



ESTIMATION OF SERUM IGE IN ALLERGIC RHINITIS PRE AND POST HOMOEOPATHIC TREATMENT

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Abstract

The Allergic Rhinitis is an inflammatory response triggered by allergens that lead to nasal mucosa inflammation. The current research aimed to assess the efficacy of homoeopathic medicines in the management of allergic rhinitis, additionally the study aimed to evaluate the impact of these remedies on decreasing the levels of IgE antibodies in the serum. This research involved the enrolment of thirty individuals diagnosed with Allergic Rhinitis drawn from outpatient and inpatient departments as well as rural facilities associated with Sarada Krishna Homoeopathic Medical College. The patients were selected randomly and the details were documented, subsequently serum IgE level test also carried out in all the patients. Then the cases underwent careful examination, assessment, and analysis. Regular follow-ups were conducted at 15-day intervals and the changes in the symptoms were documented. Serum IgE levels were re-evaluated after a period of 4-6 months of treatment. The effectiveness of the treatment was determined by comparing the scores of symptoms and serum IgE levels before and after the treatment. Statistical was performed using a paired t test. The results showed a highly significant 99.9% reduction in IgE levels associated with allergic rhinitis before and after the treatment. Similarly, there was also a statistically significant 99.9% improvement in symptom scoring with a p value of 0.05. The finding of this research indicate that homoeopathic remedies are effective in treating Allergic Rhinitis and lowering the serum IgE level in the blood.

Keywords: Allergic rhinitis, Paired 't' test, Homoeopathy, Serum IgE

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INTRODUCTION:

Allergic rhinitis represents a prominent manifestation of an exaggerated response by the immune system. It is characterized by an IgE-triggered inflammatory response that occurs upon the nasal mucosa being exposed to allergens. The word "allergy" pertains to the reaction elicited by an allergen, while "rhinitis" denotes the inflammation of the nasal membranes. This condition stands as one of the prevalent ailments, impacting a substantial portion, ranging from 10% to 40%, of the global population.^[1] The global incidence of allergic rhinitis is escalating at an

alarming pace. This surge is attributed to the interplay of both genetic predisposition and environmental factors.^[2] In India, a substantial portion of the population suffer with allergic rhinitis.^[3] While not typically a grave ailment, its repercussions on individuals' social interactions, professional efficiency, and economic well-being are noteworthy. Furthermore, it can serve as a predisposing element for asthma. The concurrence of asthma and allergic rhinitis underscores the notion of a unified respiratory system where issues in the upper and lower airways are intertwined.^[4] In this modern age dominated by electronic

advancements, the rising incidence of allergic rhinitis is also linked to shifts in lifestyle and dietary patterns. These changes encompass a decline in the consumption of fresh produce, fish, and an uptick in high-fat food intake. This trend is intertwined with a reduced ingestion of essential antioxidants and vitamins like C, E, and β -carotene. Additionally, there's a decrease in the consumption of nutrient-rich green vegetables, which plays a role in impacting our immune system.^{[6][7]} Reports say that allergic rhinitis is a disorder with a strong hereditary tendency also, that often begins in childhood or adolescence, when the patients become sensitised and produce IgE antibodies in response to common allergens.^[8]^[9]

The immune system generates immunoglobulin E antibodies, proteins that combat antigens such as allergens.^[10] This immunological process involving IgE is believed to have a significant role in initiating the release of mediators that contribute to the manifestation of allergic symptoms.^[11] Allergic Rhinitis is characterised by rhinorrhea, nasal pruritus, sneezing, congestion, and nasal obstruction, which is sometimes accompanied by conjunctival symptoms such as eye irritation and increased lacrimation. When compared to sneeze runners, the proportion of sneeze blockers is larger.^[12] Estimation of serum Immunoglobulin E level is a most valuable diagnostic parameter in Allergic rhinitis.^[13] Homoeopathy has a key role in treating the diseases like allergic rhinitis.^[14] As a result, this study provides an evidence-based data on the efficacy of homoeopathic medicines in treating allergic rhinitis and lowering the serum IgE levels. Homoeopathic medications work by optimizing the overactive immune system and providing a stimulus to the body similar to that of a trigger or allergen, leading to the gradual desensitization of the immune system.

Allergic rhinitis is more widespread in the Kanyakumari district due to various factors like pollen from rubber plantations, air pollution from cashew nut factories, agricultural contaminants, poor road conditions, and traffic-related pollution. Additionally, the fluctuating weather conditions in the region, such as sudden rain followed by chilly winds or cloudy skies followed by dry and sunny periods, tend to worsen allergic rhinitis. Numerous patients are seeking medical care for allergic rhinitis in our hospitals. In today's challenging lifestyle, the mental strains of a monotonous routine can exacerbate people's suffering.

In the realm of homeopathy, we offer the potential to alleviate disease symptoms, prevent complications, and mitigate the inclination toward illness. Our homeopathic treatments not only provide relief from symptoms but also contribute to enhancing our immune systems and promoting overall mental and physical well-being.

MATERIALS AND METHODS:

A total of 30 cases of individuals diagnosed with allergic rhinitis were randomly selected from various sources, including the Outpatient Department (OPD), Inpatient Department (IPD), and rural centers of Sarada Krishna Homoeopathic Medical College Hospital. The study focused on allergic rhinitis patients within the age range of 6 to 50 years who exhibited elevated levels of serum IgE. However, individuals with allergic rhinitis who also had conditions such as Deviated Nasal Septum (DNS), nasal polyps, prolonged chest infections (such as Pneumonia, Allergic Bronchial Asthma, COPD, Bronchiectasis, Tuberculosis, and Chronic Bronchitis), non-allergic eosinophilic syndrome, and tropical eosinophilia syndrome were not included in the study.

Patients who exhibited other IgE-mediated hypersensitivity reactions such as urticaria, atopic dermatitis, and drug-induced conditions were also excluded from the study. Additionally, any cases of allergic rhinitis patients who were simultaneously suffering from other systemic diseases were not included. The specifics of each case were documented using a standardized pre-structured case format from Sarada Krishna Homoeopathic Medical College. For each patient, a personalized prescription was formulated through individualized assessment and repertorization. Monthly follow-ups were conducted over a span of 6 months. The selection of potency and the frequency of doses adhered to homoeopathic principles and were tailored to the unique requirements of each case.

Assessments occurred at 15-day intervals, and the observed changes were documented. Serum IgE levels were measured before treatment initiation and again 6 months after treatment completion. IgE class antibodies were detected using the Electrochemiluminescence (ECLIA) method. The results obtained were then subjected to statistical analysis.

RESULTS AND DISCUSSION:

From a pool of 52 initially screened patients, a total of 32 patients were initially enlisted. After applying specific criteria, 30 patients were chosen

to be included in the study's final analysis, with 2 patients being excluded due to discontinuation. These 30 cases were carefully selected in accordance with the outlined inclusion criteria. Cases were diagnosed based on signs and symptoms, clinical presentation as well as based on investigations especially serum IgE levels. Scoring chart was included for the assessment before and after the treatment. Again, another chart is included to show the difference between IgE levels in the blood.

Out of the 52 patients screened, 32 patients were recruited, 30 patients selected and 2 were drop-outs. These 30 cases were selected as per the inclusion criteria and they were included in to the final analysis. Cases were diagnosed based on signs and symptoms, clinical presentation as well as based on investigations especially serum IgE levels. Scoring chart was included for the assessment before and after the treatment. Again, another chart is included to show the difference between IgE levels in the blood. Upon analyzing the data from the 30 observed cases of Allergic Rhinitis, several noteworthy observations have been made. It is apparent that while Allergic Rhinitis is common among children, its occurrence reaches its highest point in the adolescent age bracket (16 to 25 years old), accounting for 40% of cases.

This finding aligns with existing data that indicates a higher incidence of allergic rhinitis diagnoses within the age group of 16 to 24 years compared to other age groups^[15]. Interestingly, the study of these 30 patients revealed a greater prevalence of allergic rhinitis among females, with 53% (16 out of 30) of the cases being female. This corresponds with a previous study conducted in the United States, which reported that female students experienced a significantly higher occurrence of allergic rhinitis compared to male students. Furthermore, female students also reported more severe symptoms than their male counterparts^[16].

Socioeconomic status also played a role in this study's findings, with 73% (22 out of 30) of the patients falling into the middle-class category. This aligns with research that suggests a correlation between the prevalence of allergic rhinitis symptoms and socioeconomic status, indicating that symptoms tend to increase from the lowest to the highest socioeconomic levels^[13]. When looking at the occupations of the patients, 16 of the 30 patients were students (53.33%). The major triggering factor was dust exposure 46.66%

(14) followed by cold exposure 9 cases (30%), which is followed by animal dander in 3 cases (10%), and in 2 cases the triggering factor was found to be smoke exposure with 6.66%. In a study conducted in US it was mentioned that Carpets, mattresses, bedding, pillows, pillow covers, and clothing may contain breeding populations of house-dust mites. And also previous studies have found that approximately 40% of industrial global population has dust mite allergy. These findings are in line with my observation.^[17] In this study 13 patients were having a family history of Bronchial Asthma (43.3%), among which 7 of them were having allergic rhinitis and 2 of them had allergic dermatitis in their family. A prior population study revealed that 40% of children had a family history of allergies, and when grandparents were taken into account, this percentage increased to 47%. Additionally, the presence of asthma in either the mother or the father elevated the risk of developing allergic rhinitis [18]. These findings are consistent with the results of my study. In the current investigation involving 30 cases, it was observed that throat irritation was the most prevalent accompanying symptom, occurring in 7 patients (23.3%). Following this, snoring was reported in 6 patients (20%), and redness of the eyes was noted in 5 patients (16.6%).

In this present study, 10 medicines were used to treat Allergic rhinitis, out of which Arsenicum album was given to maximum number of 9 cases (30%) followed by Sulphur for 6 cases (20%), Silicea, Pulsatilla, Phosphorus in 3 cases each (10%) and Nux vom in 2 cases as well as remedies like Calc carb, Lachesis, Sepia, Natrum mur in 1 patient each. Previous studies also support the efficacy of Ars alb and Sulphur. In this current study, millisimal potency was frequently used i.e., in 16 (53.3%) patients. And centesimal potency was given to 14 patients 46.6%.

Among the 30 cases under study, based on symptom score 15 cases (50%) shows marked improvement, followed by moderate improvement in 11 cases which corresponds to 26.6% and mild improvement in 4 cases (13%). Based on serum IgE level all patients included in this study had IgE level of more than 199 IU/mL. Initially, the maximum frequency of 14 cases were seen in the IgE level of between 200 to 999, and 7 patients were in between 1000 to 1999, 6 patients were seen between 2000 to 2900, 2 Cases were present in between 4000 to 4999 and only 1 patient is in between 5000 to 5999 before treatment. After treatment analysis shows that, the maximum

frequency of 11 cases were less than 200, 7 cases were between 200 to 999, 9 cases were between 1000 to1999, 2 cases were in between 2000 to 2999 and only 1 case is in 3000 to 3999. No

cases were found in other groups. After treatment 11 cases were found to be in the normal limits of IgE.

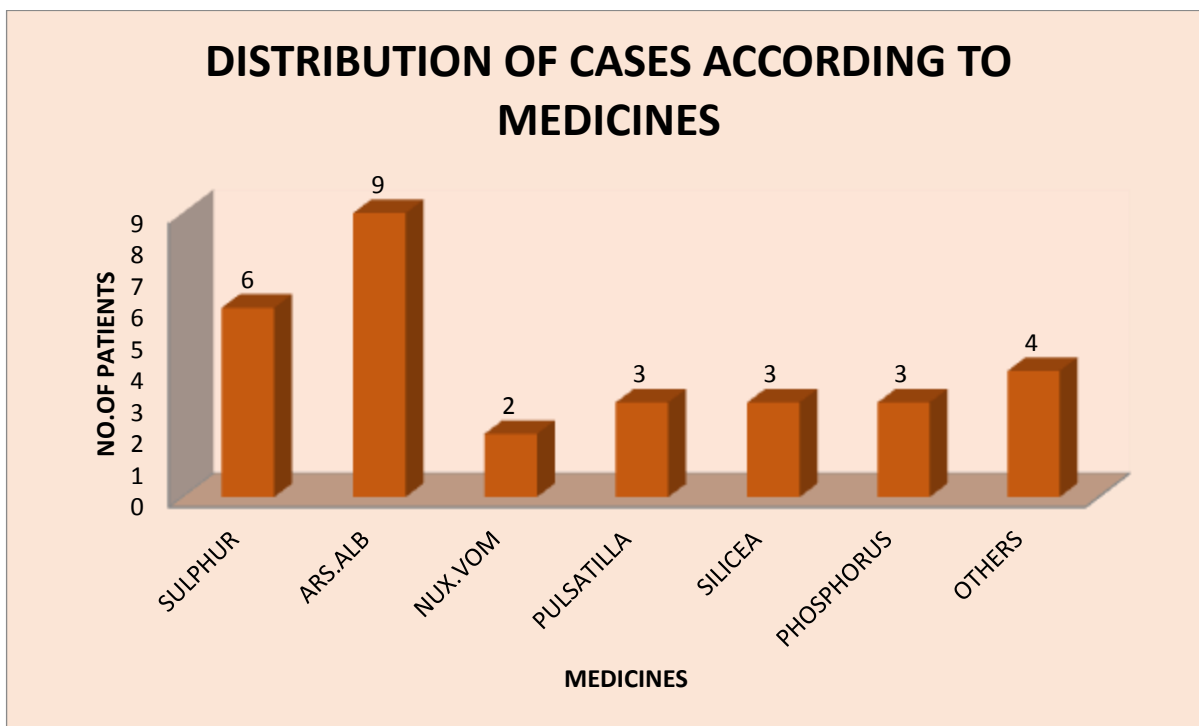


Fig 1: Distribution of Cases According to Medicines

The distribution of patients according to medicines was analyzed in Figure :1. Among the 30 cases studied, 9 cases (30%) were given the remedy Ars alb, and Sulphur for 6 cases (20%), Silicea, Pulsatilla, Phosphorus in 3 cases each

(10%) followed by Nux.vom for 2 cases(6.66%), and also remedies like Calc carb, Lachesis, Sepia, Natrum mur in 1 patient each.

Table: 2 Distribution of Cases According to Improvement based on symptoms score

Results	No of Patients	Percentage
Marked	15	50%
Moderate	11	36.6%
Mild	4	13%
Total	30	100%

The distribution of patients according to improvement based on symptom score was analyzed in Table 2 .Out of 30 cases 15 patients (50%) shows marked improvement, and

11patients (36.6%) moderate improvement and 4 (13%) patients shows mild improvement.

Table: 3 Distribution of Cases According to IgE Before and After Treatment

IgE Range	Before	After
<200	0	11
200-999	14	7
1000-1999	7	9
2000-2999	6	2
3000-3999	0	1
4000-4999	2	0
5000-5999	1	0

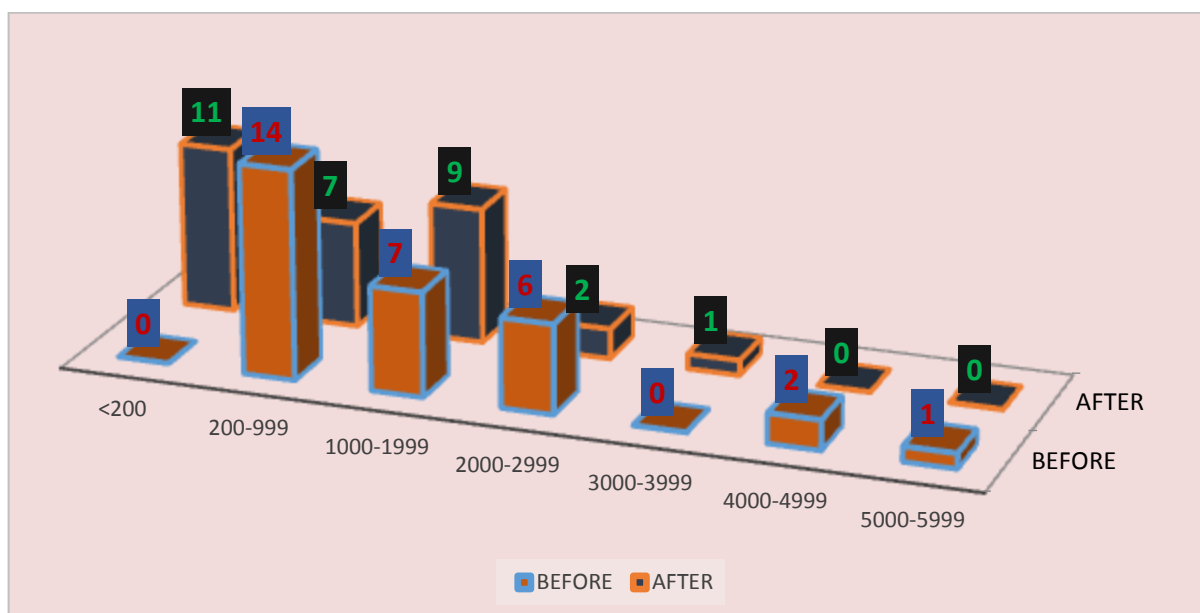


Fig 2: Distribution of Cases According to IgE Before and After Treatment

The distribution of patients according to IgE was analyzed in Table 3 and figure 2. Initially, the maximum frequency of 14 cases was seen in the IgE in between 200 to 999, followed by the group 1000 to 1999 has 7 patients, between 2000 to 2999 has 6 patients, 2 Cases were present in the group between 4000 to 4999 and only 1 patient were present in the group 5000 to 5999 respectively before treatment. After treatment analysis shows that, the maximum frequency of 11 cases were at the level less than 200, 7 cases were in between 200 to 999, 9 cases were in between 1000 to 1999 and 2 cases were under the interval of 2000 to 2999, only 1 case is in the group of 3000 to 3999. No cases were present in the group interval 4000-4999 and 5000-5999. After treatment 11 cases were found to be in the normal limits of IgE. The pictorial representation of the same parameters is shown in Figure 3. Thus, it is proved that after homeopathic treatment the IgE level of the patients was highly reduced.

CONCLUSION:

Evaluating the symptom scores, a significant number of cases in this study exhibited notable and moderate improvement, indicating that Homoeopathic treatment can yield favourable outcomes for allergic rhinitis. Similarly, concerning serum IgE levels, a substantial number of patients demonstrated considerable improvements. However, in certain cases, the level of improvement was less pronounced. This can be attributed to the time constraints of the study. Other research also highlights that the reduction in serum IgE levels can occur at a slower rate during the 3–6 month treatment period^[19]. Notably, even in instances where the IgE

levels did not show substantial improvement, patients still displayed clinical improvement.

The correlation between symptom scoring and IgE showing the value of R is 0.6383. This is a moderate positive correlation, which means there is a tendency for high symptom scores go with high IgE values. By conducting a paired t-test in the statistical analysis, it was determined that there is a highly significant correlation (99.9%) between the IgE levels of individuals with allergic rhinitis before and after the study. Similarly, the symptom scoring exhibited a 99.9% statistical significance, with a p-value of 0.05. Based on these findings, this study firmly concludes that Homoeopathic remedies are efficacious in the treatment of allergic rhinitis, leading to a reduction in serum IgE levels in the bloodstream.

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