

Asthma Control in Primary Care

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Background: Asthma is considered a major health problem. The burden of asthma is overwhelming.

Objective: To assess asthma control in known asthmatic patients.

Design: A Retrospective Study.

Setting: Asthma Clinic, A'ali Health Center, Bahrain.

Method: Forty-seven patients were included in the study. Patients' asthma control was assessed through asthma clinic from January 2012 to December 2012. Data collected included age, sex, smoking, allergy, level of control, Peak Expiratory Flow Rate (PEFR), asthma control test (ACT), and level of asthma severity at the beginning and end of 2012. This asthma clinic utilized The Global Initiative for Asthma (GINA) guidelines in the management of asthma along with recent treatment of asthma, which include combined inhaled corticosteroid (ICS) and long acting beta agonist (LABA).

Result: Forty-seven patients were included in the study. The ACT and PEFR of the patients have improved significantly at the end of the study period. In addition, 19 (40%) demonstrated good asthma control at the end of the observation period.

Conclusion: More than 40% of the patients achieved asthma control at the end of the year. There was a statistically significant difference in asthma parameters after enrollment in the clinic. Therefore, asthma control is better achieved after enrollment in specialized asthma clinics.

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Asthma is considered a major health problem. The term asthma is derived from the Greek word "azein" which means to "breathe hard". Asthma is considered one of the most prevalent allergic respiratory diseases with noticeable influence on patients' quality of life¹.

The prevalence of asthma in the Middle East is variable and diverse. It differs from one country to another in the same region or within the country. The prevalence in Saudi Arabia was reported to be 23.6% and in Qatar was 19.8%. In Oman, the prevalence varied from 7.8% to 17.3% depending on the region studied. The mean prevalence of clinical asthma in Bahrain is 5.8%²⁻⁵.

The evolving evidence suggests a trend of increased diagnosed asthma prevalence worldwide and in this region²⁻⁵.

It is estimated that the number of disability-adjusted life years (DALYs) lost due to asthma to be 15 million per year. This is comparable to DALYs lost due to diabetes, liver cirrhosis or schizophrenia²⁻⁵.

The World Health Organization (WHO) in collaboration with the US National Heart, Lung, and Blood Institute developed the Global Initiative for Asthma (GINA) in 1993, and generated reports in 1995 and 2002. The GINA established diagnostic and management strategies, which are used in many countries⁵.

A survey of 1,000 patients was performed in five countries: Jordan, Kuwait, Lebanon, Oman and United Arab Emirates, 68% had day asthma and 51% had night asthma symptoms in the last 4 weeks. There was obvious inter country and intra country variation in all the parameters but the general conclusion at the end of the study is that asthma prevalence is relatively low in the Middle East although some areas are more afflicted than others and that the asthma control in the Gulf and Near East region is low (less than 20%)⁶.

A well-designed asthma clinic was adopted in some countries including Kuwait. A study comparing asthma symptoms in asthmatic patients in asthma clinic versus primary care general clinics showed significant positive difference in asthma symptoms in patients attending special asthma clinic ($P=0.0001$)⁷.

The aim of this study is to assess the asthma control in known asthmatic patients after enrolling in a well-designed and structured asthma clinic.

METHOD

Forty-seven patients were included in the study, from January 2012 to January 2013. The asthma clinic adopted GINA guidelines for the management of asthma.

The criteria used for asthma diagnosis were according to GINA guidelines. Inclusion criteria were asthmatic patients who attended asthma clinic three or more times during the study period.

Exclusion criteria were asthmatic patients who attended asthma clinic two times or less during the study period.

Data collected included age, sex, smoking, allergy, level of control, Peak Expiratory Flow Rate (PEFR<80% of PEFR/predicted of PEFR), asthma control test (ACT), and level of asthma severity at the beginning and at the end of the study period. Asthma severity is assessed by asthma control and is classified according to GINA guidelines into three categories: controlled, partially controlled and uncontrolled. The level of control is categorized according to the therapy the patient had achieved.

Data were analyzed using SPSS 19. Mean and standard deviation of the study variables were calculated at the beginning and end of the study period. The differences were considered significant when $P \leq 0.05$ and considered highly significant when $P \leq 0.005$.

RESULT

Forty-seven patients were included in this study. Thirty-two (68%) were females. The mean age was 51.085 years. The age of the sample was classified into 3 categories: 8 (17.02%) between 18-39 years, 27 (57.45%) between 40-59 years, and 12 (25.53%) above 60 years, see figure 1.

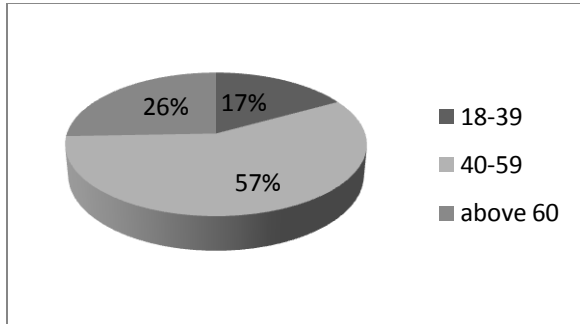


Figure 1: Age Distribution

Three (6.4%) patients were smokers. No history of allergies was reported in this cohort. Table 1 reveals statistically significant difference in improvement of ACT and PEFR.

Table 1: Means of ACT and PEFR

	Beginning	End	P-value
ACT	16.74468	19.70213	0.0101
PEFR	59.53191%	69.22213%	0.0241

Table 2 reveals asthma severity at the beginning and end of the study. There is an obvious significant improvement in the level of control after enrolment in the clinic. More than 40% achieved asthma control at the end of the year.

Table 2: Level of Control at the Beginning and End of the Study

	Beginning	End	P-value
Controlled	8(17.1%)	19(40.4%)	0.0001
Partially controlled	18(38.2%)	20(42.5%)	
Uncontrolled	21(44.7%)	8(17.1%)	

There was a statistically significant difference in improvement of PEFR among the age groups $P=0.017$. No statistically significant difference in ACT was seen among the age groups ($P=0.26$).

DISCUSSION

The ACT and PEFr significantly improved in this cohort after standardizing the treatment in the asthma clinic. Few studies were found that measure the improvement in the ACT and PEFr after enrolling in asthma clinic. However, the levels of ACT and PFT in asthma clinics were significantly better than their counterparts in standard primary care clinic ($P=0.003$)⁸.

The ACT questionnaire is composed of questions that assess the quality of life including: absence of work, shortness of breath, asthma symptoms, using rescue medication and rating overall asthma control. The ACT has improved dramatically after enrolling in the clinic which reflects improvement in all the above parameters and thus improved quality of life^{5,6}.

The percentage of controlled asthmatic at the end of the study period was 40%, which is greater than the percentage of controlled obtained in another study (20%)⁶.

The study was intended to measure the asthma control among the stratified age groups; it could not be achieved due to the small number of patients in each age group.

The prevalence of smoking was 6% while the prevalence of smoking in Bahrain is 20%^{9,10}. The prevalence of smoking in Canadian asthmatics was 21% and in the AIRGNE population was 15%^{10,11}. The low level of smoking in our cohort may be due to increased awareness about the adverse effects of smoking on their medical illness.

CONCLUSION

The available evidence suggests an increased prevalence of asthma worldwide. Asthmatic patients are under-diagnosed. Programs designed to improve asthma control should be adopted. This study has proved that specially-designed asthma clinic in the primary care setting in Bahrain is able to improve asthma and thus improve the quality of life.

This study was limited by the small number of patients. In addition, the study is retrospective, which has inherent biases of missing data and examiner bias.

Properly diagnosing and treating asthma should be stressed among primary care physicians. Patients should be able to monitor their asthma progress by providing home monitor peak flow meter.

Potential Conflicts of Interest: None.

Competing Interest: None.

Sponsorship: None.

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Ethical Approval: Approved by the Research Committee, A'Ali Health Centre, Kingdom of Bahrain.

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