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Assessing Physician Satisfaction and Therapeutic Efficacy of Montelukast (M-lucas): Insights from a Nationwide Survey of Specialist Doctors in Bangladesh

H A M Nazmul Ahasan[1], Mohammod Shafiqul Islam[2], Md. Muksidul Haque[3], Zayer Rashid[4], Mohaiminur Rahman[5]

Abstract

Background: Montelukast is widely prescribed for mild-to-moderate asthma due to its safety and efficacy when administered orally. Despite healthcare challenges, its effectiveness in reducing asthma exacerbations and improving patients' quality of life is well-documented. Physicians highly regard Montelukast for its therapeutic benefits and ease of use, which enhance patient adherence and management outcomes.

Aim of the study: This study aims to assess physician satisfaction and perceptions regarding the therapeutic efficacy of Montelukast (M-lucas) through a nationwide survey of specialist doctors in Bangladesh.

Methods: This cross-sectional survey assessed physician satisfaction and therapeutic efficacy of Montelukast (M-lucas) among 594 specialist doctors in Bangladesh. Selected through stratified random sampling. A structured questionnaire covered prescription practices, therapeutic efficacy, satisfaction, and comparative analysis with other medications. Analysis using SPSS included descriptive statistics and summarized findings in tables.

Result: In this study, 594 physicians participated. The primary condition treated was cough variant asthma (79.63%). Regarding patient's improvements in symptoms, most physicians observed benefits in decreasing breathing difficulties, chronic cough, wheezing, and night awakenings (97.47%, n=579), as well as improving sleep quality and reducing nighttime asthma (96.46%, n=573). Additionally, Montelukast was reported to lower the risk of myocardial infarction (MI) and stroke (91.41%, n=543) and help prevent cardiovascular problems (86.03%, n=511) The majority of physicians expressed a high level of satisfaction, with 69.0% reporting being "highly satisfied" and 29.5% "satisfied." Only a small fraction (1.5%) rated their satisfaction as "average".

Conclusion: The study highlights Montelukast's (M-lucas) widespread use in Bangladesh for chronic respiratory conditions. Physicians favor it for its efficacy and safety, and patients are highly satisfied. Montelukast(M-lucas) is a crucial option for managing asthma and respiratory conditions in Bangladesh.

Keywords: Physician satisfaction; Therapeutic Efficacy; Montelukast (M-lucas)

Introduction

Montelukast, a selective leukotriene receptor antagonist, has become a

Affiliation:

[1]MBBS, FCPS, FRCP (Glasgow), FRCP(Edin), FRCP (London), MACP, Bangladesh

[2]M. Pharm & M.S.S, Dhaka University, Nilkhet Rd, Dhaka, Bangladesh

[3]M. Pharm, Dhaka University, Nilkhet Rd, Dhaka, Bangladesh

[4]MBBS, Rajshahi University, Administration Building 1, Rajshahi, Bangladesh

[5]MBBS, Dhaka University, Nilkhet Rd, Dhaka, Bangladesh

[6]M. Pharm, State University of Bangladesh, Kanchan Bridge, Purbacahal, Bangladesh

[7]M. Pharm, East West University, A, 2 Jahurul Islam Ave, Dhaka, Bangladesh

[8]M. Pharm, University of Development Alternative , Dhanmondi R/A, Bangladesh

***Corresponding author:**

SK. Omar Faruque[6]
Radowan Ahmad AKM[7]
Md. Anamul Haque[8]

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cornerstone in the management of asthma and allergic rhinitis [1]. By specifically targeting and inhibiting the cysteinyl leukotriene receptor (CysLT1), Montelukast effectively reduces airway inflammation, bronchoconstriction, and excessive mucus production, which are key contributors to respiratory symptoms such as wheezing, shortness of breath, and nasal congestion [2]. Its oral administration, favorable safety profile, and proven efficacy in managing mild-to-moderate persistent asthma make it a popular and widely prescribed choice among both physicians and patients [3]. Furthermore, it is often recommended as an adjunct to inhaled corticosteroids and beta-agonists, thereby offering a more comprehensive and multi-faceted approach to respiratory disease management [4]. In Bangladesh, respiratory diseases represent a significant and growing public health burden. Asthma, in particular, affects approximately 10.7% of the population, and prevalence rates have been steadily increasing due to factors such as rapid urbanization, rising environmental pollution levels, and increased exposure to various allergens [5,6]. These elements have collectively contributed to a higher incidence of respiratory conditions, placing considerable strain on the country's healthcare system and infrastructure [7]. Managing asthma in Bangladesh presents unique challenges, including limited access to advanced treatments, economic constraints, and disparities in healthcare delivery between urban centers and rural areas [8]. In this challenging context, Montelukast has emerged as a vital therapeutic option, providing a cost-effective, well-tolerated, and convenient treatment choice for asthma and allergic rhinitis patients. Globally, the efficacy and safety of Montelukast have been well-documented in numerous studies and clinical trials [9]. These investigations have consistently demonstrated its effectiveness in reducing the frequency of asthma exacerbations, improving overall pulmonary function, and enhancing the quality of life for patients suffering from chronic respiratory conditions [10]. In various healthcare settings, physician satisfaction with Montelukast remains consistently high, reflecting widespread confidence in its therapeutic benefits, minimal side effects, and excellent tolerability [11]. Additionally, the medication's once-daily oral dosing regimen significantly improves patient adherence, a crucial factor in the long-term management of chronic respiratory diseases [12]. In countries with socioeconomic conditions comparable to Bangladesh, Montelukast is highly valued not only for its clinical efficacy but also for its affordability and ease of use [13]. Specialist doctors, who are at the forefront of managing asthma and allergic rhinitis, play a pivotal role in assessing the medication's efficacy and overall impact on patient care. Their professional insights are indispensable for evaluating the practical benefits and identifying potential challenges associated with Montelukast (M-lucas) use in Bangladesh [14]. Given the unique demographic and healthcare challenges in Bangladesh, understanding how Montelukast (M-lucas) performs in real-world settings is essential. This study aims to assess physician satisfaction and perceptions regarding the therapeutic efficacy of Montelukast (M-lucas) through a nationwide survey of specialist doctors in Bangladesh.

Methodology and Materials

This study utilized a cross-sectional survey design to assess physician satisfaction and therapeutic efficacy of Montelukast (M-lucas) among specialist doctors in Bangladesh. The survey was conducted nationwide and targeted physicians across various specialities, including pulmonologists, allergists, and general practitioners. The study population consisted of 594 specialist doctors practising in different regions of Bangladesh. Participants were selected using a stratified random sampling method to ensure the representation.

Inclusion criteria

- Board-certified specialists in pulmonary medicine, immunology, or general practice
- Experience in managing patients with asthma or allergic rhinitis
- Willingness to provide feedback regarding their satisfaction with M-lucas

Exclusion criteria

- Physicians who had limited exposure to M-lucas or had participated in the product's development

Data collection instrument

A structured questionnaire was developed to gather data on the following key areas:

- **Prescription practices:** Frequency of prescribing Montelukast (M-lucas), conditions for which it is prescribed, and factors influencing the prescription.
- **Therapeutic efficacy:** Physician ratings of the efficacy of Montelukast (M-lucas) and observed improvements in patient symptoms.
- **Satisfaction and experience:** Overall satisfaction with Montelukast (M-lucas) and patient satisfaction as perceived by physicians.
- **Comparative analysis:** Comparison of Montelukast (M-lucas) with other similar medications, including perceived advantages and disadvantages.

Data collection

Data was collected through an online survey platform to ensure ease of access for participants across different locations. The survey link was distributed via email and professional medical associations' networks. Participants were provided with information about the study's purpose and confidentiality assurances before they consented to participate.

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Data analysis

The collected data was entered into a secure database and analyzed using SPSS (Version-26.0). Descriptive statistics, including frequencies and percentages, were calculated for categorical variables. Mean and standard deviation were computed for continuous variables where applicable. The results were presented in tables to provide a clear and concise summary of the findings.

Ethical considerations

The study was conducted following ethical guidelines for research involving human subjects. Ethical approval was obtained from the appropriate institutional review board. Informed consent was obtained from all participants, and confidentiality was maintained throughout the study. Participants were assured that their responses would be anonymized and used solely for research purposes.

Result

The demographic breakdown of physicians revealed that General Practitioners (GPs) formed the largest group, accounting for 326(54.88%) of the respondents. This was followed by Postgraduate/Resident doctors at 98(16.5%), and Senior Consultants/Consultants at 48(8.08%). Professors constituted 47(7.91%) of the surveyed group, while Assistant Professors and Associate Professors made up 43(7.24%) and 32(5.39%) of the sample, respectively (Table 1). Table 1 shows that Montelukast was most commonly prescribed for Cough Variant Asthma (79.63%, n=473), after Respiratory Syncytial Virus-induced Bronchiolitis (28.62%, n=170). Other conditions included Cough with Wheezing during Pregnancy (27.44%, n=163), Exercise-induced Bronchospasm (20.54%, n=122), and unspecified conditions (4.88%, n=29). Regarding patient's improvements in symptoms, most physicians observed benefits in decreasing breathing difficulties, chronic cough, wheezing, and night awakenings (97.47%, n=579), as well as improving sleep quality and reducing nighttime asthma (96.46%, n=573). Additionally, Montelukast was reported to lower the risk of myocardial infarction (MI) and stroke (91.41%, n=543) and help prevent cardiovascular problems (86.03%, n=511) (Table 2). The majority of physicians expressed a high level of satisfaction, with 69.0% reporting being "highly satisfied" and 29.5% "satisfied." Only a small fraction (1.5%) rated their satisfaction as "average" (Table 3).

Table 1: Conditions for prescribing Montelukast (M-lucas).

Conditions	Frequency (n)	Percentage (%)
Cough variant asthma	473	79.63
Respiratory syncytial virus-induced bronchiolitis	170	28.62
Cough with wheezing during pregnancy	163	27.44
Exercise-induced bronchospasm	122	20.54
Others	29	4.88

Table 2: Patient's improvements in symptoms.

Statements	Frequency (n)	Percentage (%)
Improving sleep quality & reducing night-time asthma	573	96.46
Preventing cardiovascular problem	511	86.03
Lower the risk of MI & Stroke	543	91.41
Decreasing breathing difficulty, chronic cough, wheezing and night awakening	579	97.47

Table 3: Physician's satisfaction with Montelukast (M-lucas).

Variables	Frequency (n)	Percentage (%)
Highly Satisfied	410	69
Satisfied	175	29.5
Average	9	1.5

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Discussion

Montelukast, marketed as M-lucas by Popular Pharmaceuticals PLC, is a widely prescribed medication for managing asthma and other respiratory conditions [15]. As a leukotriene receptor antagonist, it plays a crucial role in preventing airway inflammation, thus facilitating easier breathing and reducing the frequency of asthma attacks. Montelukast is particularly beneficial for patients experiencing exercise-induced bronchoconstriction and those suffering from allergic rhinitis [16]. As part of this nationwide survey, we assessed the therapeutic efficacy and physician satisfaction with Montelukast, focusing on its prescription patterns, usage, and overall clinical impact. In our study, the majority of physicians who participated were general practitioners (GPs), accounting for 54.88% of the respondents. This is consistent with the healthcare system in Bangladesh, where GPs often serve as the first point of contact for patients, particularly in rural and underserved areas. As GPs are typically the primary prescribers of medications in these settings, their responses reflect the general prescribing trends across the country. The results showed that Montelukast is primarily prescribed for cough variant asthma (79.63%), which is consistent with global guidelines that recommend leukotriene receptor antagonists for patients with asthma, especially those with a predominant cough phenotype [17]. Other conditions for which Montelukast is prescribed include respiratory syncytial virus-induced bronchiolitis (28.62%) and cough with wheezing during pregnancy (27.44%). These findings are consistent with studies that support the use of Montelukast in managing acute respiratory conditions in addition to asthma [18]. The results of our study underscore several key areas where Montelukast (M-lucas) has demonstrated significant efficacy. An overwhelming 96.46% of respondents observed improvements in sleep quality and a reduction in night-time asthma symptoms, highlighting the drug's effectiveness in alleviating nocturnal disruptions. Additionally, 86.03% of physicians noted that Montelukast contributes to preventing cardiovascular complications associated with asthma. 91.41% of respondents exhibited, the medication reduces the risk of myocardial infarction and stroke, addressing critical health concerns. Furthermore, 97.47% experienced substantial relief from breathing difficulties, chronic cough, wheezing, and night awakenings, emphasizing the comprehensive benefits of Montelukast in managing asthma-related symptoms. These findings are consistent with previous studies that have established Montelukast's role as an effective leukotriene receptor antagonist in managing asthma and allergic rhinitis. Zuberi et al found that Montelukast significantly improved quality of life (QoL) for patients suffering from asthma and allergic rhinitis, demonstrating strong improvements in both daytime and nighttime symptoms [19]. A systematic review indicated that while Montelukast is more effective than placebo, inhaled corticosteroids (ICS) remain superior for controlling asthma symptoms, particularly at night [20]. A study comparing Montelukast combined with levocetirizine versus fexofenadine found both combinations were effective, but the cost-effectiveness of the levocetirizine combination was noted as beneficial [21]. This suggests that while Montelukast is beneficial, it may be more effective as part of a combination therapy rather than as a standalone treatment. Furthermore, a high level of physician satisfaction was reported, with 69.0% of respondents indicating that they were highly satisfied with Montelukast. This high satisfaction rate aligns with the therapeutic benefits observed in clinical trials, where Montelukast has been shown to significantly reduce asthma exacerbations and improve quality of life [22,23]. Physician satisfaction is a key factor in the continued use of medication and is often linked to patient satisfaction and clinical outcomes [24].

Conclusion and Recommendations

The present study provides valuable insights into the use of Montelukast (M-lucas) in clinical practice in Bangladesh. The results demonstrate that Montelukast (M-lucas) is widely prescribed, particularly for chronic conditions like cough variant asthma, and is highly regarded by physicians for its efficacy and safety profile. Given its proven efficacy in improving symptoms, Montelukast (M-lucas) remains a critical therapeutic option for managing asthma and other respiratory conditions in Bangladesh.

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Ethical approval: The study was approved by the Institutional Ethics Committee.

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