

CLINICAL SIGN AND SYMPTOMS AND CONSEQUENCES RELATED WITH BRONCHIAL ASTHMA AMONG COVID-19 HOSPITALIZED PATIENTS

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ABSTRACT:

Introduction: Although chronic respiratory diseases are considered a high-risk category among co morbidities in developing severe COVID-19 infection, the prevalence of asthma among patients with COVID-19 is controversial at the moment. The reported asthma prevalence among patients hospitalized with COVID-19 portrays conflicting data with regional as well as national differences.

Materials and Methods: This was a prospective, observational, questionnaire and hospital based study in a tertiary care teaching hospital at two different centers for a period of 1 months. The data was collected by face to face interview of outpatient's and inpatients of PBM Hospital by administering the questionnaires for the assessment of knowledge, attitude and adherence towards the bronchial asthma disease.

RESULTS: precipitating factors, 46% parents attributed the disease exacerbations due to multiple causes. The compliance rate in using inhalers for asthma was low (60%) and many patients stopped medications in spite of proper advice regarding inhalational therapy.

CONCLUSION: This study concludes that the assessment of knowledge and attitude towards the disease of bronchial asthma patients is low. Controller medications and aerosol therapy is underused and unnecessarily blamed. Awareness raising strategies are needed in community. Patient education program should augment awareness about disease, eliminate social stigma, and misconnects in the community regarding bronchial asthma.

Keywords: Clinical sing and symptoms; consequences; Bronchial Asthma; COVID-19

INTRODUCTION: Asthma is a long-term condition affecting children and adults. The air passages in the lungs become narrow due to inflammation and tightening of the muscles around the small airways. This causes asthma symptoms such as cough, wheeze, and shortness of breath and chest tightness. These symptoms are intermittent and are often worse at night or during exercise. Other common triggers can make asthma symptoms worse. Triggers vary from person to person, but can include viral infections (colds), dust, smoke, fumes, changes in the weather, grass and tree pollen, animal fur and feathers, strong soaps and perfume. The overall burden of asthma in India is estimated at more than 15 million patients. International efforts to reduce asthma morbidity and mortality have focused that on improving patient education and self-management behavior.

Prime reasons identified for poor prognosis are inadequate education to patients, poor adherence to the medications. Even the patients who are admitted repeatedly due to exacerbations due to asthma have a poor knowledge of asthma.

Illness that is not serious enough for daily treatment; it's only asthma. But it's both under-recognized and undertreated. Disease management of asthma includes knowledge of the disease, its treatment, and the effective use of different therapies; health care providers play a crucial role in empowering patients with the necessary skills and knowledge to manage asthma. Patient education is becoming an essential area of service provision, with our increasing population of people with chronic disease and conditions requiring long term management in the community

OBJECTIVES:

1. To assess the knowledge on bronchial asthma disease among the bronchial asthma patients.
2. To assess the patients attitude towards their disease and treatments options available for bronchial asthma.

Bronchial asthma attending in hospitals at Bikaner. It was a prospective cross-sectional study conducted in outpatient department August 2022. Sample size taken was 160 according to formula $n = z^2 \frac{1-\alpha}{2P(1-P)} / d^2$.

Sample Size: The sample consisted of 160 patients.

METHODOLOGY: The prospective study, patients of bronchial asthma attending out and in-patient Bronchial asthma attending in hospitals at Bikaner Children below the age of 18 years with diagnosis of bronchial asthma were excluded from the study. Cases having other significant bronchopulmonary diseases associated with asthma, for example, tuberculosis, bronchiectasis, viral infections, bronchiolitis, and patients not willing to participate in the study were excluded from the study.

Diagnosis of asthma in selected was based upon GINA Guidelines: Wheezing, high pitched whistling sound when breathing out with history of any of the following: Course worse particularly at night, recurrent wheeze, recurrent difficult breathing, recurrent chest tightness, family history of any allergy or bronchial asthma. The patients were evaluated for confirmation of diagnosis of bronchial asthma with the help of history, examination, and spirometry before and after bronchodilators inhalation.

An easily comprehensible questionnaire was designed; most questions were closed, with yes or no answers, although one was open ended. The questionnaire was designed to obtain information regarding the parent's perception of etiology, triggers, and asthma symptoms and effectiveness of treatment of asthma with focus on aerosol therapy, which included metered dose inhalers (MDI), dry powder inhalers (DPI), and nebulizer therapy. The patients were asked to identify and describe possible causes of asthma with no limit being placed on the number of responses. No attempt was made to correct a wrong answer or response until the completion of the interview.

The open ended question dealt with the parent's personal perception of the best possible management for asthma. The questions were designed to elicit a short answer or response to a multiple choice format. The questions dealt

with the nature of illness, natural history, etiology, treatment, and prognosis. The patients were asked to identify and describe possible causes of asthma with no limit being placed on the number of responses. No attempt was made to correct a wrong answer or response until the completion of the interview.

From the detailed questionnaire, the following measure-ements were made for the study:

i) Asthma knowledge: For assessing asthma knowledge of the parents, the following questions were asked in detail: knowledge regarding asthma in their child; familiarity with the symptoms and characteristics of the disease; sport and asthma relationship, on impact of asthma in school; absenteeism from school due to asthma and treatment options available. We have tried to analyze various treatment modalities of treatment of asthma, allopath, homeopathy or ayurvedic. Also focus was given to the various types of aerosol therapy, and the parent's perceptions regarding this aerosol therapy. Response options were presented as true/false and unsure.

ii) Asthma attitudes: Asthma attitude was assessed by using Gibson et al. questionnaire (15 questions) that consists of four domains. The domains assessed were tolerance towards asthmatics (Eight questions), locus of internal control based on the concept of the degree to which a person believes that their own decisions and actions influence their asthma (Two questions), locus of external control or "powerful others" based on the influence of important external people such as a doctor or teacher in their asthma management (Three questions) and chance (Two questions). Responses were presented as six point scale for parents, ranging from "strongly agree" (Scored as 1), to "strongly disagree" (Maximum score). An average score was allocated to each domain. Higher scores represent stronger attitudes in the domains assessed. The Institutional Ethics and Review Board approved the study.

STATISTICAL DATA ANALYSIS: Statistical analysis was performed using SPSS Software version 10. Descriptive statistics were calculated. Mean, median, mode, standard deviation and range were calculated for qualitative variables as mentioned above. Frequencies and percentages were calculated for qualitative variables as mentioned above. Comparison of variables was done using chi-square test. P value <0.05 was considered as significant.

RESULTS: DEMOGRAPHIC CHARACTERISTICS: The mean age of patients in our study was 51.5 years with slight male preponderance (54.4%). The mean duration of illness was 7.5 years. The ratio of urban to rural population was 1.19:1.

KNOWLEDGE ABOUT ETIOLOGY AND THE DISEASE: Out of 160 patients, more than half of the patients did not know that they are suffering from bronchial asthma disease and they had come to know of the diagnosis only at our centre. All these patients were being treated as repeated infections of the respiratory tract with antibiotics. Another half of the patients were labeled as asthma earlier but were not under control, and were having repeated symptoms. About 40.7% of patients believed it to be some kind of allergy or associated with some allergic cause.

Regarding precipitating factors, 46% of patients could not relate to any cause or factors triggering their disease. Out of remaining 74 patients who were aware of their triggers, 25% of patients used to avoid them. Some patients had some knowledge about triggering factors in the food items. About 81% of the patients consider respiratory

tract infections as precipitating factor for asthma, while 12% did not know whether infections can precipitate asthma or not. Another 31.3% patients told that the respiratory symptoms get exacerbated during the seasonal change, especially during winter climate. Dust was recognized as precipitating factor by 70% and smoke by 63% of the patients. About 37.3% observed that cold drinks aggravated their symptoms, while 46% identified multiple items to be the triggering event. Only 20% patients could recognize house mites as precipitating factor while 28% think that pollens can precipitate asthma.

ASSESSMENT OF KNOWLEDGE AND ATTITUDE: There are lots of misconceptions about asthma in society. The analysis of knowledge results was assessed by the percentage of patients answering each item. A total of 52.5% of asthma patients said that there are no disadvantages for asthma patients for being in close contact with cats or dogs; 58.1% some of the medicines used for asthma may have to be used even when I am not having symptoms of asthma; 44.4% opined that medicines used for asthma attacks constrict air pipes; and 82.5% said that medicines used for asthma helps in reducing inflammation of air pipes.

The analysis of attitude results was assessed by the percentage of patients answering each item. Regarding the fate of disease, majority of patients (41%) were under the wrong belief that asthma is fatal in outcome, while 36.4% patients believed that their disease is absolutely curable. Only 22.6% patients believed that their disease is preventable and can be controlled. Nearly half of the patients had sought the help of alternative system of medicine for the control of the disease, with nearly one-third opting for homeopathic treatment before coming to our department.

On an average, each patient had already visited 3 doctors prior to coming to our institution. Oral medications in the form of tablets, capsule, and syrups remained the preferred mode of drug administration in 79% patients.

This was followed by inhalational route in only 21% patients. Among inhaled therapy, 56% patients preferred dry powder inhalers and 44% patients preferred metered dose inhalers. Out of 160 patients, 63 patients were using inhalers at the time of study. Reasons for reluctance to inhaled therapy were different: some were not advised by the doctor, some find it difficult to use, and 10% think that inhaled therapy is harmful or addictive. Even among 21% of patients who were using inhalation therapy, the compliance rate was very low. Table 4 gives all the reasons for discontinuing the inhalation therapy. The most common among these were: attitude towards ill health, stigmatization, and dislike for medications.

DISCUSSION: There is a global problem with asthma management, either under treatment due to ignorance or distorted information/knowledge of patients about their disease. By 2025, an additional 100 million people will suffer from asthma due, in part, to growing urbanization and pollution. It is estimated that asthma accounts for about one in every 250 deaths worldwide. The present study showed that the patients with asthma still lack adequate knowledge about the disease and have many misconceptions regarding the illness and its treatment, which needs to be rectified.

The success of any medical regimen prescribed for a particular patient often depends, in large part, on three factors: (a) the patient's knowledge regarding the illness, which enables him/her to take appropriate action to control particular symptoms. (b) The patient's attitude toward the illness, including his or her willingness to work

with the physician to manage the disorder and (c) The patient's confidence in his or her ability to contribute to the management of the illness. Many of the patients refuse to accept the diagnosis of asthma and have poor knowledge about the inhalational form of therapy. They have got many misconceptions regarding the use of inhalers and its usage in everyday practice. Asthma is still a neglected entity unlike other chronic diseases like diabetes mellitus and hypertension. The findings of the present study is similar to that obtained in a recent study done in Lucknow, where it was again observed that the level of awareness regarding asthma was very low among asthmatic patients. There is a global problem with asthma management, either under treatment due to ignorance or distorted information/knowledge of patients about their disease. Asthma is on rise globally and average asthmatic patient is generally ignorant about his ailment and has misconceptions, which needs to be rectified.

Most of our patients, that is, 80 (50%) were from urban population, but still were ignorant about their disease. Studies have shown that asthma is more prevalent in urban areas than in less polluted areas. A large numbers of patients (68%) were unaware about the cause of disease, and were also having various wrong beliefs associated with asthma. Other studies by different authors have reported similar findings.¹⁸⁻²⁰ The physicians in our hospital disseminated the knowledge of asthma to the patients, and reemphasized that they are suffering from bronchial asthma. This reinforces the need for the role that can be played by media, non-governmental organizations and health workers in health education regarding asthma. Asthma is still considered like a stigma by the families and proper treatments is not taken unlike other chronic diseases like diabetes mellitus or hypertension. As in the present study many considers it just an allergy (40.7%), and early treatment is not instituted. This leads to progression of the inflammation in the airways leading to progression of the disease.

Due to the poor knowledge about the asthma disease, the patients have lot of anxieties. Anxieties about their disease or treatments leave some asthmatics in an unending cycle of poor disease management, fear, symptoms, and resorting to alternative system of medicine in the hope of getting "cured" of asthma. In our study, we found out that the patients knowledge regarding the disease was found to be poor, so it is very essential to educate the patients regarding the disease. It is due to misconceptions about asthma drugs usage, 47.5% of patients don't know about the affect of living together with animals will increase severity of asthma, similar type of results found out were reported in the other studies. Another study has reported that nearly about 64% of the patients were ignorant about the etiology of the asthma disease, and 30% of the patients were reluctant to accept the diagnosis of asthma.

The patients have many misconceptions regarding the diseases and triggers for the asthma. A 44.4% of asthma patients believed that medicines are going to constrict the bronchi as that it shows how medication will help in managing asthma there is on lack of knowledge regarding the mechanism of action of medicine; 17.5% of asthma patients were not aware that medication reduces the inflammation. Asthma patients of 45.5% reported that they stop taking their medication consumption when they feel well or not having symptoms of asthma. But, it is very necessary to educate the patients with asthma to take the medicines regularly as it requires long term treatment. Educational methods tailored to needs of each patient and effective behavior towards disease and its management is very essential. In one of our study it was shown that with various tools of education, the compliance in medications could be increased by almost another 40%.

Attitudes toward asthmatics denoted tolerance, in the sense of a positive and understanding attitude to a person with asthma. The patient has an uncooperative attitude towards treatment problem may arise. The strongest

predictors disagree of worry to take their medication for long time, embarrassing in taking their medication in public places. Asthma affects the pleasures of life, others come to know that I have asthma, confident that if I take my medications for asthma regularly, I could live normal life and finally all the medications that I am taking for treating my asthma are essential. Similar types of results were found in the other studies.^{16, 26} Studies have shown that improved knowledge alone does not improve control of asthma. When combined with behavioral therapy the outcome improves. Patients who dislike taking medication will be more at risk of severe episodes and may be less likely provides their doctors with information important for their management. It clearly shows that a better understanding of attitudes towards asthma medication should be helpful in encouraging good patient adherence to treatment. It was found that the attitudes of peers towards asthma patients

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