

## EVALUATION OF EFFICACY OF MANAGEMENT PROTOCOL IN ALLERGIC RHINITIS

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**Background:** Allergic rhinitis represents a global health issue affecting between 10% to 25% of the world population, with increasing prevalence, resulting in a significant impact on quality of life, multiple comorbidities and the considerable socio-economic burden. Majority of the patients are younger than 30 years and it may be inherited. Symptoms typically occur as a result of exposure to dust, dander or certain seasonal pollen. Lack of standardized management protocol is one of the major factors responsible for poor control of this condition. This study was designed to evaluate the patients suffering with allergic rhinitis and manage them with a protocol based on the pathogenesis of the condition. **Method:** This prospective study was conducted in the Department of Ear, Nose & Throat and Head & Neck Surgery, Ayub Teaching Hospital, Abbottabad, over a period of two years (2005 – 2006), to assess the efficacy of a standard protocol of treatment developed and followed in the department. 1167 patients, clinically diagnosed as suffering with allergic rhinitis, were evaluated and managed. Age ranged from 08 months to 64 years. All the patients were prescribed medical treatment, divided into initial phase of 10 days to two weeks duration followed by a maintenance phase, and a regular follow-up schedule was maintained upto two years. **Results:** 634 (54.32%) patients were male and 533 (45.67%) were female. Age ranged from 08 months to 64 years, 85% being between 05 and 45 years. 91% of patients had symptom duration of 06 months to 03 years. 96% of the patients were getting treated on as required basis, whereas 98% had no educational sessions with the treating doctor, especially regarding preventive measures. Typical presentation in most of the patients was nasal obstruction, runny & itchy nose, post nasal drip and bouts of sneezing. 90.57% patients reported improvement in symptoms. 53.21% patients had a relapse of symptoms at some stage during the study period. 37.53% patients had surgery done for associated pathologies, mostly a DNS. Compliance regarding medication was more than 90% in the initial phase of treatment that dropped to 50% in the maintenance phase. 93% of the patients tolerated the treatment well. **Conclusion:** Allergic rhinitis is a growing problem worldwide. Optimal treatment protocol is still lacking especially in the developing countries. Patient's education on avoidance of allergens must be stressed. Associated problems that may need surgical treatment. Regular follow-up must be ensured to monitor the progress of treatment as well as to identify patients who might be candidates for immunotherapy. Newer modalities of treatment need to be further explored. A team approach is mandatory in the presence of symptoms related to lower respiratory tract.

**Key words:** Allergic rhinitis; Treatment; Antihistamine; Intranasal corticosteroid; Surgery

### INTRODUCTION

Allergic rhinitis is an inflammation of the nasal mucous membrane, an IgE mediated reaction, presenting with nasal obstruction, watery nasal discharge, sneezing and itchy nose and eyes.<sup>1</sup>

Allergic rhinitis represents a global health issue affecting between 10% to 25% of the world population, with increasing prevalence over the last decade.<sup>2,3</sup>

It is the most common chronic condition in children and is estimated to affect up to 40% of all children.<sup>4</sup>

As a consequence, its impact on quality of life, the association with multiple comorbidities and the considerable socio-economic burden, allergic rhinitis is considered a major respiratory disorder.<sup>5</sup>

There is no specific age as to the onset of the symptoms; however, a large majority of the patients

are younger than 30 years. Furthermore it may be inherited as an autosomal dominant condition.<sup>6</sup>

Symptoms typically occur as a result of exposure to dust, dander or certain seasonal pollen. When caused by pollen, the allergic rhinitis is commonly called hay fever<sup>7</sup>

The severity of allergic rhinitis is graded according to the impact of the disease on the quality of life. The diagnosis of allergic rhinitis involves a thorough history and clinical examination, both local and systemic, especially lower respiratory tract.

A stepwise therapeutic approach is recommended based on the duration and severity of disease. The treatment of allergic rhinitis consists of allergen avoidance, pharmacotherapy and immunotherapy.<sup>5</sup>

Treatment may include antihistamines, decongestants, sodium cromoglycate, and/or topical nasal steroids. Patients whose symptoms are refractory to these therapeutic measures should be

referred to an allergist for further evaluation and consideration for possible allergen immunotherapy.<sup>8</sup>

Oral antihistamines are first-line therapy for mild-to-moderate allergic rhinitis. The newer, non-sedating agents are recommended over first-generation antihistamines. Some of the newer oral antihistamines, such as cetirizine, desloratadine, and fexofenadine, have been shown to relieve the symptom of nasal congestion. Intranasal steroids are first-line therapy for patients with more severe symptoms.<sup>9</sup>

Food sensitivities may complicate the evaluation and treatment of the sensitive patient, and frequently the idea of foods causing problems with rhinitis is ignored.<sup>10</sup>

Immunotherapy is recommended for treatment failures in the appropriate patient.<sup>10</sup> It has been noticed that patients with allergic rhinitis are not being managed as per recommended protocols. Instead, symptomatic treatment when the condition worsens and symptoms get unbearable, is a common practice.

Most of the patients eventually accept the condition as their fate with no hope of cure, while others end up in one or the other complications. Majority of the patients, eventually, do not even bother to go a doctor when symptomatic, rather treat themselves with antihistamines and topical sympathomimetics, at times long term.

This study was designed to evaluate the patients suffering with allergic rhinitis and manage them with a protocol based on the pathogenesis of the condition.

## MATERIAL AND METHODS

This prospective study was conducted in the Department of Ear, Nose & Throat and Head & Neck Surgery, Ayub Teaching Hospital, Abbottabad, over a period of two years (2005 – 2006), to assess the efficacy of a standard protocol of treatment developed and followed in the department.

Following a detailed history and thorough clinical examination, 1167 patients, diagnosed as suffering with allergic rhinitis, were evaluated and managed. Skin prick test was not possible due to non-availability. Secondly, results from other centers have failed to satisfy the clinicians on more than one occasion.

All the patients were prescribed medical treatment, divided into initial phase of 10 days to two weeks duration followed by a maintenance phase. Initial phase comprised of a combination of drugs depending upon the severity of the condition at presentation. Most of the patients would receive a combination of topical steroid and decongestant, an antihistamine, preferably second generation.

Additional medication was determined on the basis of features, like presence of secondary infection or features suggestive of involvement of lower respiratory passages, i.e. appropriate antibiotic and a steroid cum bronchodilator inhaler, along with a consult with a pulmonologist or a chest physician. A course of systemic steroid was reserved for severe acute cases, after ruling out any known contraindications to such treatment. Patients were followed at the end of initial phase and entered into maintenance phase with a prescription of topical, intranasal steroid spray, for an initial duration of one month. In children, below 6 years age there was reluctance on part of the clinician regarding prescription of intranasal corticosteroids and were, instead, given topical sodium cromoglycate, but dosage compliance was always a problem, school timing and sleeping schedule being reason on most of the occasions. Thereafter, patient's clinical condition and response to treatment would dictate the future course of treatment.

During all this period, patients were strictly advised and educated on preventive measures, i.e. avoidance of exposure (dust/pollen, sudden change of temperature, pets etc), use of mask when going outdoors, traveling with windshields closed etc. special emphasis was made on allowing sunshine into living areas and steps for elimination of house dust mites and cockroaches etc.

In case of an associated surgical pathology, i.e. deflected nasal septum (DNS), hypertrophic inferior turbinates (HIT) or nasal polyposis, appropriate procedure was scheduled and extended.

Response to treatment was assessed from; relief of symptoms, examination findings compared to pre treatment and follow up during maintenance phase.

## RESULTS

634 (54.32%) patients were male and 533 (45.67%) were female. Age ranged from 08 months to 64 years, 85% being between 05 and 45 years. Majority (78%) were suffering with intermittent allergic rhinitis and 22% fell into persistent allergic rhinitis group. 91% of patients had symptom duration of 06 months to 03 years. 96% of the patients were getting treated on as required basis, whereas 98% had no educational sessions with the treating doctor, especially regarding preventive measures.

Typical presentation in most of the patients was nasal obstruction, runny & itchy nose, post nasal drip and bouts of sneezing. Uncommon symptoms were itchy throat & eyes, dry cough and still rare, a wheezy chest.

Dust/smoke exposure, Sudden exposure to cold temperature, pollen exposure and dampness were the common triggering factors.

1057 (90.57%) patients reported improvement in symptoms, in the range of 70 – 90%. 729 (62.46%) patients maintained follow-up upto 6 months and this figure dropped to 15% at the end of two years. Authors believe a symptom free status as the main reason for this figure in most of the subjects, as this is the only tertiary care center in the region and even if the patients would have changed the doctor, probably would not have gone unnoticed.

621 (53.21%) patients had a relapse of symptoms at some stage during the study period and these were the patients who did not maintain follow up and discontinued treatment once symptom free.

Only one third of the patients would take advice regarding prevention seriously and most of the patients would come up with one or the other excuse.

438 (37.53%) patients had surgery done for associated pathologies, mostly a DNS.

Compliance regarding medication was more than 90% in the initial phase of treatment that dropped to 50% in the maintenance phase.

93% of the patients tolerated the treatment well. Some complained about burning sensation, mostly with intranasal steroids and very few had occasional nose bleeds that might not be necessarily attributed to treatment as these patients did have associated pathologies.

## DISCUSSION

Allergic rhinitis is a global health problem with increasing prevalence over the recent years,<sup>3</sup> resulting in adverse impact on the quality of life, systemic complications and socio-economic burden.<sup>5</sup>

The condition can severely restrict daily activities and affect performance at school or work.<sup>11</sup>

This study has revealed that majority of the patients never had been treated following a recommended protocol and almost none had awareness/educational sessions by the treating doctors.

Self medication has been a constant feature in this study. Abuse of antihistamines and topical sympathomimetic agents was noted in many patients and quite a few of those had evidence of Rhinitis medicamentosa.

Furthermore, preventive measures were news to most of these patients. Not surprisingly, quite a few patients had reservations regarding use of mask and glasses when going outdoors for social reasons. At the same time users of such measures did acknowledge their benefit.

Patients presenting with classical clinical features of allergic rhinitis may adequately respond to avoidance strategy and medications for control of symptoms.<sup>8,12</sup>

Over more than a decade, use of long term topical corticosteroids have shown effective control of the condition.<sup>13</sup> All the available topical, intranasal corticosteroids are effective, but few studies are available to evaluate possible long term systemic adverse effects, especially in children. As a matter of fact, beclomethasone dipropionate given twice daily, has been blamed to reduce growth velocity in children, in a couple of studies.<sup>14</sup> On the other hand, in children as young as 4 years, fluticasone propionate aqueous nasal spray given once daily, was well tolerated and does not appear to interfere with the hypothalamic-pituitary-adrenal axis.<sup>15</sup>

Most of the patients had shown adequate compliance in the initial phase of treatment but non-compliance was certainly a feature regarding the follow-up and during the maintenance phase.

Another significant clinical finding was that patients having developed complications in the form of middle ear problems or chronic rhinosinusitis or chronic pharyngitis would either not complain about initial nasal problems as they had gone used to it or would not be ready to accept the link, if they were advised treatment regarding the co-morbidities.

An interesting and important fact noticed was lack of team approach in patients where there was involvement of both the upper and lower respiratory tract, between the pulmonologist and ENT surgeon.

Regarding patients who did not respond adequately to pharmacotherapy and had associated pathology, i.e. DNS, hypertrophic turbinates or nasal polyps, did show improvement in condition following surgical treatment for the associated problem.

Some of the patients had already had immunotherapy while others did inquire about the option. Majority of them who had had the immunotherapy did not improve and as a matter of fact, investigations had not revealed any particular allergens in these cases. Secondly, none of these patients were instructed to have the treatment with resuscitation facilities readily available around to combat an anaphylactic reaction if there is any. Moreover, these patients were not advised on that immunotherapy may not be opted for as first line therapeutic modality. As a matter of fact it should be reserved only for patients who fail to respond to adequate medical treatment.<sup>8,10,12</sup>

Recently, phototherapy has been used in the treatment of allergic rhinitis effectively and offer new options for the treatment of immune-mediated mucosal diseases.<sup>16</sup>

Literature search did not reveal evidence of such protocol as was exercised in this study and further work, with multicentred basis, is needed to design an optimal standardized protocol for the

management of allergic rhinitis alongwith its co-morbidities, to ensure good symptomatic relief, better quality of life and prevention of complications.

## CONCLUSION

Allergic rhinitis is a growing problem worldwide.

Optimal treatment protocol is still lacking especially in the developing countries. It entails education and training both on part of the clinician as well as the patient, for early diagnosis and adequate medical treatment. Associated problems that may need surgical treatment need to be identified earlier in the treatment course and sorted out promptly to ensure successful outcome.

Patient's education on avoidance of allergens must be stressed and compliance ensured by the clinician.

In case of presence of symptoms related to the lower respiratory tract, a team approach is mandatory through consultation with a pulmonologist or chest physician.

Regular follow-up must be ensured to monitor the progress of treatment as well as to identify patients who might be candidates for immunotherapy.

Newer modalities of treatment need to be further explored.

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