https://doi.org/10.3329/cbmj.v14i1.79348

Patterns of Prescribed Drugs and Knowledge of Use of Drug Delivery Devices among Adult Bronchial Asthma Patients in a Tertiary Hospital in Bangladesh

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Abstract

The prevalence of asthma has grown steadily over the decades in developing countries like Bangladesh. A cross-sectional, observational study was carried out in the Department of Pharmacology & Therapeutics in collaboration with the Department of Respiratory Medicine and Internal Medicine of Mymensingh Medical College Hospital, Mymensingh, Bangladesh, from July 2017 to June 2018, to explore drug prescription pattern and knowledge of use of drug delivery devices among bronchial asthma patients. A total of 160 adult patients (≥18 years) were selected non-randomly for this study. A total of 225 metered dose inhaler (MDI) were prescribed, which constituted the most common mode of administration of drugs to the asthmatic patients (48.07%), followed by oral tablet 223(47.66%) and accuhaler inhaler 20(4.27%). Out of 160 patients, 139 patients were treated with inhalation therapy. Among 139 patients, 46(33.09%) patients received an MDI with spacer; all of them knew how to use the device properly. 73(52.52%) patients received only MDI; among them, only 30(41%) patients could use the device properly. 20(14.39%) patients received accuhaler and all of them could use the device properly.

CBMJ 2025 January: Vol. 14 No. 01 P: 115-117

Keywords: Bronchial Asthma, MDI, Spacer

Introduction

Bronchial asthma is one of the respiratory diseases that is associated with bronchial hyper-reactivity and airflow constriction giving rise to difficulty in breathing and hypoxia. In practical examination, different types of asthma are seen like allergic or asthmatic bronchitis, wheezy bronchitis, and extrinsic and intrinsic asthma.[1] In the past year the rate of asthma patients was less but at present, it has risen due to urbanization.[2,3] Allergens, passive smoking, polluted air, and urbanization are predisposing causes of bronchial asthma.[2] Inhaled corticosteroids as a single therapy or in combination with bronchodilators and other therapies are the most set up regimen for persistent asthma.[1,2] The etiology of bronchial asthma is mainly environmental or genetic, and diagnosis of it by clinical features or sign and symptoms and sometimes needs pulmonary function test.[1,2] The depth of awareness among patients is increased by patient education on useful drugs, adverse effects and evolution of drug dispensing patterns.[4-6] Knowledge about disease, medication and use of drug dispensing devices are very important for the bronchial asthma patients. Hence, we proposed this study to explore patterns of prescribed drugs and

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knowledge of use of drug delivery devices among bronchial asthma patients.

Methods

This cross-sectional, observational study was carried out over one year in the Department of Pharmacology & Therapeutics in collaboration with the Department of Respiratory Medicine and Internal Medicine of Mymensingh Medical College Hospital, Mymensingh, Bangladesh, from July 2017 to June 2018. A total of 160 adult patients (≥18 years) attending outpatient departments (OPD) of Mymensingh Medical College Hospital were selected non-randomly for this study. Data was collected from them and their prescriptions. Data was also collected from the patient by a semi-structured questionnaire. Patient record from is utilized to identify the numbers and types of drugs used, patients' knowledge on mode of drug administration and use of drug delivery devices.

Collected data were checked and edited first and processed with the help of Software Statistical Package for Social Sciences (SPSS) version 21.0 for Windows and analyzed. Statistical analyses were done by using appropriate statistical tools. Categorical data were presented as frequency and percentages in tabulated form. Ethical Clearance was obtained from the Ethical Review Committee of Mymensingh Medical College, Mymensingh, Bangladesh.

Results

A total of 225 metered dose inhaler (MDI) were prescribed, which constituted the most common mode of administration of drugs to the asthmatic patients (48.07%), followed by oral tablet 223 (47.66%) and accuhaler inhaler 20 (4.27%) (Table-I). Out of 160 patients, 139 patients were treated with inhalation therapy (73.16%). Among 139 patients, 46(33.09%) patients received a spacer with MDI. All of them know how to use the device properly. 73(52.52%) patients received only MDI; among them, only 30(41%) patients can use the device properly. 20(14.09%) patients received accuhaler and all of them could use the device properly (Table-II).

Table-I: Dosage forms of asthmatic medications in patients

Dosage Form	Frequency	Percentage
Metered dose inhaler (MDI)	225	48.07
Oral tablet	223	47.66
Accuhaler inhaler	20	4.27
Total	468	100

Table-II: Knowledge regarding uses of drug delivery devices among patients

Mode of inhalation therapy	Number of patients	Know how to use properly	Do not know how to use properly	Percentage of proper use
MDI with spacer	46	46	0	100
MDI without spacer	73	30	43	41
Accuhaler inhaler	20	20	0	100
Total	139	96	43	69

Discussion

In the present study, we tried to explore patterns of prescribed drugs and knowledge of use of drug delivery devices among bronchial asthma patients. In this study, the majority of patients were treated with an inhalation route in comparison to an oral route. In inhalation therapy,

there are fewer adverse effects and rapid onset of action. In this study, among dosage forms of asthmatic medications, through MDI was 48.07%, followed by oral tablet (47.66%) and accuhaler inhaler (4.27%). Similar observations were reported in studies done in Saudia Arabia, India, Nepal and Bangladesh.[3-9]

Out of 160 patients, 139 patients were treated with inhalation therapy. Among 139 patients, 46(33.09%) patients received an MDI with spacer and those 46 patients could use the device properly. 73(52.52%) patients received only MDI; among them, 30(41%) patients knew how to use the device properly. 20(14.39%) patients received accuhaler inhaler and those 20 patients could use the device properly. Similar observations were reported by the studies done in Saudi Arabia, India and Nepal.[3,4,6,8]

Conclusion

Chronic bronchial asthma is one of the most frequent cases in the outpatient departments (OPD) of Mymensingh Medical College Hospital, Dhaka, Bangladesh. Inhalation therapy is the most common among prescribed medications, especially in the dosage form of metered dose inhaler (MDI). MDI used with a spacer is becoming popular and widely accepted by the patients.

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