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RESEARCH ARTICLE
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EFFICACY OF HOMOEOPATHIC MEDICINE IN ALLERGIC RHINITIS BY ASSESSING SERUM IMMUNOGLOBULIN E LEVELS AND SFAR – AN OBSERVATIONAL STUDY

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Abstract-
Objectives: The primary objective of this study was to determine the therapeutic usefulness of homoeopathic medicines in Allergic Rhinitis(AR) by assessing serum IgE Levels and SFAR(Score For Allergic Rhinitis).
Materials and Methods: A prospective, observational study. Thirty cases of allergic rhinitis (diagnosed based on clinical history, SFAR value and serum IgE values during the first visit) were selected as per the inclusion criteria using purposive sampling technique. All data was collected on standard case record (SCR). Homoeopathic medicines, based on the totality of symptoms and repertorization were prescribed. Complete 6 months of follow-up were considered for analysis. Serum IgE and SFAR values were checked before and after the homoeopathic treatment . The data was statistically analyzed using mean, standard analysis of variants (ANOVA).
Results: ANOVA for repeated measures showed $P = 0.000$, which is highly significant.
Conclusion: Serum IgE value and SFAR value reduced after homoeopathic treatment. Homoeopathic medicines are very effective in the treatment of allergic rhinitis symptoms. Ten homoeopathic medicines were found useful in the study of which Natrum mur, Sabadilla, Allium cepa, Sulphur, Arsenicum album, Pulsetilla nigricans Phosphorus, Bromium, and Lycopodium clavatum were the most commonly indicated and useful medicines. Placebo-controlled trials are needed to evaluate their efficacy and effectiveness

Keywords: Analysis of variants, Allergic Rhinitis, Score For Allergic Rhinitis, Serum immunoglobulin E, Homoeopathic medicine

Introduction:

Allergic rhinitis (AR) is a very common global health problem affecting 5%–30% of the population. [1].This study was undertaken to assess the efficacy of homoeopathic medicines in the treatment of allergic rhinitis. Allergic rhinitis is an IgE-mediated immunologic response of nasal mucosa to airborne allergens and is characterized by watery nasal discharge, nasal obstruction, sneezing, and itching in the nose. This may also be associated with symptoms of itching in the eyes, palate, and pharynx. Various external allergens including pollen grains and dust have been implicated in triggering AR; however, in many cases, the exact inciting factor remains unknown [2]. AR can be seasonal or perennial. Diagnosis of the condition is still debatable and there are examples of both

over-treatment and lack of treatment. Children are especially affected by AR with significant losses of school days and academic deterioration. AR is responsible for massive losses in productivity in a population and also imparts a great economic burden [3]. Thus, it is important to diagnose the condition early and treat accordingly.

A recent study clearly shows the economical loss because of AR in a Western population [4]. One Indian study showed the prevalence to be more than 10% in the general population; however among asthmatic subjects, the prevalence rises to almost 80% [5]. Thus, the diagnosis and treatment of AR must be given priority in different health programs in India especially in the rural area where laboratory diagnostic tools are not available.

To compensate for this lack, a quantitative Score For Allergic Rhinitis (SFAR) ranging between 0 and 16 has been developed by experts[6]. The symptoms of allergic rhinitis with its corresponding scoring is mentioned in Table 1.

SFAR, is a test originally defined in 2002 and is used to determine the prevalence of allergic rhinitis [7]. In various studies, it was shown that SFAR correlates with standard diagnostic tests and can be used in the diagnosis and treatment of allergic rhinitis [7,8]. In the study of Ologe et al. [9], the sensitivity and specificity of SFAR in the diagnosis of allergic rhinitis was reported to be 94.8% and 95.1% respectively. A SFAR value >or = 7 allowed satisfactory discrimination between the outpatients with AR from those without.

The newly a priori proposed Score For Allergic Rhinitis (SFAR) is easy to use and can be useful to estimate prevalence and to study causation of AR in population settings and also assess the effect of medicine.

TABLE: 1 Symptom score for allergic rhinitis (SFAR)

Scoring criteria for AR	Score	Cumulative score
Nasal blocks	1	
Running nose	1	2
sneezing	1	3
Perennial cough	1	4
Seasonal/perennial	1	5
Nasal symptoms with itchy-watery eyes	2	7
House dust trigger nasal symptoms	1	8
Pollen trigger nasal symptoms	1	9
Perceived allergic status	2	11
Previous medical diagnosis of allergy	2	13
Previous positive tests of allergy	1	14
Family history of allergy	2	16
Total score		16

The data were collected on standard case record by questioning the patient (SFAR) and by physical examination. The cases were recorded, keeping the individualistic and holistic concept in mind. Results showed that homoeopathic remedies prescribed on the basis of totality of symptoms are efficient in treating allergic rhinitis. Homeopathic medicines are in a highly diluted form, it work by optimizing the overactive immune system. They stimulate our body as an allergen, leading to the gradual desensitization of the immune system. Remedies used for treating allergies mainly come from the plants or substances that in their raw form are usually responsible for causing allergy-like symptoms[9].

A randomized controlled trial done using the homoeopathic preparation *Galphimia glauca* 6C with placebo in hay fever/rhinitis cases demonstrated the efficacy of Homoeopathy using one indicated remedy and was defined as high quality by three meta-analyses of Homoeopathy.[10-12]

Objective:

To ascertain efficacy of homoeopathic medicines on the basis of variation of serum IgE levels before, during, after treatment and also on the SFAR value before and after treatment in cases of allergic Rhinitis.

Material and Method:

This is the prospective, observational, single-arm, quasi-experimental study involving a cohort and following a descriptive and exploratory goal. Thirty cases of allergic rhinitis were selected as per the inclusion criteria using purposive sampling technique. All cases where taken in the standard case record. Appropriate Homoeopathic medicine was given as per the indications based on the totality. The acute expressions were treated with 200c or 1 M potencies, constitutional drugs were prescribed in 30 & 200 potency. The frequency of specific medicine given to selected patients mentioned in Table 1.

Inclusion criteria

• All consenting participants, 13 years and older, presenting with nasal symptoms were included in the study (consent for paediatric participants was obtained from the guardian). Older children and adults were able to respond correctly to the structured questionnaires with respect to the symptom scores for allergic rhinitis.

• Cases of allergic rhinitis in which serum IgE levels are above 200 IU/ml[12]

• An optimal SFAR score of > or =7.The SFAR encompasses questions regarding the eight features of AR. [Table 1]

Allergic rhinitis complaints where Diagnostic Features:

1. Bouts of sneezing followed by rhinorrhoea (profuse amount) 2. Nasal obstruction (alternate in side) following rhinorrhoea. 3. Heaviness of head and headache associated with sinusitis. 4. There may be irritation and congestion of eyes, respiratory distress and bronchospasm. 5. Nasal mucosa oedematous, pale grey 6. Present, past, family history and that of allergens were included in the study. All consenting participants, 13 years and older, presenting with nasal symp-toms were included in the study (consent for pediatricparti-cipants was obtained from the guardian).Patients who failed to give informed consent, were younger than 13 years (older children and adults were able to respond correctly to the structured questionnaires with respect to the symptom scores), were on antihistamine or other anti- allergy medications, had previous surgical operations involv- ing the nose and paranasal sinuses, or had features suggestive of nasal and paranasal sinus malignancies were excluded. The questionnaire was pretested. (SFAR [Appendix I], with its attributed score based on Annesi-Maesano et al, 15 was adopted for this study.)

All consenting participants, 13 years and older, presenting with nasal symp-toms were included in the study (consent for pediatricparti-cipants was obtained from the guardian).

Patients who failed to give informed consent, were younger than 13 years (older children and adults were able to respond correctly to the structured questionnaires with respect to the symptom scores), were on antihistamine or other anti-allergy medications, had previous surgical operations involv-ing the nose and paranasal sinuses, or had features suggestive of nasal and paranasal sinus malignancies were excluded.

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Exclusion criteria

All consenting

participants, 13 years and older, presenting with nasal symp-toms were included in the study (consent for pediatricparti-cipants was obtained from the guardian).

Patients who failed to give informed consent, were younger than 13 years (older children and adults were able to respond correctly to the structured questionnaires with respect to the symptom scores), were on antihistamine or other anti-allergy medications, had previous surgical operations involv-ing the nose and paranasal sinuses, or had features suggestive of nasal and paranasal sinus malignancies were excluded.

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- Patients who failed to give informed consent, Patient younger than 13 years (older children and adults were able to respond correctly to the structured questionnaires with respect to the symptom scores),
- Patients on antihistamine or other anti-allergy medications, had previous surgical operations involving the nose and paranasal sinuses, or had features suggestive of nasal and paranasal sinus malignancies were excluded.
- Patients who are taking any medication for other acute or chronic ailments.

Period of study: All the cases where followed up for at least period of six months. Repetition schedule: The drugs were repeated depending on the improvement and presentation of the individual case as per sensitivity, susceptibility, immunity and responses during follow up.
Criteria of assessment: Assessment was based on general improvement of the mental and physical level as well as improvement in common symptoms of disease as per SFAR as well as improvement in IgE level. An estimation of serum IgE value for each case was done in the beginning before starting homoeopathic treatment, during consecutive follow-ups, which was after 2 month and after 6 months of treatment. This provided an idea for comparing serum IgE values before, during and after treatment, The result is classified as recovered, improved & discontinued. Recovered means complete removal of symptoms and there is no recurrent episode within 6 months. Improvement means the recurrent episode is very less. Discontinued means patient relief from symptoms but stopped taking medicines. Observations of Study:

Statistical analysis:
The collected data were analysed by mean, standard deviation and analysis of variants (ANOVA). Patients who had at least one visit, apart from the baseline, were included for analysis. The as-treated analysis was applied for conducting the analysis, considering the last observations carried forward. The baseline mean questionnaire scores (SFAR) and IgE levels were compared with the mean scores at the end, using comparative analysis of the paired t-tests.

RESULTS:
This study of thirty patients showed a higher female prevalence (67%) with the 18-23 years' age group being the most affected (33.33%) by Allergic Rhinitis. Thirty diagnosed cases of allergic rhinitis were studied for a period of minimum 6 months. The categorization of patients based on their sex and age groups depicted in Table 2.The results and assessment based improvement in patient symptoms mentioned in Table 3.In each case SFAR was compared before and after homoeopathic treatment and it shows significantly low value after homoeopathic treatment. Serum IgE values were checked thrice, (before, during and after the treatment) The following observations were made: The categorization of patients based on their sex and age groups depicted in Table 2.The results and assessment based improvement in patient symptoms mentioned in Table 3.The homoeopathic medicines with their frequency of use expressed in Table 4. Mean serum IgE levels before, during and after treatment were 1067.39, 913.59 and 852.393 IU/ml, respectively. ANOVA for repeated measures shows P = 0.000, which denotes a highly significant reduction in mean serum IgE values before, during and after homoeopathic treatment, as mentioned in [Table 4].

Prescribed drugs	Frequency of each drugs	Percentage of drug frequency
Natrum mur	08	26%
Arsenic album	06	21%
Sabadilla	03	10%
Pusatilla nigricans	03	10%
Allium cepa	02	06%
Bromium	02	06%
Others	06	21%
Total	30	100%

Table2:Frequency of drugs prescribed to selected patient

Table 3: Gender wise distribution of Patient

Sex	Number of patient	Percent of Patient
Male	12	40%
Female	18	60%
Total	30	100%

Table 4: Analysis of effect of homoeopathic medicines

Result	Number of patient benefited	% of patient benefited
Recovered	19	64%
Improved	11	36%
Discontinued	00	0%
Total	30	100%

Table 5: Mean serum immunoglobulin E levels before, during, and after treatment

	N	Mean	Std Deviation	95%confidance interval for mean		ANOVA F for repeated measures	p
				Lower bound	Upper bound		
Before	30	1067.38	1128.512	646.98	1489.78	15.045	0.000
During	30	913.57	1038.544	524.52	1301.75		<0.0010
After	30	850.492	983.0642	484.937	1219.859		0.000

ANOVA: Analysis of variance

Discussion:

This was an observational study with positive results. This study aimed to assess effect of homeopathic medicine in allergic rhinitis, and assessed variations in serum IgE levels as well as SFAR value before, during and after treatment. Total 30 cases were selected for study including 12 male and 18 female patients. Various homeopathic drugs were given to the selected patients. This study showed that homoeopathic medicines had a promising role in the management of Allergic Rhinitis, and recovery achieved in quick period of time. None of the patients reported a dangerous incident resulting from homeopathic treatment. Most differences between the type and severity of symptoms prior to homeopathic treatment and at the end of the follow-up period were quite distinctive with p values .The data were collected by questioning the patient and by physical examination. Results showed that homoeopathic remedies prescribed on the basis of totality of symptoms are efficient in treating allergic rhinitis. SFAR was decisive tool for diagnosis of cases of Allergic Rhinitis and also for assessment of efficacy of homoeopathic treatment in Allergic Rhinitis. This study proved the usefulness of wholistic approach in treatment considering individuality of patients and not just disease symptoms for remedy selection and outcome assessment. The drugs which were used in study are Natrum mur, Sabadilla,Arsenic album,Allium cepa, Bromium, Sulphur, Pusatilla nigricans, Lycopodium clavatum, Phosphorus.

Homeopathic medicines work by optimizing the overactive immune system. They provide a stimulus (in a highly diluted form) to the body like that of the trigger or allergen, leading to the gradual desensitization of the immune system. Remedies used for treating allergies mainly come from the plants or substances that in their raw form are usually responsible for causing allergy-like symptoms. (AlternTher Health Med. 2021;27(4):58-64)

Conclusion:

There is a significant reduction in serum IgE levels with symptomatic score improvement in cases of allergic rhinitis after homoeopathic treatment**.** The 30 cases were selected for study; out of those 19 patients recovered while improvement from disease condition was observed in 11 patients. These findings of study suggested that homoeopathic medicines offer beneficial effects in the management of allergic rhinitis. Homoeopathic treatment helped to reduce frequency and recurrence of disease and it is cost effective also. Homoeopathy can play a much effective role in the cases of allergic

rhinitis. Limitations • The sample size is small (n = 30) • No control group was included along with the study group to compare test results therefore these results need further validation by conducting clinical trials.

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Conflicts of interest
None declared.

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