MANAGEMENT OF BRONCHIAL ASTHMA IN KHARTOUM STATE HOSPITALS

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Abstract
Bronchial asthma is considered as a major public health problem in many countries. (WHO, 2014) Asthma defined as a chronic inflammatory disorder of the airways causes recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, particularly at night or in the early morning. Objectives of the research, to find out prevalence and control of asthma among different age and gender groups of Sudanese asthmatic patients, to check if standard treatment guidelines exist at Alnaw Teaching Hospital and adhered, to assess the effectiveness of drugs used through follow up of patients over a specified period of time, to determine the important role of clinical pharmacist, if any, in treatment of asthma and monitoring of asthmatic patients and to educate the patient about the disease and medications in order to improve the health status and quality of life with help of questionnaire with patient counseling. Prospective hospital based survey to be conducted on 122 asthmatic patients selected randomly in both genders and adults who visit the respiratory departments in Alnaw Teaching Hospital, during study period, October 2013-December 2014. Data will be analyzed by SPSS software version 17, with confidence interval 95%; (CP≤ 0.05) using appropriate tests.

Keywords: Bronchial Asthma, Management, Diagnosis, severity, drugs, control, prevention, plan, education, occupation, missed days, ER visits, hospital admissions, aggravating factors, symptoms, exercise, activities limitation, seasonal relations.
INTRODUCTION

Asthma is a chronic disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. (WHO, 2014). Symptoms may occur several times in a day or week in affected individuals, and for some people become worse during physical activity or at night. Recurrent asthma symptoms frequently cause sleeplessness, daytime fatigue, reduced activity levels and school and work absenteeism. (WHO, 2014). According to WHO estimates, 235 million people suffer from asthma. Asthma is the most common chronic disease among children. Asthma is not just a public health problem for high income countries: it occurs in all countries regardless of level of development. Over 80% of asthma deaths occurs in low and lower-middle income countries. (WHO, 2014). An estimated 14 to 15 million persons in the United States have asthma (about 5% of the population). Asthma is the most common chronic disease among children in the United States, with approximately 5 million children affected. Over the past two decades in the United States, the prevalence of asthma has increased by 75%, whereas the rate in children younger than age 5 has increased 160%. (Kelly, H.W. and Sorkness C. A., 2005). Asthma represents a complex genetic disorder in that the asthma phenotype is likely a result of polygenic inheritance or different combinations of genes. Initial searches were focused on establishing links between atopy (genetically determined state of hypersensitivity to environmental allergens) Thus, although genetic predisposition to atopy is a significant risk factor for developing asthma, not all atopic individuals develop asthma, nor do all asthmatics exhibit atopy. (Kelly, H.W. and Sorkness C. A., 2005). Occupational asthma in previously healthy individuals emphasizes the effect of environment on the development of asthma. (Kelly, H.W. and Sorkness C. A., 2005). Viral respiratory tract infections remain the single most significant precipitant of severe asthma in children and are an important trigger in adults as well. Other possible factors include air pollution, sinusitis, food preservatives, and drugs. (Kelly, H.W. and Sorkness C. A., 2005). High proportions of children are reported to have asthma symptoms in Sudan, including 12% of children in Khartoum. (El Sony, A. I., et al. 2013). Asthma has never been a public health priority in Sudan. Lack of peak flow meters for diagnosis, numerous stock outs and inconsistent distribution of essential asthma drugs are frequent; also, the workforce is unprepared to tackle chronic asthma and the long term management of asthma patients. (El Sony, A. I., et al. 2013). A survey conducted in 2003 revealed that 95% of patients paid the full cost for
expensive drugs, <2% of them received regular treatment from a single facility and there was no asthma management plan. (El Sony, A. I., et al. 2013)

**Classification of asthma severity in adults:**

1. Intermittent asthma
2. Mild persistent asthma
3. Moderate persistent asthma

Severe persistent asthma (Harman, J. and Markham, S., 2006)

Drugs used in the management of asthma include beta agonists, antimuscarinic bronchodilators, theophylline, corticosteroids, cromoglicate and nedocromil, and leukotriene receptor antagonists. (Clausen and Bosse, 2009) These drugs to management of chronic asthma and acute severe asthma. (Clausen and Bosse, 2009)

**RESEARCH METHODOLOGY**

Prospective hospital based survey to be conducted on 122 asthmatic patients selected randomly in both genders and adults who visit the respiratory departments in Alnaw Teaching Hospital, during study period, October 2013 - December 2014. Data will be analyzed by SPSS soft ware version 17, with confidence interval 95%; (CP≤ 0.05) using appropriate tests. Data will be gathered from patients' medical records, physicians, clinical pharmacists who care for these patients, sisters, missing information will be collected from patients themselves by using questionnaire to fill all the predetermined study variables which include: patients demographics, causes of asthma, reason for visiting the hospital, control of the disease, severity of the disease, prescribed medications, compliance to regimen, patient education by the pharmacists, counseling and monitoring of patients, the therapeutic outcome of the received treatment and finally the frequency of emergency room visits by patients.

Resul of the asthmatic patients (n = 122), were selected randomly , 32% met the criteria for well-controlled asthma, high proportions 61.5% for not well-controlled asthma, and 6.6% for very poorly controlled asthma. With statistically significant relation between asthma not well control and ages (13-73) years (p = 0.001), insignificant relation between not well-controlled asthma and females gender (p = 0.605), unemployed or unable to work showed insignificant relation with not well-controlled asthma, insignificant relation between illiterate patients and very poorly controlled asthma (p = 0.262), significant relation between asthma control and asthma severity
level ($p = 0.000$), significant relation between the prescribed drugs and asthma severity level ($p = 0.000$) and significant relation between asthma control and the prescribed drugs ($p = 0.058$).

**Fig.1:** Relation between the prescribed drugs versus age

![Graph showing the relation between prescribed drugs and age](image1)

Insignificant relation between the prescribed drugs and age ($p = 0.123$)

**Fig. 2:** Relation between the prescribed drugs versus gender

![Graph showing the relation between prescribed drugs and gender](image2)

Insignificant relation between the prescribed drugs and gender ($p = 0.288$)
Fig. 3: Relation between the prescribed drugs versus educational status

Insignificant relation between the prescribed drugs and educational status  (p=0.703)

Fig. 4: Relation between the prescribed drugs versus occupation

Insignificant relation between the prescribed drugs and occupation  (p=0.164)
Fig. 5: Relation between the prescribed drugs versus asthma severity level

Significant relation between the prescribed drugs and asthma severity level (p=0.000)

Fig. 6: Relation between asthma controls versus age

Statistically significant relation between asthma control and age (p = 0.001)
Statistically insignificant relation between asthma control and gender (p=0.605)

**Fig. 7: Relation between asthma controls versus gender**

Statistically insignificant relation between asthma control and educational status (p=0.262)

**Fig. 8: Relation between asthma controls versus educational status**
Statistically insignificant relation between asthma control and occupation \((p=0.715)\)

**Fig. 9:** Relation between asthma controls versus occupation

Statistically significant relation between asthma control and the prescribed drugs \((p=0.058)\)

**Fig. 10:** Relation between asthma controls versus the prescribed drugs
CONCLUSIONS

In this study, 122 patients selected randomly involved between 13 years to 73 years in Khartoum State hospitals. Rate of Asthma control was (61.5%) patients with asthma were poorly controlled. The level of asthma severity was moderate persistent Asthma. Most of the patients were prescribed combination of medications which were salbutamol inhaler plus Budesonide.formoterol160.Mcg. this research shows statistically significant relation between asthma not well control and ages > 73, insignificant relation between not well-controlled asthma and females gender, unemployed or unable to work showed insignificant relation with not well-controlled asthma, insignificant relation between illiterate patients and very poorly controlled asthma, significant relation between asthma control and asthma severity level, significant relation between the prescribed drugs and asthma severity level and significant relation between asthma control and the prescribed drugs. Finally, patient counseling with clinical pharmacist aided better patient understanding of their illness and the role of medications in its treatment, improving medication adherence, knowledge and attitude regarding the disease.

ACKNOWLEDGMENT

I would like to express my thanks and deep appreciation to Omdurman Islamic University, College of Postgraduates Studies, and Faculty of Pharmacy. I would like also to thanks Alnaw Teaching Hospital for the participation in this study.
REFERENCES


