Adherence to the Global Initiative for Asthma Recommendations: A Narrative Review

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Abstracts: Asthma, a chronic inflammatory disorder of the airways, affects millions of individuals worldwide. The Global Initiative for Asthma (GINA) provides evidence-based recommendations for diagnosing and managing asthma. This narrative review aims to explore the significance of adhering to the GINA recommendations for improving asthma outcomes. We delve into the key components of GINA guidelines, their impact on clinical practice, challenges in adherence, and potential strategies to enhance guideline implementation.

Keywords: Adherence, Asthma, Clinical Practice, GINA, Guideline.

1. INTRODUCTION

Asthma is a complex and heterogeneous respiratory condition characterized by airway inflammation, bronchoconstriction, and variable airflow limitation (1). Asthma and chronic obstructive pulmonary disease (COPD) have characteristic clinical features, yet patients with both are prevalent (2). The GINA guidelines serve as a cornerstone in managing asthma by providing comprehensive, evidence-based recommendations for healthcare professionals. These guidelines aim to standardize care, optimize patient outcomes, and reduce the burden of asthma-related morbidity and mortality.

1.1. Key Components of GINA 2019-2022 Recommendations

The GINA guidelines emphasize a patient-centered approach, focusing on personalized management strategies. Key components include:

- **Diagnosis and Assessment:** GINA recommends a stepwise approach to diagnosing and classifying asthma severity, incorporating clinical assessment, lung function tests, and patient-reported outcomes.

- **Pharmacological Treatment:** GINA provides detailed algorithms for asthma treatment, advocating for a combination of controller and reliever medications based on asthma severity and control.

- **Non-pharmacological Management:** The guidelines highlight the importance of patient education, self-management plans, and addressing triggers to improve asthma control.

- **Asthma- COPD Overlap:** GINA acknowledges the overlap between asthma and chronic obstructive pulmonary disease (COPD), guiding diagnosing and managing such cases.

1.2. Impact on Clinical Practice

Adhering to GINA guidelines has a substantial impact on clinical practice. Studies have demonstrated that guideline adherence leads to improved asthma control, reduced hospitalizations, and enhanced quality of life for patients. For instance, a study by Reddel et al. (2017) showed that adhering to GINA recommendations resulted in fewer exacerbations and decreased healthcare costs (3).

1.3. Challenges in Adherence

Despite the benefits, challenges exist in implementing GINA recommendations. These include:

- **Awareness and Knowledge Gap:** Healthcare professionals might be unaware of the latest guideline updates, leading to outdated practices (4).

- **Patient Factors:** Patient adherence to prescribed medications and self-management plans can be influenced by socioeconomic status, health literacy, and cultural factors (5, 6).

- **Healthcare System Barriers:** Limited time during patient visits, inadequate resources, and lack of multidisciplinary care can hinder guideline adherence (7, 8).

Different studies were conducted during the previous year's review of the degree of adherence of physicians and patients regarding the diagnoses and treatment of asthma according to the recommendations from GINA guidelines in various countries. Table 1 shows the degree of adherence of physicians and patients to GINA guidelines.

Table 1. The degree of adherence of physicians and patients to GINA guideline according to previous studies

No.	Year of study	Location	Aim	Participants (Sample size)	Methods	Main findings	Reference
1-	May 2015 to December 2019	Cleveland Clinic Abu Dhabi, Abu Dhabi	It aimed to determine the percentage of inaccuracy in classifying the severity of asthma as severe asthma based on 2019 GINA guideline.	Asthma patients (902)	This study divided the patients retrospectively into 5 groups based on the recommendations of GINA 2019 guideline. All patients completed 3 consecutive visits, were diagnosed by doctors, and received appropriate treatment. 334 patients were classified as severe asthma.	The percentage of inaccuracy in the classification of asthma was 65.3%, due to the lack of understanding and awareness of the GINA guideline by doctors and patients.	(9)
2-	Between July and August 2020	Australi, Canada, China, and the Philippines.	This study aimed to find out the extent to which clinical practices for the treatment of asthma in those countries relate to the standards and recommendations of GINA, the most important of which is the use of ICS/formoterol as needed as a controller/reliever therapy.	Physicians (803) and asthma patients (1216)	Multi-country, cross-sectional online survey of patients and physicians contacted via email, and statistical analysis are included. The questionnaires were based on previous respiratory questionnaires used in the Global Asthma Physician Survey (GAPS) and the Asia Pacific Survey of Physicians on Asthma and Allergic Rhinitis (ASPAIR).	- Most physicians focused and preferred managing asthma symptoms over exacerbations. - Lack of awareness and understanding of Maintenance And Reliever Treatment (MART) dosing	(10)
3-	Between August and Novembe r 2021.	Argentina, Brazil, France, Italy, and Mexico	This study aimed to determine the extent to which clinical practices for the treatment of asthma in those countries relate to the standards and recommendations of GINA.	Physicians (1080) and asthma patients (1650)	A multinational, cross-sectional online survey of patients and physicians contacted via email. The questionnaires were based on previous respiratory questionnaires used in the Global Asthma Physician Survey (GAPS) and the Asia Pacific Survey of Physicians on Asthma and Allergic Rhinitis (ASPAIR).	- There was agreement and conformity with GINA 2021 Track 2 recommendations for Proactive Regular Dosing (PRD) with ICS/LABA with/without as-needed (SABA) for patients with uncontrolled moderate to severe asthma. - Lack of awareness and understanding of Maintenance And Reliever Treatment (MART) dosing	(11)
4-	Between 15th October and 30th Novembe r 2020	Jordan	It aimed to examine and identify gaps in physicians' knowledge and practice related to asthma treatment in Jordan.	Physicians (271)	- A cross-sectional online survey. - The evaluation questionnaire consists of three parts based on previous studies.	- Physicians in Jordan have a good level of knowledge about asthma management, but this knowledge is not applied in clinical practice to control asthma. -The percentage of adherence with the guideline was low.	(12)
5-	From Septembe r 2017 to December 2017	Malaysia	It aimed to asthma symptom control and adherence to asthma medication.	asthma patients (1011)	- This was a prospective non-interventional observational cohort Study. - The asthma control and treatment level was assessed by GINA 2019.	- Patients were non-compliance with the prescribed treatment. - Spirometry was rarely used by physicians in diagnosis.	(13)

6-	From 1 July 2019 to 31 December 2019	Malaysia	This study aimed to assess patients' quality of care headed to Southeast Asia's emergency departments for asthma exacerbations.	Patients presented to emergency departments for acute asthma exacerbations (172)	- Retrospective study included adult patients ≥18. - The level of asthma control, treatment, and severity of exacerbations were assessed using GINA 2019.	- The level of GINA-defined asthma control stayed low, with only 6.4% of the patients were considered to have reasonable control, while asthma was uncontrolled in (68%) of the patients.- Haze during the study period caused up to a quarter of exacerbations. - The higher percentage of patients with severe exacerbations were on GINA Step 5 treatment than those with moderate exacerbations. - Management of asthma exacerbations in hospitals in Southeast Asia is mainly consistent with international guidelines; however, there is still a lack of control over the disease and an increase in the need to educate patients and their commitment to treatment.	(14)

Abuzakouk and colleagues (2020) conducted a research to evaluate the proportion of errors in identifying asthma severity as severe according to the GINA 2019 guideline. This study included 902 asthma patients who were classified into five groups retrospectively. According to the findings of this study, all patients had three continuous visits, were diagnosed by doctors, and were given suitable medication. 334 people were identified as having severe asthma, and 218 of them were incorrectly diagnosed, with 203 having moderate asthma, 14 having mild asthma, and one having non-specific asthma. Furthermore, the 334 patients with severe asthma were separated into groups depending on the daily ICS-LABA medicine they use. According to their findings, the proportion of errors in the categorization and diagnosis of asthma was 65.3%. This proportion was due to clinicians' and patients' lack of comprehension and awareness of the GINA standards (Abuzakouk, Jacob, et al., 2020).

The use of ICS/formoterol when necessary as a controller/reliever therapy is the most significant recommendation made by GINA for asthma treatment, and it was the subject of a recent study that was conducted in 2020 to ascertain the degree to which clinical practices for the treatment of asthma in Australia, Canada, China, and the Philippines relate to GINA standards and guidelines. This study includes a cross-sectional, international online survey of patients and doctors. The questioner's questions are based on earlier respiratory questionnaires used in the Asia Pacific Survey of Physicians on Asthma and Allergic Rhinitis (ASPAIR) and the Global Asthma Physician Survey (GAPS). It was reported that the patient's asthma condition was determined using an asthma control test. In addition, most doctors prioritized controlling asthma symptoms above treating asthma exacerbations, and patients also shared this goal. The study found that clinical practices are not being followed and that there is a lack of knowledge of the GINA's guidelines, particularly when it comes to dosages for maintenance and relief treatment (MART) (as-needed ICS/formoterol) (Chapman, An et al., 2021).

In order to determine how closely clinical practices for managing asthma in various nations connect to the norms and guidelines of GINA as well as what treatments patients prefer, Chapman and his group (2022) carried out a study in Argentina, Brazil, France, Italy, and Mexico, the sample for this study included doctors and people with asthma. Patients and doctors were contacted through email, and information was gathered from them using a cross-sectional online survey. The questions are based on earlier respiratory questionnaires used in the Asia Pacific Survey of Physicians on Asthma and Allergic Rhinitis (ASPAIR) and the Global Asthma Physician Survey (GAPS). It was discovered that proactive regular dosing (PRD) with ICS/LABA with or without as-needed SABA remains the preferred treatment method for patients with uncontrolled moderate to severe asthma. Physicians and patients would rather control asthma symptoms over exacerbation reduction. This finding revealed the commitment to GINA

2021 Track 2. Furthermore, despite the patients being told about maintenance and reliever treatment (MART) in GINA 2021 Track 1, they requested another rescue inhaler to regulate their condition, demonstrating a lack of knowledge and a correct comprehension of the usage of MART (Chapman, Canonica et al. 2022).

Dahmash performed a study in Jordan between October 15 and November 30, 2020. This study used a cross-sectional online survey to assess and identify gaps in doctors' knowledge and practice related to treating asthma. The evaluation questionnaire consists of three parts: - First part focused on the demographic information of participants' and the average number of asthma cases seen by physicians at the clinic per day. The assessment questionnaire utilized in this study is divided into three main sections: The first section concentrates on participant demographic data and the typical number of asthma cases treated by clinic doctors daily. In contrast, the second section gathers information about the knowledge by examining the link between such information and the effectiveness of asthma care. Finally, the third section relied on the Physicians' Practise Assessment Questionnaire (PPAQ), which was created to be used with clinicians to evaluate how well asthma management recommendations were being used. The study's findings demonstrated that although doctors have an excellent general understanding of asthma, they do not use that knowledge to control their patients' asthma. The study also found that the most significant gaps concerned the use of chest radiography to diagnose asthma and the symptoms of an asthma attack. Additionally, it was noticed that some doctors include antibiotics in treatment plans for asthma patients, even though GINA does not recommend them as routine medication for asthma. Last, but not least, it was established that only less than half of doctors (45.3%) manage asthma patients following recommended GINA practices.

An evaluation of asthma symptom management and patient commitment to treatment among patients at public health clinics in Malaysia was recently conducted as a nationwide study. The GINA 2019 recommendations were used to evaluate how well asthma is controlled and treated. The primary conclusions of this research were that Malaysia's system for treating and managing asthma is based on GINA 2019 recommendations. Additionally, even though there was a problem with the whole diagnosis in terms of the required tests, doctors nevertheless recommended suitable treatments for their patients that were in conformity with GINA standards and recommendations. Another issue that has been identified is patients' non-compliance with the recommended treatment. This is a result of a variety of factors, including forgetting to take their medications, taking less medication than was recommended, stopping their medication when they felt better, and taking medication only when necessary (13).

1.4. Strategies for Enhancing Guideline Implementation

To enhance adherence to GINA recommendations, several strategies can be employed:

- **Education and Training:** Regular training sessions for healthcare professionals can ensure they are up-to-date with the latest guidelines (15).

- **Patient Education:** Tailored education empowers patients to participate in asthma management actively (6, 16, 17).

- **Electronic Health Records (EHRs):** Integrating guideline recommendations into EHRs can prompt healthcare professionals to follow evidence-based practices (7, 8).

- **Multidisciplinary Care:** Collaboration among pulmonologists, primary care physicians, nurses, and pharmacists can improve guideline adherence and patient outcomes (17, 18).

CONCLUSION

Adherence to the GINA recommendations is essential for achieving optimal asthma management. The guidelines provide a comprehensive framework for diagnosing, assessing, and treating asthma while considering individual patient needs. Overcoming challenges in adherence and employing strategies to enhance guideline implementation can lead to improved asthma outcomes and a reduced burden on healthcare systems.

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