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Medication Compliance in Allergic Rhinitis Patients with Comorbid Medical Conditions with Percutaneous Cortisone Acetate

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Abstract

To assess medication compliance for patients with concomitant medical problems who have allergic rhinitis (AR) and are using intranasal corticosteroid spray (INCS). Methods: There was a cross-sectional study done. Adults over the age of 18 who also had concomitant asthma, eczema, diabetes mellitus (DM), hypertension (HPT), and persistent AR symptoms were included in the study. Total nasal symptom score (TNSS) was used to gauge the severity of symptoms, patient diaries were used to gauge medication compliance, and the Brief Medication Questionnaire was used to examine adherence hurdles. Results: There were 185 registered participants. Adherence to medicine was 58.9%. Participants with elevated levels of total serum immunoglobulin E (IgE) (2=8.371, p 0.05), house dust mite (HDM) allergy to Dermatophagoides pteronyssinus (DP) type (2=5.149, p 0.05), and severe TNSS at baseline had significantly better medication adherence. the initial visit (p 0.05, 2=37.016). At the first visit, adhering was twice as likely in cases of DP allergy, 2.7 times more likely in cases of increased total IgE, and 15 times more likely in cases of severe TNSS. Lack of symptoms, taking medication only when necessary, worry about side effects, running out of medication, experiencing disagreeable effects, poor response, forgetfulness, and taking too many prescriptions were among the obstacles to adherence. The only other factors that mattered were the absence of symptoms, taking medicine when they appeared, worrying about side effects, and running out of medication. Asthma/eczema, HPT/DM, and multi-medication use did not significantly correlate with medication adherence (2=0.418, p>0.05, 2=0.759, p>0.05, and 2=1.027, p>0.05, respectively).

Keywords: Allergic rhinitis • Intranasal corticosteroids • Medication adherence • Comorbid medical diseases • Immunoglobulin E

Introduction

Due to their efficacy and effectiveness in reducing inflammation and treating allergic rhinitis (AR) symptoms, particularly nasal congestion, in patients with moderate to severe allergic rhinitis (AR), intranasal corticosteroids (INCS) are advised as the first line of pharmacotherapy. Patients with uncontrolled AR suffer a detrimental impact on their quality of life, which is widely recognised. Nasal obstruction contributes to sleep disturbances that cause fatigue and cognitive deficits like short attention spans and poor focus. Additionally, persistent sneezing and rhinorrhea result in the need to always have tissue paper on hand, which can negatively impact the patients' social position and self-esteem [1]. The process by which patients take their medications as directed is known as medication adherence, and it consists of three phases: initiation, implementation, and cessation. Medication non-adherence is a possibility. at any point in the integrated process, wherever. The five aspects of social and economic variables, therapy-related factors, disease-related factors, patient-related factors, and health care system-related factors can all affect adherence. Patient-related factors can be intentional or unintentional, and can depend on a patient's ability to pay, beliefs and attitudes about their disease, medication side effects, and expectations for improvement. Intentional factors can include actively choosing to stop or modify a treatment regimen. Gender, age, and education level are examples of non-changeable characteristics, but medicine beliefs and regimens are modifiable elements [2].

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Subjective Heading

Study design and setting

The National Medical Research Registry (NMRR) Malaysia's Medical Research and Ethic Committee granted ethical permission for the study, which was carried out in accordance with the Declaration of Helsinki. From January 2020 to June 2021, a cross-sectional study was conducted at the otorhinolaryngology clinic of a tertiary hospital in Kuala Lumpur. Prior to recruitment, informed consent was sought from each patient. All AR patients who met the selection criteria were enlisted using a practical sampling technique. The proforma form was distributed to willing patients so they could record their allergy history and other relevant data. Complete information from the proforma is displayed in Supplementary. They were scheduled for follow-up appointments at the fourth and twelfth week after completing the necessary exams since the initial visit [3].

Adults over the age of 18 who had persistent allergic rhinitis symptoms, as defined by Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines, along with or without coexisting chronic medical conditions that had been medically diagnosed by a doctor. These conditions included asthma, eczema, diabetes mellitus (DM), and hypertension (HPT) [4]. For the whole period of the study, INCS sprays were prescribed to every patient. Based on a hospital record with a certified diagnosis by a doctor and any current prescriptions or drugs, comorbid medical problems were evaluated. Comorbid medical disorders require that patients take their doctor-prescribed drugs for at least a year. Patients with underlying sinusitis, nasal polyposis, a deviated nasal septum, sinonasal cancer, and recent (within the last five years) nasal surgery were excluded. Sociodemographic data, medical history, and allergy information were documented. The number of children and pets maintained at home, as well as the marital status, were all included in the sociodemographic characteristics. The International Standard Classification of Education served as the foundation for the division of education into three levels: primary, secondary, and tertiary [5].

In addition to the number of working hours, the occupation was categorised as either professional or non-professional. According to one definition, a

professional occupation is one that calls for a Bachelor's, Master's, or Doctor of Philosophy degree. Nasoendoscopic examination was used for the evaluation, and an immunoglobulin E (IgE) test or a skin prick test was used to determine whether the patient had allergies. A wheal of greater than 3 mm in response to allergens with a nonreactive negative control after 15 minutes was considered a positive skin prick test (SPT) result. A A serum specific IgE value of 0.35 kU/L or higher was regarded as positive for allergy. Patients were given a medication diary to track their use of their medications and note any negative side effects. The use of INCS was found to have some negative side effects, including pain, epistaxis, and aftertaste. To ensure proper nasal spray administration, all patients were instructed on how to apply the INCS properly and asked to demonstrate the technique at least once [6].

Assessment of barriers to adherence

By conducting a direct interview at the 12-week mark, the Brief Medication Questionnaire (BMQ) assessed the difficulties patients had adhering to their treatment (first author). The BMQ is sensitive, succinct, and capable of identifying certain domains of obstacles, discovering various types of non-adherence, and assessing multi-medication intake. The BMQ is a recognised and trustworthy instrument for monitoring medication adherence in patients with long-term medical disorders. It is broken down into three primary sections: "Regimen," "Belief," and "Recall." The 5-item "Regimen" questions about medication consumption, including the brand and strength of the prescription drug, frequency, doses, concurrent drug use, and missing doses. The 2-item "Belief" asks about the effectiveness of the drug and any unsettling side effects. resolves issues with remembering, especially those related to taking many prescriptions and having trouble remembering to take the medications [7].

we classified several medications as the usage of more than 3 medications. The score range for the "Regimen" portion is 0 to 7, while the scores for the "Belief" and "Recall" sections are 0 to 2. Any score higher than zero for any one of the components indicates possible non-adherence to advised therapy. The highest total BMQ score is 11. Version 25 of IBM's Statistical Package for Social Science (SPSS) was used to analyse the data. The characteristics of the participants were described using descriptive statistics, which were reported as mean SD for numerical variables and frequency (%) for categorical categories. To assess the relationships between categorical factors and medication adherence, a Chi-squared test (2-test) was performed. To find variables linked to medication adherence, basic logistic regression was used to assess the significant connected components. The threshold for statistical significance was set at p 0.05 [8].

Discussion

Around the world, including Asia, a sizable fraction of people suffer with allergic rhinitis; prevalence rates range from 27% in South Korea to 32% in the United Arab Emirates. The main form of treatment for AR is INCS, although there are huge variations in how well it is used in different nations around the world. The adherence rate of 59.5% found in our study is significantly lower than a study from Italy that found an adherence to INCS of 85.7%, although it is comparable to a study from Singapore (63.1%). In other investigations, the prevalence of concurrent bronchial asthma in individuals with allergic rhinitis ranged from 28% to 67.3%. We discovered that the prevalence among our patients was lower (18.9%). environmental variations and These differences could be explained by allergic stimuli. Concurrent DM, HPT, bronchial asthma, and eczema had no impact on medication adherence in the current trial [9].

Elevated total serum IgE was frequently found in allergic diseases, which can aid doctors in confirming the diagnosis of allergic rhinitis or bronchial asthma. According to a study by Nukhbat et al., who discovered that serum IgE levels were higher in moderate to severe AR compared to the milder form of the condition, a higher total serum IgE level is associated with a greater burden of disease. Most of our patients exhibited raised total serum IgE levels, which are linked to far higher drug adherence. Notably, the HDM DP was the allergen that participants in this study were exposed to the most frequently. type. This incidence is comparable to a Thai study's finding that 75% of patients tested positive for HDM DP. The presence of DP allergy was shown to significantly correlate with INCS medication adherence. Participants who had a positive SPT to DP tended to stick to their medications more religiously than those who had a negative DP [10].

Conclusion

The study's AR participants had a 58.9% drug adherence rate to INCS. Patients who have AR, are sensitive to DP HDM, have greater total serum IgE levels, and have severe nose symptoms at first presentation adhere to INCS treatment more consistently. The adherence to INCS was unaffected by taking numerous medications. Since the lack of symptoms proved a deterrent to adherence, patients with mild and moderate AR must be reminded at each appointment of the advantages of using INCS in accordance with the recommended dose and frequency. To remove obstacles and establish confidence, patients and their healthcare providers must get along well. This is important to assuage concerns about the potential negative consequences of INCS. The additional obstacles, By sending prescriptions directly to patients, healthcare professionals can avoid problems like running out of pharmaceutical supplies.

Acknowledgement

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Conflict of Interest

None.

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