

ORIGINAL ARTICLE

RISK FACTORS FOR REPEATED HOSPITALIZATION FOR ADULT ASTHMA PATIENTS

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ABSTRACT

Background: Bronchial asthma is one of the most common chronic illnesses worldwide. Asthma hospitalization is a population marker of disease severity. The aim of this study is to evaluate various factors leading to repeated asthma hospitalization.

Place and duration of study: Medical unit of DHQ Teaching hospital Dera Ismail Khan during 15.2.06 to 15.8.06.

Material and methods: It was cross-sectional study, interviewing seventy adult asthma patients with history of repeated hospitalization. A questionnaire was constructed to collect information about various factors that may potentially be responsible for repeated hospitalization.

Results: This study revealed that patients with repeated asthma hospitalization are more related with illiteracy 62 %, poverty 71 %, non-compliance 65 %, allergic rhinitis 91 %, under use of inhaled steroid 2.8 % and poor technique of inhaler use 76 %.

Conclusion: This study identified the various factors in our set-up that are responsible for repeated asthma hospitalization which should be addressed while managing bronchial asthma cases.

INTRODUCTION

Asthma is now one of the world's most common long-term medical conditions estimated to affect as many as 300 million people worldwide ¹. It is a serious public health problem in countries throughout the world. No epidemiological study has been conducted yet in Pakistan regarding prevalence of asthma in adults but it is estimated that 5-10 % of the adult people in Pakistan are suffering from asthma ².

Asthma-related morbidity and mortality has risen sharply in recent years ^{3,4}. Hospital admissions for asthma have been increasing despite improved knowledge about the disease and availability of better treatment options ⁵. Increased asthma severity is indicated by recent asthma hospitalization which is a potentially avoidable outcome ³. Understanding the risk factors for hospitalization for asthma is important for treating and reducing their effects ^{6,7,8}.

The aim of this study is to evaluate association of various factors with risk of asthma hospitalization in patients belonging to this part of Pakistan.

MATERIAL AND METHODS

This study was conducted in medical unit of District Head Quarter Teaching Hospital Dera Ismail Khan, Pakistan, during 15.2.2006 to 15.8.2006. A total of 70 subjects were recruited among indoor patients of medical unit, with primary diagnosis of bronchial asthma. Patients younger than 14 years were excluded. Study design was cross-sectional and sampling method was purposive. Each subject underwent a structured interview to evaluate various factors with potential association for asthma hospitalization. The respondents were requested to provide their personal, socio-demographic and environmental data.

The following information was recorded;

Age, gender, rural or urban residence, income, marital status, education, occupation, plant allergy, rhinitis, tobacco use, pets at home, emotional stress, family asthma, associated illness. Data also included past asthma status, type of asthma care providers and medications used. A questionnaire was completed for each admission for 70 patients.

The focus of this study was on patients having readmissions. Repeated hospital admission was defined as more than one admission in hospital in the last six months due to asthma.

Descriptive statistical analysis was performed.

RESULTS

Seventy patients were recruited having more than one admission with asthma. 65 % of patients were from rural areas. Male-to-female ratio was 2: 3 and mean age was 30 years.

Ninety four percent were married.

Literacy rate was poor (38%).

Socio economic status of 71 % of patients was classed as poor, earning less than Rupees 5000 monthly. Regarding occupational status, 40 % were laborers, and 31% house wives.

Majority (77 %) had had frequent episodes of acute asthma recently; 40% were admitted at least three times in the hospital due to asthma.

Medical care providers of these patients were mostly general practitioners (40%); while 11% were under specialists and 5.7 % took treatment from paramedics.

Regarding medications, the most common use was that of oral medications mostly bronchodilators (50%), while Inhalers were used by 40% of patients. Forty percent patients reported receiving asthma treatment in more than one form at a time (inhalers, tablets and injections). Majority of inhaler users (76%) were unable to use metered dose inhalers properly. Only 2 % of asthma patients were using inhaled steroids. 65 % were non-compliant in treatment follow-up i.e. did not follow their care providers.

Sixty six percent patients had family history of asthma.

Fifty four percent had concomitant illnesses like diabetes mellitus (25 %), hypertension (37%) and ischemic heart diseases (12.5 %).

Tobacco intake was acknowledged by 42.9 % cases. Among them, 46.7 % were cigarette smokers 33.3 % used snuff, 6.7 % huqqa smokers while 13.3 % used it in more than one form.

The most common association (91%) of asthma admissions was that with allergic rhinitis while 57.1 % claimed that they had symptoms at the onset of winter season.

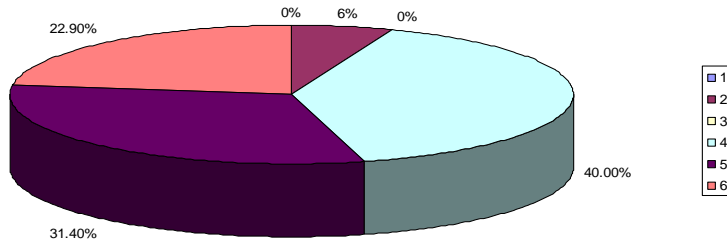
Sixty three percent patients admitted that they had frequent episodes of asthma with emotional stress.

Asthma exacerbation was noted on exposure to plants by 20% of patients. Another 20% complained of symptoms due to contact with animals including hens, pigeons, cows, goats, buffaloes.

	TYPE OF MEDICINE	%
a	Oral Medicine	50
b	Injections	10
c	Inhalers	40

USE OF ASTHMA MEDICATIONS

Types of Asthma Care Provider

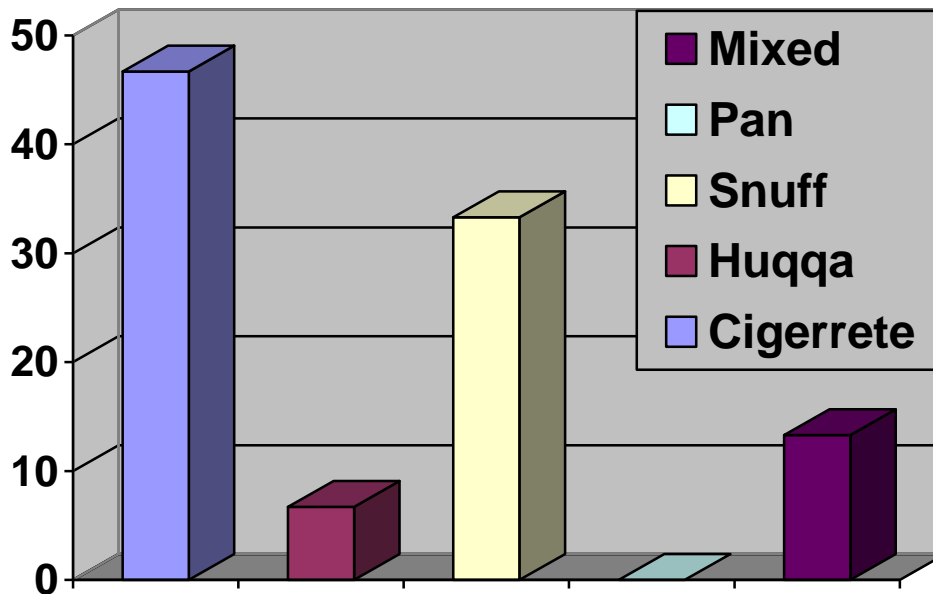


Hakeem

0%

Paramedics	6%
Homeopaths	0%
General practitioners	40.00%
Specialist chest/Med	31.40%
Mixed	22.90%

Types of tobacco intake



DISCUSSION

This multi-variables study explored various interesting and significant factors correlation with asthma severity which itself is reflected by hospital admissions.

Patients' demographic picture revealed that 65 % patients belong to rural area and overall 71 % were poor; both these may be responsible for their poor access to health services by virtue of their geographic location or low purchasing capacity. Illiteracy may be responsible for poor awareness about long term treatment.

Association of asthma in tobacco users is high (42.9 %) which is understandable.

A very high rate of association 91 % was found with allergic rhinitis. Data from epidemiological studies indicates that nasal symptoms are experienced by as many as 78 % of patients with asthma. The association between asthma and rhinitis has primarily been attributed to a common allergic background. Upper and lower airways are similar in many ways, including common triggers, pathogenic mechanisms and response to the treatment⁹⁻¹¹. Presence of concomitant illnesses like hypertension (37 %) and cardiac diseases (12.5 %) may make management issues in this resource poor cohort more difficult.

A very significant observation was that only 2 % of asthma patients were using inhaled steroids, which on one hand indicates lack of knowledge by care providers which are mostly doctors and on the other may explain the repeated hospitalizations of such patients due to poor asthma control. To compound the issue, majority of inhaler users (76 %) were unable to use it properly, a common observation in this part of the world, which obviously leads to wastage of drug as well as poor asthma control¹².

CONCLUSION

In this cohort of patients belonging to Northern Pakistan, significant factors for repeated hospitalization for asthma appear to be illiteracy, poverty, allergic rhinitis, non-compliance, under use of inhaled steroids and poor technique of inhaler use.

As the sample size is small, we can not generalize these results, and a larger comparative study between those with good and poor control may obviate these factors better.

However it is expected that this and similar studies should help in management of asthma patients by identifying precipitating factors which may lead to more appropriate intervention and reduce the need for readmissions.

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