventeen and more from Al Sader medical city at An Najaf province for the period between October 2018 and June 2019. The socio-demographic

history of the patients and the drugs used; symptoms of asthma, day and night attack, at the last two months; and its effect on the work, time of admission to the emergency room or to hospital wards.

MDA in blood is occurred to help in diagnosis of asthma based on Muslih et al.; it base on mixing the serum with TCA and left for 15 minutes then mixed with H₂SO₄ and TBA, after that it was heated for half hour in 70C water bath. finally it was mixed with butanol and centrifuged at two thousand round per minute measured by spectrophotometer at 553 nm (21)

A well-constructed questionnaires was taken and the data were taken at the time of admission of the patient to the hospital and it includes general history, family history, socioeconomics, medical history and others.

The data were analyzed using SPSS software version 20 and excel programs and the p value ≤ 0.05 was considered to be statistically significant.. those included in this study were those ager more than seventeen years old and those younger than this year were excluded .

The asthma control test tool were used and the questionnaire with 5 items assessing asthma symptoms (night time and daytime), use of treatment, and the effect of asthma on daily life.

Each item includes 5 options. In scoring the asthma control test, all responses were collected to yield a score ranging from 5 (poor control of asthma) to 25 (complete control of asthma). Finally, the patients classified to three groups: poorly controlled (the result were between 5-14),not well-managed (15-19), and well-controlled (score between 20-25).

RESULTS

From the two hundred men and women, 42% (84 male) and 58% (116 female) (male to female ratio was 1:1.22), The average age in years that is mean \pm SD of the participants was between 17 - 72 (38.125 \pm 15.159) (Table 1). In this study, more than nine percent of patient admitted to the hospital (needed hospitalization), and twenty eight percent needed emergency medical visit. All of these patients used quick relief treatment, fifty five patient use corticosteroid as inhalation, 42 patient used combination of inhaled corticosteroid and beta agonist and 17 % (34 patient) used montelukast, aminophylline and the remaining use other different medication including β agonist as an inhalation.

Twenty three patients had a good control state, forty sex man and woman were not well controlled and 110 patient were poorly controlled .

The was a significant relation between the level of asthma management and the increment of the emergency visit but not significantly related to the hospitalization, not only that but also there is a significant relation between this disease control and the use of combined inhalation that contain both beta agonist and corticosteroid while the is not such a good control seen when use only inhaled corticosteroid or inhaled β agonist

Almost seventy patient suffer from wheezing which represent about thirty five percent of the total population, and thirty five volunteer suffered from night wheezing how are aged between seventeen to twenty years old . at the last month of asthma assessment by the asthma control test we observed fifty seven man and woman suffered from wheezing. There was a decrement in the degree of symptoms with increasing age

The limitation of activity caused bay asthma attack (limitation of outcome during work, school or even normal home business) classified patient in to those suffer from some but not complete limitation of activity how was about seventy three percent, while those how had complete or almost complete limitation represents about sixty four patient.

More than two-third of the total people (77%) had a sever shortness of breath while sixty eight patient had a complete difficulty in breathing.

More than sixty percent of these people waked up at night or earlier morning due to the asthma attack but 46% had the attack most of the day. For those used inhaler treatment for some time there was about 162 patient while 44% suffered most of time. Only 23% not well controlled and 11% control their attack very good and about fifty five percent were control the attack very badly. Not significant relation was seen between the level of control and the age, as some of patients controlled their attach very good at ages of 18, 22 35 and more while the other not interested in good management of their heath style at different ages. Emergency medical visit showed a significant improvement and a very good control of the asthma attach compared to those how visit hospital at irregular time. The regular use of combined treatment of inhalation showed a significant improvement of the asthma case compared to those use only beta agonists or corticosteroids as an inhalation

TABLE 1. The distribution of asthma patients according to the age and gender

Age	NO.	%
(Year)		
<20	43	21.5
20-29	17	8.5
30-39	44	22
40-49	49	24.5
50-59	29	14.5
60-69	14	7
> 70	4	2
Mean \pm SD	38.125 \pm 15.159 (17-72)	
Gender		
Male	84	42
Female	116	58

TABLE 2. The distribution of asthma patients according to the Hospitalization and emergency medical visit and the use of medications.

	No	Percent
Hospital	19	9.5
Emergency	56	28
Quick relief	200	100
Inhaled corticosteroid	55	27.5
Inhaled Combined therapy	42	21
Others	34	17

TABLE 3. The Asthma Control Test Questionnaire in 200 patient.

The Asthma Control Test (During the last 4 weeks)		No.	%
How often did your asthma prevent you from getting as much done at work, school or home?	1(all of time)	10	5
	2(most of time)	36	18
	3(some of time)	44	22
	4(a little of time)	56	28
	5(none of time)	54	27
How often have you had shortness of breath?	1 (more than once a day)	47	23.5
	2 (once a day)	41	20.5
	3(3-6 time a day)	50	25
	4(once or twice a week)	16	8
	5(not at all)	46	23
The frequency of asthma symptoms occurrence weather coughing, chest tenderness, wheezing, difficulty in breathing that wakes up the patient at night or early in the morning	1(4 or more nights a week)	62	31
	2(2-3 nights a week)	30	15
	3(once a week)	20	10
	4(once or twice a week)	16	8
	5(not at all)	72	36
How often have you used your reliever inhaler (usually blue)?Number of using quick relief medication	1(3 or more times per day)	32	16
	2(1-2 times per day)	56	28
	3(2-3 times per week)	30	15
	4(once a week or less)	44	22
	5(not at all)	38	19
How would you rate your asthma control?	1(not controlled at all)	6	3
	2(poor controlled)	110	55
	3(not well controlled)	46	23
	4(well controlled)	23	11.5
	5(completely controlled)	15	7.5

TABLE 4. The distribution of degree of Asthma Control according to the age and gender

		Degree of Asthma Control Test (ACT)										P value
		Not controlled		Poor		Not well		Well control		Complete		
		No.	%	No.	%	No.	%	No.	%	No.	%	
Age in years (no of pt.)	<20 (43)	3	7	18	21	14	32	6	14	2	2	0.652
	20-29 (17)	0	0	10	59	2	12	3	17.6	2	11.7	
	30-39 (44)	0	0	29	65	9	20	1	2	5	11	
	40-49 (49)	0	0	35	71	12	24.4	0	0	2	4	
	50-59 (29)	3	10.3	12	41	6	21	6	21	2	7	
	>60 (18)	0	0	6	33.3	3	16.6	7	38.8	2	10.5	
	Total (200)	6	3	110	55	46	23	23	11.5	15	7.5	
Gender	Male (84)	4	4.7	51	60.7	16	19	8	9.8	5	6	0.351
	Female (116)	2	1.7	59	50.8	30	25.8	15	12.9	10	8.6	

TABLE 5. The relation between degree of asthma control and hospitalization and emergency medical visit in the last year.

Total	Degree of Asthma Control Test					
	Poor		Not well		Well	
		%		%		%
Hospital (17)	9	53.7	5	29.2	3	17.1
Emergency (50)	30	6.2	11	22.3	9	18.6

TABLE 6. The relation between degree of asthma control and the use of medications.

Total	Degree of Asthma Control Test						P value
	Poor		Not well		Well control		
	No	%	No	%	No	%	
Inhaled Corticosteroid(49)	17	34.7	14	28	18	36.3	0.065
Combined Therapy (38)	16	42.3	9	2.3	13	34.3	0.052

TABLE 7. Measurement of serum level of MDA in patient with asthma

Total	Measurement of serum level of MDA in Control Test					
	Poor		Not well		Well	
Hospital (17)	6.82±1.2		4.65±3.2		2.4±0.5	
Emergency (50)	7.5±5.3		5.55±3.2		3.2±0.2	

DISCUSSION

More than nine percent of people enrolled in this study had a hospitalization which was more than Bassam et al (13) and in Europe and United States (14). There were less (28%) patient admitted in the emergency room than what was seen in AIRMAG study (50%) (15)

Most of cases that treated was based on a corticosteroid only as a starting at which about more than 27.5% of these patient used inhaled corticosteroid which is more than those seen in South African and less than AIRGNE study(16-18). More than twenty percent of the patient enrolled in this study used combined inhaled corticosteroid and beta agonists. More than 73% suffered from asthma attack that prohibit the patient from perform their normal life and work and daily school homework and this is more than that seen in AIRMAG which showed 75 % of patient suffer from asthma attack(15)

Asthma attach symptoms during the day occurred in about 64% of this population which is lower than Khadadah and AIRMAG (15,18). nocturnal attack that wakes up patient at night or early morning accured in 64% which is higher than what is seen in Eastern Europe (19) . eighty one percent of the total patient enrolled used quick relief medication at the last thirty days which is more than that of Laurent et al. fifty five percent had a bad controlled attacks of asthma and 23% had not well and 11.5% had a very bad control which is more differ than Khadadah et al(18). table 7 revealed that the serum level of MDA is increase in its level with the degree of control of the patient, i.e, there is an increment in tit level in emergency patient particularly in those with poor control as compared with those admitted in hospital with a very good control patients. It may be used as indicator of the severity of asthmatic attach

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