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Research Article

Prevalence of Asthma in Southern Punjab, Pakistan

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ABSTRACT

Asthma is exaggerated response of immune system which is a leading cause of death in the third world. Main causes of asthma are allergy, smoking, drugs like NSAID (Aspirin) and family history. Objective of study was to check the prevalence of asthma in different age groups and its impact on socioeconomical behaviors of the peoples of southern Punjab, by developing a questionnaire. Incidence of asthmatic attack in the age group of 20 to 60 years was more than in age group of 20 years, furthermore the incidence was found to be more common in females as compare to males. The smokers were at more risk to develop the disease as compared to the nonsmokers.

Keywords: Asthma, Bronchodilaters, Corticosteroide, Wheezing

INTRODUCTION:

Asthma is a basically developmental problem (*Burney and Chinn et al*. 1996) of the immune system but that has not been proven yet. The asthmatic attacks usually develops because of some environmental triggers (*Gustafsson and Sjöberg et al*. 2000) and each person with asthma has a different set of environmental triggers to initiate Asthma(*Burney and Chinn et al*. 1996). Asthma triggers are the substances to which the person is sensitive. Upon exposure to these substances sensitivity develops to change the normal pattern of breathing. Common triggers include; exercise, allergens initiating allergic response (food, dust, pet hairs, feathers, molds etc.) cold air. Industrial chemicals (*Li and Gilliland et al*. 2000) and cigarette smoke (*Chen and Dales et al*. 1999) may also cause Asthma.

A viral infection such as common cold can be a cause of asthma attacks. In some individuals, stress is also a trigger. The onset of asthmatic attack is usually from seconds to minutes or may last over several hours or days. During an attack a person has difficulty in breathing and talking. The sssperson may hear a whistling & wheezing sound in his/her chest when he/she breathes. The person may cough repeatedly. Their neck muscles may tighten up. Their lips and finger nails may turn blue. Their heart rate will be increased and they may break out in a sweat. In extreme or chronic situations in which no medical treatment is given to the person, the person may die. Objectives of study was to check the prevalence of asthma (*Burney and Chinn et al*. 1996) in different age groups, impact of different factors like age, gender, smoking, family history and past steroid therapy on patients and to explore the facts that will provide an orientation for further research on these factors.

MATERIALS AND METHODS

Project/Study design:

Patient family survey:

The study consists of self-administered questionnaire which was asked by the patient with

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asthmatic admission or attacks. The questionnaire focus was to identify the perceived casual factors for asthma hospitalization or occurrence of attacks. The questions were asked in the mother language of the patients during an interview to enhance compliance of questionnaire. The age of the patients (*Halfon and Newacheck 1*993) and the drug regimen used previously were focused keenly. Questionnaire also contained the questions regarding socioeconomic status of the patient, as it effects the asthma(*Halfon and Newacheck* 1993)

Method of data analysis:

The number of patients interviewed in each age group(*Ehrlich and Du Toit et al*. 1996) (*Taylor and Newacheck* 1992) and in accordance of the factor were noted and ;percentage formulae was applied to check out the percent population of specific sex or age group(*Ehrlich and Du Toit et al*. 1996) suffering from asthma for demonstrating the study in a clear and easily understandable way. Theme included the perceived casual factors for asthma attacks and hospitalization of the patients. The cultural and linguistic appropriateness of current asthma care and contributors of psychological stressors such as domestic and community violence as a barrier to affect the asthma management and transportation barrier to patient care.

Subject recruitment:

Recruitment involves sorting of hospital admission at Nishtar Hospital, Multan with the primary diagnosis of asthma. It was taken into consideration(hypothesized) that the patient would also enlighten the social-economic(*Halfon and Newacheck* 1993) and environmental problems such as poor housing conditions, competing needs and lack of transportation as a contributor of the occurrence of attack of asthma and patient's hospitalization. The questionnaire also put great emphasis on known medical standards of care and environmental risk factors related to asthma such as, effect of smoking, compliance of steroids, type of medication taken, home factors contributing to asthma.

Inclusion criteria:

The subject is diagnosed with the asthma depending upon the symptoms of air flow obstruction. Air flow obstruction is least particularly reversible in patients with age >30 years and subjects consuming less than 3 packs per year of cigarette. Inclusion was intended to Collect the data of all the patients between 35 to 85 years of age, visiting hospital for primary and secondary diagnosis of asthma.

Exclusion criteria:

Subject is a known carrier of blood transmitted infectious disease or any other disease such as Diabetes mellitus, Hypertension, Hepatic cirrhosis etc. Exclusion was intended to exclude the patients with chronic liver and kidney disease.

Data Collection:

An interview was conducted and a short questionnaire was completed by all participants. All interviews were conducted by students, typically in the Chest Ward # 22 of Nishtar Hospital, Multan. It was lasted for 20-30 minutes .A data of 180 patients were taken. Questionnaire contained questions related to factors like; age, gender, number of asthmatic attacks, medication, smoking, family history, number of hospital admissions, number of emergency visits etc. Patients were categorized into 4 age groups; 18-28years, 29-48years, 49-68years, and 69-88years living in rural and urban communities in the analysis to observe the affects of economic status (*Halfon and Newacheck* 1993) and environmental conditions (*Li and Gilliland et al*. 2000).

Laboratory Tests:

Most patients who have an asthma exacerbation do not require any initial laboratory studies. If laboratory studies are ordered, they must not be delayed as they are required for initiation of asthma treatment. The most important objective of

laboratory studies is the detection of actual or impending respiratory function. Other objectives include; detection of theophylline toxicity or conditions that complicate or exacerbate the asthmatic attacks (such as cardiovascular diseases, pneumonia, or diabetes). For example: ABG measurement, venous levels of carbon dioxide, complete blood count, spirometery (*Stanojevic and Wade et al*. 2009), measure of serum theophylline concentration, chest radiography , chest X-ray, pulmonary function test, ECG and blood testing in case of allergies *(Li and Gilliland et al. 2000*) (*Gustafson and Sjöberg et al*. 2000)

RESULTS

This study was carried out from April 15, 2014 - May 1, 2014. Data was obtained from 150 outpatients of chest ward Nishtar Hospital, Multan.

Table 1: Demographic presentation of data

AGE GROUPS OF PATIENTS	NO. OF PATIENTS	PERCENTAGE%
18-28	36	24
29-48	54	36
49-68	45	30
69-88	15	10

Table of Results; showing different factors affecting prevalence of ASTHMA

Table under shows the prevalence of asthma attacks in people of different ages, and the impact of other factors like family history, gender(*Prescott and Lange et al*. 1997) and smoking on the prevalence of Asthma attacks in Nishtar Hospital, Multan.

Age	<20 years	20-60 years	>60 years
Smoking	No (46%)	Yes (26%)	PS (28%)
Family history	Yes (26%)	No (74%)	Nil
Use of inhalational steroids	Yes (68%)	No (32%)	Nil

Age	<20 years (4%)	20-60years (82%)	>60 years (14%)
Gender	Male (48%)	Female (52%)	
Duration of asthma	< 5 years (74%)	6-15 years (16%)	>15 years (10%)
No. of hospital admissions	NO (68%)	1 or 2 times (22%)	3-5 time (18%)
Treatment includes	BD (8%)	O.S (16%)	ICS* (10%)
Sleep disturbance	Every night (46%)	>2 nights (24%)	<2 nights (18%)
Duration of uncontrolled asthma	>1 month (64%)	1-6 months (26%)	<6 months (10%)

*ICS = Inhalational corticosteroid, OS =oral steroids, BD = bronchodilator, PS = passive smoking.

DISCUSSION:

This project is based on the effect of concomitant factors on asthma including; age (*Taylor and Newacheck* 1992), gender, smoking, family history, use of inhalational steroids, no. of hospital admissions, duration of uncontrolled asthma, sleep disturbances, duration of asthma etc. The aim of this project is to determine the extent of contribution of these factors on the incidence of asthma in community population. It also describes the changes in the life style of a patient due to Asthma. The objective of this study was to characterize clinical phenotypes of severe asthma after standardized treatment and comparison of the findings with those described in the literature over the course of the disease. This

study evaluates current medication and the dose used, as well as the persistence of aggravating factors(*Prescott and Lange et al*. 1997), reports by other specialists consulted, and complementary test results control criteria. Lack of control was defined as presenting one or more of the following: persistent daily symptoms; daily bronchodilator use; impaired activities of daily living; asthma-related sleep disturbance > once a week, PEF < 70% of basal value; and mild to severe persistent obstruction measured by spirometer (*Stanojevic, Wade et al*. 2009).

CONCLUSION

The incidence of asthmatic attack in the patients with age group of 20 to 60 years is high than in patients with age group of 20 years. The female patients are at greater risk to develop Asthma than the males(*Prescott and Lange et al*. 1997).The smokers (*Thomson and Chaudhuri et al*. 2004) are at high risk of developing the disease as compared to the non-smokers *(Chen and Dales et al. 1999*). The active and passive smokers are at equal risk of developing the disease. Sometimes the passive smokers are more prone to asthma than active smokers. The compliance with the drug therapy including steroids, bronchodilators, anti-asthmatics, decreases the chances of developing the uncontrolled Asthma. Prevalence of Asthma is high in the poor patients or patients with low socioeconomic status (*Halfon N. and Newacheck* PW 1993).

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