Original Research Article

Comparative study of therapeutic effect of histaglobulin with nasal steroids in allergic rhinitis: A hospital based prospective study

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Abstract

Background: Allergic rhinitis is an allergic response to specific allergens characterized by rhinorrhea, sneezing, itching of nose, ears and throat. It is usually treated using antihistamines and nasal steroids. The present study aimed to evaluate the efficacy of histaglobulin with nasal steroids in patients suffering with allergic rhinitis. **Materials and Methods:** This study was conducted in the department of ENT, at a tertiary care hospital for 1 year. A total of 60 patients were divided into two groups. G-I treated with histaglobulin and G-II given nasal steroids. All patients demographic, clinical and biochemical data was recorded and analyzed. **Results:** Demographic data (age, gender) not showed any significant difference between the groups. Rhinorrhea, nasal congestion and sneezing scale showed significant difference between the groups. Significant reduction in esonophil count and IgE antibody in both groups compared to baseline. Group-I showed more significant decrease compared to group-II. **Conclusion:** Allergic rhinitis can be treated with anti-allergic drugs, anti-inflammatory agents and antibiotics. Histaglobulin showed significant long term effect compared to nasal steroids in chronic allergic rhinitis. It can be concluded that histaglobulin can be used for long term treatment in patients with allergic rhinitis to prevent the recurrence and steroid induced adverse effects.

Key Words: Allergic rhinitis, steroids, allergy, nasal, histaglobulin, esonophils, IgE antibody

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INTRODUCTION

Allergic rhinitis (AR) is one of the allergic disorders of nose. It can be developed in any age groups[1]. AR is caused mainly due to introduction of allergen into the nose. Exposure to allergen is most commonly seen in polluted metropolitan cities, pets in house, plant origin, dust particles, smoking, chemicals and drugs[2]. These allergens can cause allergic reactions lead to the release of IgE antibody. The released IgE trigger the immune reactions which can produce the inflammation, increase the nasal secretion, allergy and nasal stuffiness[3]. AR clinically diagnosed with the major symptoms like rhinorrhea, sneezing, nasal congestion and allergy. These symptoms will affect the day today life because it will produce the insomnia, irritation, mood changes, difficulty in breathing and cognitive effects[4]. In some patients AR may be associated with other disorders like otitis media, sinusitis, postnasal drip and conjunctivitis. Early diagnosis and treatment can prevent the progression of disease. Recent years various classes of drugs are used in the treatment of AR[5]. But each class of drugs has its own uses and limitations. Most commonly using drugs are steroids, anti-histamines and anti-IgE antibody. Intra nasal steroids are preferred drugs in the treatment of AR[6]. They can reduce the immune reactions and inflammation can relive the symptoms of AR. It was observed that use

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of steroids have some limitations and cannot prevent the recurrence. Recently immunotherapeutic drugs are introduced in the treatment of AR. Histaglobulin is a non-specific immunotherapeutic agent used against AR[7]. But the efficacy was not studied fully in AR condition. The present study aimed to compare the therapeutic efficacy of histaglobulin with nasal steroids in allergic rhinitis patients.

MATERIALS AND METHODS

Study settings: This study was conducted in the department of ENT, This study was conducted in the department of ENT at a tertiary care hospital for a period of 1 year.

Inclusion criteria

- Age between 18-50 years
- Patients with runny nose, sneezing, stuffy nose last one week
- Not on any other medications
- Willing to give consent

Exclusion criteria

- Asthma
- Respiratory tract infection
- Diabetes
- On medication of steroids, antibiotics, NSAIDs
- COPD
- Recent nasal surgery

Study groups

Group-I: Histaglobulin (2 ml) subcutaneous weekly for 10 weeks followed by booster doses once a month for 3 months

Group-II: Fluticasone (2 puffs)

Procedure

Total of 60 patients were included in this study on the basis of inclusion and exclusion criteria. They were divided into two groups each of 30 patients. All patients were explained study procedure and dose schedule in understandable language. Both groups patients demographic data (Age, gender and occupation), clinical data (sneezing, runny nose and stuffy nose) were recorded. Total esonophil count (Automatic Cell counter) and IgE antibody level[8] (ELISA) were measured starting and end of the study.

Statistical analysis

The data was expressed in number, percentage (%), mean and standard deviation. Statistical Package for Social Sciences (SPSS 16.0) version used for analysis. ANOVA (Post hoc) followed by Dunnet t test, unpaired and paired t test applied to find the statistical significant between and within the groups. p value less than 0.05 ($p<0.05$) considered statistically significant at 95% confidence interval.

RESULTS

Group-I and II showed maximum number of patients with age between 31-40 years. Lowest number of patients had age above 18 to 20 years (Table-1). Males were more compared to females in both groups (Graph-1). Age and gender not showed any significant difference between the groups. In group-I maximum patients with runny nose (26) compared other symptoms. 18 showed stuffy nose in group-I and 19 in group-II (Table-2). In both groups maximum number of patients showed severe RNS score (Group-I 23 and group-II 22). Nasal symptoms and RNS score not showed any significant difference ($p>0.05$). Comparison between baseline and end of the study values between and within the groups showed significant difference ($p<0.05$) (Table-3). Baseline esonophil and IgE levels were not showed any significant difference compared between the groups ($p>0.05$). Significant difference ($p<0.04$) were observed compared baseline with end of the treatment with in the groups. Group-I showed significant difference compared to group-II in esonopil count and IgE levels (Graph-2 and 3).

Table 1: Distribution of patients based on the age

Age (Years)	Group-I (n=30)		Group-II (n=30)	
	Number	Percentage (%)	Number	Percentage (%)
Above 18	2	6.67	4	13.33
20-30	5	16.67	6	20.00
31-40	15	50.00	14	46.67
41-50	8	26.67	6	20.00

(No significant difference between the groups)

Table-2: Distribution of patents based on nasal symptoms and score

Nasal symptom (Base line)	Group-I (n=30)	Group-II (n=30)
Sneezing	16	13
Runny nose	26	22
Stuffy nose	18	19
Rhinorrhea, Nasal congestion and sneezing score		
0 (No symptoms)	0	0
1 (Mild)	4	4
2 (Moderate)	3	4
3 (Severe)	23	22

Table 3: Comparison of number of patients baseline and score between the group-I and II

Nasal symptom (Base line)	Group-I (n=30)		Group-II (n=30)	
	Baseline	End of the study	Baseline	End of the study
Sneezing	16	9*	13	8*
Runny nose	26	21*	22	16*,#
Stuffy nose	18	10*	19	11*
Rhinorrhea, Nasal congestion and sneezing score				
0 (No symptoms)	0		0	
1 (Mild)	4	8*	4	6
2 (Moderate)	3	14*	4	10*,#
3 (Severe)	23	8*	22	14*,#

(*p<0.05 significant compared within the groups, #p<0.05 significant compared between the groups)

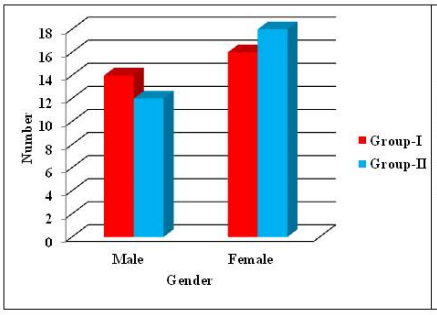

Figure 1

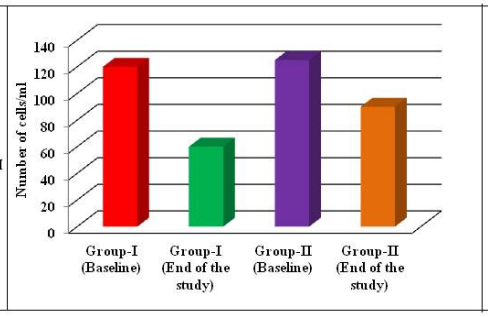

Figure 2

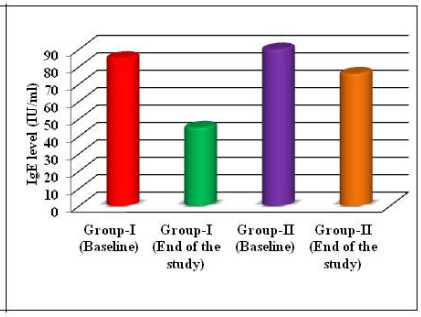

Figure 3

Figure 1: Distribution of patients based on the gender; **Figure 2:** Comparison of total esonophil count between the Group-I and Group-II; **Figure 3:** Comparison of IgE antibody levels between the Group-I and Group-II

DISCUSSION

The present study was included 60 AR patients. They were divided into two groups. Group-I patients was given nasal steroids and group-II given histaglobulin. In both groups the acute condition is treated with Montelukast and levocetrizine and Nasal spray containing Azelastine hydrochlorid with Fluticasone propionate. Once the acute symptoms subsided they were put on specific treatment. Nasal steroids were used commonly in the treatment of AR. Several studies were observed that use of steroids can treat the condition but cannot prevent the recurrence of disease. It was observed that intra nasal treatment is associated with some disadvantages like nasal irritation, dryness, nasal bleeding, altered taste and smell, headache and rarely septal perforation, not cost effective and patient's adherence to therapy and habituation is also a concern. In this study use of steroids significantly reduced the esonophil and IgE antibody levels. Most of the patients shifted the severe RNS score to moderate. It reflects the intra nasal steroids are quite effective in the treatment of AR. Varshney J et.al., study also showed administration of intra nasal steroids significantly reduced the symptoms of AR[9]. Trangsrud AJ et.al., study also concluded that use of nasal steroids significantly prevent reduced the symptoms of AR[10]. Recently immunomodulators are introduced in the treatment of AR. These drugs have some advantages compared to the steroid therapy. Most of the limitations of steroid therapy can overcome with the use of immunomodulators. They are quite effective than steroids especially in long term

control of allergic symptoms in chronic allergic rhinitis. But response with steroids is faster compared to immunomodulators. Histaglobulin is one of the immunotherapeutic agent used widely in the treatment of AR. It has immune suppression action which reduced the IgE and other immune cell mediated allergic reactions. In the present study administration of histaglobulin significantly reduced the symptoms of AR and also reduced the levels of esonophils, IgE antibody levels. It was observed that administration of histaglobulin showed significant results compared to intra nasal therapy. Narayana J et.al study also emphasizes the efficacy of histaglobulin on allergic rhinitis. They were observed that use of histaglobulin significantly reduced the symptoms of AR[11].Abhinav V et.al study concluded that histaglobulin significantly prevent the symptoms of AR compared to other drugs[12]. In the present study also showed similar effect. This study results showed that use of histaglobulin produce better efficacy than nasal steroids in patients with AR. It mainly reduced the recurrence rate compared to steroids.

CONCLUSION

Intranasal steroids are commonly prescribed drugs in allergic rhinitis which can cause various adverse effects on long term usage and moreover discontinuation of steroids leads recurrence of symptoms that again lead to habituation which becomes a vicious cycle. It can be overcome with the use of Histaglobulin. From the study results it can be concluded that histaglobulin can be used for long term therapy in patients suffering with allergic rhinitis.

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