Treatment of Seasonal Allergic Rhinitis Using Homeopathic Preparation of Common Allergens in the Southwest Region of the US: A Randomized, Controlled Clinical Trial

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BACKGROUND: Studies using homeopathy have reported beneficial effects from treating allergy-related conditions.

OBJECTIVE: To investigate the effects of a homeopathic drug prepared from common allergens (tree, grass, weed species) specific to the Southwest region of the US.

METHODS: A 4-week, double-blind clinical trial comparing homeopathic preparations with placebo was conducted in the Phoenix metropolitan area during the regional allergy season from February to May. Participants included 40 men and women, 26–63 years of age, diagnosed with moderate to severe seasonal allergic rhinitis symptoms. Study outcomes included allergy-specific symptoms using the rhinoconjunctivitis quality-of-life questionnaire (RQLQ), functional quality of life using the Medical Outcomes Study Short Form-36 (MOS SF-36), and the work productivity and activity impairment (WPAI) questionnaire.

RESULTS: Scales from the RQLQ, MOS SF-36, and WPAI questionnaire showed significant positive changes from baseline to 4 weeks in the homeopathic group compared with the placebo group ($p < 0.05$). Subjects reported no adverse effects during the intervention period.

CONCLUSIONS: These preliminary findings indicate potential benefits of the homeopathic intervention in reducing symptoms and improving quality of life in patients with seasonal allergic rhinitis in the Southwestern US.

KEY WORDS: allergic rhinitis, homeopathy, isopathy.

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Allergic rhinitis, classified as seasonal and perennial, is the most common form of rhinitis. Allergic rhinitis involves immunoglobulin E (IgE)–mediated reactions in the nasal mucosa to one or more allergens. Inflammatory components common to allergic rhinitis include mast cells, eosinophils, T-helper 2 lymphocytes, histamine, leukotriene, and proinflammatory cytokines.[1] The goal of pharmacotherapy is to alleviate and prevent the allergic rhinitis symptoms. Allergic rhinitis is considered one of the most common chronic conditions in the US and is a significant cause of widespread morbidity, medical treatment costs, reduced work productivity, and lost school days.[2] Overall prevalence of allergic rhinitis in the US population is high in both children and adults. In 2000, over $6 billion was spent on prescriptions to treat the disorder.[3] Poorly controlled allergic rhinitis can increase medical costs by triggering shared pathophysiologic conditions of asthma, sinusitis, and otitis media.

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Conventional Treatment

Currently, antihistamines, decongestants, antihistamine/decongestant combinations, corticosteroids, mast-cell stabilizers, and anticholinergics are standard medications to treat allergic rhinitis. Typically, a patient with seasonal allergic rhinitis will use a combination product containing an antihistamine and decongestant for full relief of symptoms. New and novel approaches include leukotriene receptor antagonists like montelukast, phosphodiesterase inhibitors like roflumilast, and immunotherapy.[4,5] Immunotherapies primarily involving subcutaneous injection of allergen extracts have been shown to be effective.[6] Typical starting doses for immunotherapy are 1:1000 or 1:10 000 vol/vol of full-strength concentrate resulting in a true wt/vol dilution of 1:100 000(10^{-5}) or 1:1 000 000 (10^{-6}), respectively.[6] According to a utilization and cost analysis of immunotherapy, cost for rhinitis treatment per person per year was $416.[7]

Homeopathy

The term "homeopathy" is derived from the Greek words homeo (similar) and pathos (suffering or disease). The practice of homeopathy is based on the belief that disease symptoms can be treated by small doses of substances that produce similar symptoms in healthy people: similia similibus curentur (like cures like).[8] Homeopathic drugs are prepared in different dilutions and potencies using a dynamization process called succussion (vigorous shaking with impact) that is performed at each dilution.[9] The most common dilutions are X (1:10 ratio) and C (1:100 ratio) series of potencies. For example, in the X series of potencies, the attenuation process involves the serial dilutions of a 1:10 ratio with succussion. By the *Homoeopathic Pharmacopoeia of the United States* (HPUS) standards, 1.0 g of tincture or 1 mL of 1X aqueous solution represents 0.10 g of dry crude medicinal substance.[10]

ISOPATHIC PREPARATIONS

The homeopathic method of isopathy is an approach that has been used to treat seasonal allergic rhinitis. Isopathy is the employment of homeopathically prepared substances responsible for the disease itself, and the resulting homeopathic drugs are called isodes.[11] For manufacturing purposes, the HPUS classifies isodes prepared by the isopathy method as Class K drugs.[10] HPUS classification is based on the method of preparation and the characteristics of the crude substance (eg, solubility, physical, chemical, or biological properties) used to make the homeopathic drug. A detailed description of the HPUS Classes A through P has been published.[9] This method of using homeopathic drug preparations of pollens, grasses, weeds, and other allergens for treatment of hay fever is comparable to the immunotherapy represented in conventional medical literature. The sources of the allergen materials are from certified laboratories for immunotherapy drugs, which are then diluted and succussed for preparation of homeopathic isodes.

Rationale for the Study

There is a paucity of data on combination homeopathic remedies prepared from multiple raw material sources in both the conventional medical and homeopathic literature. From its inception in 1796, homeopathy's originator, Samuel Hahnemann, postulated that the use of a single medicinal agent was superior to combinations of a number of medicines.[8] In spite of this contention, using combination (complex) homeopathic medicines developed over time, and research has been conducted as to the efficacy of these combinations.[12] In the current study, combination allergens were selected to test their ability to relieve symptoms associated with seasonal allergic rhinitis in the Southwestern US. Because a combination allergen product prepared from allergens that are common to the Southwest is sold in the marketplace, the product was a good candidate for this study.

Methods

RECRUITMENT AND INCLUSION/EXCLUSION CRITERIA

Newspaper advertisements, E-mail announcements, flyers at local colleges and clinics, and press releases were used to recruit potential patients for the study. Men and women aged ≥21 years were eligible if they met the following conditions: a diagnosis of moderate to severe allergic rhinitis for the last 2 years based on clinical assessment, ≥3 active rhinitis symptoms at enrollment (sneezing, burning/itching nose, nasal discharge, watery/irritated eye, congestion, or itching throat), and the ability to comply with intervention protocols and complete study questionnaires.

People were excluded based on the following criteria: nonallergic rhinitis, sporadic symptoms or perennial allergic rhinitis, pregnancy or lactation, smoking, medical conditions that made full participation difficult (asthma, pulmonary disorders, immunocompromised conditions, alcohol or drug addiction), acute upper respiratory tract infection at time of enrollment, concurrent use of therapies for allergic rhinitis including drugs, botanicals, dietary supplements, acupuncture, or other alternative modalities, new allergic rhinitis treatment in the last 3 months, past immunotherapy/desensitization, or previous history of using homeopathy.

ENROLLMENT FACTORS AND RANDOMIZATION PROCEDURES

In 2003, the environmental pollen counts were the highest from February to May in Arizona, which is also considered the allergy season in the Phoenix area. Thus, patients were enrolled during the allergy season in the Phoenix metropolitan area. Forty patients were randomly assigned to the homeopathic (n = 20) or placebo (n = 20) group using Microsoft Excel 2000, a random number-generation program. All participants completed a health history, self-reported, and symptom-specific questionnaires (standard instruments commonly used in rhinitis efficacy research), and received clinical evaluation at baseline and 4 weeks. Weekly phone calls were made by research staff to each of the participants to record any adverse events and determine study adherence. Patients were instructed to return the study bottles at the end of the treatment visit. This study was approved by the Institutional Review Board (Human Subject Protection Review Committee) of Southwest College of Naturopathic Medicine & Health Sciences, Tempe, AZ. Written consent was obtained from each participant prior to study enrollment.

MEASURES OF EFFICACY

Evaluation of allergic rhinitis and quality of life are important toward providing efficacy data on the intervention therapy. The primary endpoint was the Rhinoconjunctivitis Quality-of-Life Questionnaire (RQLQ). Secondary endpoints were quality-of-life status using the Work Produc-

tivity and Activity Impairment (WPAI) measure and the Medical Outcomes Study Short Form-36 (MOS SF-36).

RQLQ

The RQLQ is a standard and established method of evaluating allergic rhinitis. Numerous publications support its validity, reliability, and correlation with disease status and treatment response.[13,14] The RQLQ was developed to measure the problems adults experience as a result of their nose and eye symptoms. The measure consists of 28 questions that address 7 domains (activity limitations, sleep problems, non-nose/eye symptoms, practical problems, nose symptoms, eye symptoms, emotional function), as well as a total symptom score, which is the average of the 7 domains representing overall quality of life. Patients are asked to recall their experiences and give their responses on a 7-point Likert scale (0 = no impairment, 6 = extreme impairment). Rhinitis-specific changes are estimated from mean scores of each domain. We used the 1996 self-administered format and evaluated the combined allergic rhinitis symptoms severity scores of RQLQ.

WPAI

The WPAI tool assesses the impact of an intervention with respect to daily activity and productivity. The WPAI questionnaire has been successfully used in assessing activity and productivity in allergic rhinitis by Meltzer et al.[15] and in allergy research by Thompson et al.[16] The construct validity of the WPAI tool for use in clinical trials, along with its reproducibility, has been tested, showing that overall work productivity was significantly related to general health perceptions.[17] For our study, 4 domains of the WPAI tool were implemented including activity impairment, impairment at work, work time missed, and overall work impairment. Activity impairment and impairment at work were assessed using a visual analog scale (VAS) from 0 to 100 (0 = no impairment, 100 = no activity/work due to allergies). Work time missed and overall work impairment ranged from zero to 100% (0 = no time missed, 100 = work time missed due to allergies).

MOS SF-36

Subjective reporting on overall health-related quality of life (HRQoL) was assessed using the MOS SF-36 (version 2).[18] Although the MOS SF-36 is a generic quality-of-life questionnaire, it was chosen for its multi-dimensionality, brevity, and previous application in a variety of disorders.[19,20] The MOS SF-36 has been successfully used in allergic rhinitis/allergy symptoms clinical trials.[21] Responses to the 36 items assess a number of HRQoL domains, from physical to emotional well-being, and are categorized into 9 domains: physical functioning (ability to carry out activities of daily living), role physical (ability to perform work or other activities), bodily pain (extent and intensity of pain), general health (perception that health will get better or worse), vitality (energy level), social functioning (extent to which health problems interfere with social activities), role emotional (ability to accomplish activities), mental health (feeling nervous, depressed, calm, or happy), and reported health transition (rating of health now vs 1 y ago). Scores for the domains range from 0 (lowest) to 100 (highest), with higher scores indicating better functional quality of life. The reported health transition is evaluated separate from the score domains.

HOMEOPATHIC PREPARATION OF COMBINATION ALLERGENS

The allergens used in the investigational drug for the Southwest region were chosen based on significant levels of pollens reported by the National Allergy Bureau, American Academy of Allergy, Asthma and Immunology Aeroallergen Network. The allergen raw materials (Table 1) were acquired from a certified national subcutaneous allergy desensitization injection laboratory provider that follows the regulations specific to allergy extract manufacturers, 21 Code of Federal Regulations (CFR) Part 680 including 680.1, 680.2, 680.3, and labeling per 21 CFR 270.100. The injectable-grade allergens purchased from the laboratory were then prepared in 6X homeopathic dilutions and successed according to HPUS specifications for decimal scale potencies (S.W. Desert Mix, Dolisos America, Las Vegas, NV). The allergens were combined and dispensed in 1-oz spray bottles. The 6X dilution (10^{-6}) is 1:1 000 000 wt/vol of the original substances. Patients were instructed to use 2 sprays sublingually (0.35 mL) 3 times a day before or after eating or drinking for a total dose of approximately 1 mL/day.

The homeopathic and placebo spray bottles were identical in color, clarity, and taste. The only difference was that the placebo spray bottles did not contain the allergens. The homeopathic ingredients are HPUS compliant to guarantee batch-to-batch quality and consistency. Several of the allergens have HPUS monographs as of 2003 (Table 1). Quality assurance, consistency of content, and certificate of analysis on contaminant testing (bacteria, yeast, mold, heavy metals) were provided by the manufacturer adhering to the current Good Manufacturing Practices and the 1994 Dietary Supplement Health and Education Act guidelines. The manufacturer of the homeopathic drug ensured that there were no antihistamines, steroids, or other antiallergenic pharmaceutical drugs.

STATISTICAL ANALYSIS

The outcome measures were collected at baseline and at 4 weeks. Intent-to-treat analysis was used. SPSS (version 11.0) statistical software was used for all analyses. Outcomes were reported using means and standard deviations. The estimated sample size of 20 patients per group was determined using 80% power with 2-sided (tailed) tests and α of $p < 0.05$ to detect an actual change of 30% improvement in RQLQ total symptoms and domains. The Student's paired *t*-test was used to detect the within-group mean changes in RQLQ total symptoms and domains in the treatment and placebo groups from baseline to 4 weeks. The changes were considered significant at $p < 0.05$.

Results

DEMOGRAPHICS

Thirty-four of 40 (85%) patients completed the clinical trial, resulting in a 15% attrition rate. During the first 2 weeks, 6 patients dropped out of the study, including 2 (10%) in the homeopathic group and 4 (20%) in the placebo group. Their discontinuation was primarily due to lack of response to treatment. Demographic data of the participants completing the 4-week study were as follows. There were 13 (72%) women and 5 (28%) men in the homeopathic group and 12 (75%) women and 4 (25%) men in the placebo group. Participants in the homeopathy group ranged in age from 27 to 63 years (47 ± 12), while persons

Table 1. Homeopathic Preparation of Combination Allergens Specific to Arizona and New Mexico[a]

Allergens prepared by 6X (10^{-6}) dilution	
trees	*Fraxinus velutina* (ash, Arizona)
	Fraxinus americana (ash, white)[10]
	Betula verrucosa (alba) (birch, white)
	Olea europea (European olive)[10]
	Juniperus monosperma (one-seeded juniper)
	Morus rubra (red mulberry)
grasses	*Cynodon dactylon* (Bermuda grass)[10]
	Ustilago cynodontis (Bermuda grass smut)
weeds	*Artemisia tridentata* (common sagebrush)
	Ambrosia psilostachya (ragweed, western)
	Ambrosia acanthicarpa (ragweed, false)

[a]Tree, grass, and weed species.

in the placebo group ranged in age from 26 to 56 years (44 ± 9). Duration of allergic rhinitis for the homeopathy group was 13 ± 9 years, and duration for the placebo group was 11 ± 7 years. The allergic rhinitis total symptom severity score on the primary endpoint, the RQLQ, at baseline for the homeopathy group was 2.96 ± 0.96 and 3.04 ± 1.17 for the placebo group. The demographic and total symptom severity scores did not differ between groups at baseline, nor were there significant differences between groups on the other RQLQ domains or the WPAI tool, suggesting that any differences in response to therapy were not contributed to baseline variability at study enrollment.

EFFICACY RESULTS

The RQLQ mean changes from baseline to 4 weeks were greater in the homeopathic group compared with the placebo group (Table 2). The mean change in the RQLQ total symptoms was significantly greater in the homeopathic group compared with baseline, but not within the placebo group. For rhinitis symptoms, improvement was 37.5% and 26.0%, respectively. In addition to the total symptoms, mean changes in 4 of the 7 RQLQ domains were also significantly different from baseline to 4 weeks in the homeopathic group including activity limitations, sleep problems, eye symptoms, and emotional function, for symptoms improvement of 49.9%, 59.0%, 47.5%, and 48.4%, respectively. Mean changes of the eye/nose symptoms and emotional function RQLQ domains were significant in the placebo group, for symptoms improvement of 46.5% and 44.9%, respectively. The other RQLQ domains score changes at 4 weeks were not significant; the rhinitis-related symptoms improvements ranged from 15% to 24.2% in the homeopathic group and 14.9% to 26.7% in the placebo group.

The WPAI scores decreased in the homeopathic group compared with the placebo group at 4 weeks, indicating positive changes in activity and work performance (Table 2). The mean changes were significant for activity impairment and impairment at work. The changes in work time missed and overall work impairment were not significant in the homeopathic group. The changes from baseline to 4 weeks in the placebo group were not significant across all WPAI items.

The MOS SF-36 functional quality-of-life scores increased significantly in several domains in the homeopathic group, suggesting improvement in specific domains. Significant mean changes were noted for role emotional, mental health, and reported health transition (Table 3). No significant mean changes were found in the other MOS SF-36 domains for the homeopathy group. Mean changes of MOS SF-36 domains for the placebo group ranged from 1.67 at baseline to 7.29 at 4 weeks, but none of the changes was statistically significant.

ADVERSE EVENTS

Major adverse events commonly reported in the literature with drug treatments of seasonal allergic rhinitis were not observed or reported by patients during the intervention or 2 weeks after intervention. Patients did not report such adverse effects as drowsiness, dizziness, nervousness, headache, fatigue, or dry mouth. There were complaints with the treatment due to worsening of their allergy symptoms. The symptoms worsened in 5 (31%) patients in the placebo group. Two patients on placebo reported worsening of symptoms within 15 minutes of using the spray. One patient using placebo reported finding blood in nasal discharge after vigorous nose-blowing the first week, which normally occurred for the patient during the allergy season. Three (17%) patients in the homeopathic group experienced exac-

Table 2. Mean Changes of the Total Symptoms and Domain Scores of RQLQ and WPAI

	Homeopathic Group				Placebo Group			
Parameter	Baseline[a]	4 wk[a]	Mean Change	p Value[b]	Baseline[a]	4 wk[a]	Mean Change	p Value[b]
RQLQ domains								
total symptoms	2.96 ± 0.96	1.85 ± 1.15	1.11	0.032	3.04 ± 1.17	2.25 ± 0.93	0.79	NS
activity limitations	3.93 ± 3.81	1.87 ± 1.62	1.96	0.006	4.10 ± 3.56	3.27 ± 2.41	0.83	NS
sleep problems	2.73 ± 2.13	1.12 ± 1.79	1.61	0.001	2.21 ± 2.10	1.62 ± 1.07	0.59	NS
non–nose/eye symptoms	2.44 ± 2.25	1.85 ± 1.35	0.59	NS	2.73 ± 2.20	1.46 ± 1.36	1.27	0.036
practical problems	3.27 ± 3.04	2.53 ± 2.79	0.74	NS	3.03 ± 3.25	2.58 ± 1.24	0.45	NS
nose symptoms	3.47 ± 3.25	2.95 ± 2.65	0.52	NS	3.55 ± 3.14	2.86 ± 2.21	0.69	NS
eye symptoms	3.16 ± 2.81	1.66 ± 1.31	1.50	0.040	3.32 ± 3.06	2.82 ± 1.80	0.50	NS
emotional function	1.84 ± 1.15	0.95 ± 1.16	0.89	0.032	2.36 ± 2.16	1.30 ± 1.26	1.06	0.043
WPAI								
activity impairment	43.0 ± 23.1	30.5 ± 16.1	12.5	0.031	45.5 ± 31.7	37.3 ± 27.6	8.2	NS
impairment at work	35.0 ± 18.4	24.5 ± 13.4	10.5	0.024	33.6 ± 23.8	39.1 ± 22.6	–5.5	NS
work time missed	19.3 ± 20.2	12.0 ± 14.0	7.3	NS	24.5 ± 38.8	18.2 ± 31.2	6.4	NS
overall work impairment	27.0 ± 12.7	21.4 ± 12.3	5.6	NS	28.5 ± 27.0	33.9 ± 24.0	–5.3	NS

RQLQ = Rhinoconjunctivitis Quality of Life Questionnaire; WPAI = Work Productivity and Activity Impairment.
[a]Mean ± SD.
[b]Within-group differences of homeopathic and placebo groups' significance evaluated using the Student's paired *t*-test. The changes were considered significant at $p < 0.05$.

erbation of symptoms. One patient taking the homeopathic drug had allergy symptoms decrease in the first 2 weeks, which then worsened during the last 2 weeks, while another patient reported epistaxis, but has had nosebleeds in the past, so the cause was not associated with the intervention.

INTERVENTION ADHERENCE

Adherence was determined by patient interviews and amount of fluid remaining in the 1-oz spray bottles at end of treatment. Overall, patients found the daily sprays easy to use. Six subjects reported difficulty using the spray before or after eating or drinking 3 times a day. Four patients complained that a rescue medication to relieve rhinitis symptoms was not allowed during the 4 weeks.

Discussion

The evaluation of treatment response in seasonal allergic rhinitis must address both disease-specific outcomes and overall health-related outcomes. Current literature supports better understanding of quality of life and its role in determining treatment efficacy and value in patients with allergies, particularly allergic rhinitis.[22] Impact assessments on work productivity and classroom time impairment due to disease status are helpful in further identifying treatment choices that have beneficial effects without adverse effects that can reduce performance and productivity.

The study endpoints included allergic rhinitis, specific nose and eye symptoms, and non–disease-specific quality-of-life changes. The combined symptom severity percent changes in RQLQ, the primary endpoint, indicated a statistically significant reduction in allergic rhinitis symptoms in the homeopathic group compared with the placebo group. The patients who received the combination allergens specific to the Southwest region, prepared using homeopathic 6X dilutions, showed a reduction in allergic rhinitis symptoms and improved overall functional quality of life, as well as better overall work performance. The combined positive changes in the mental health and health transition scales of the MOS SF-36, activity and work performance on the WPAI, and the RQLQ symptom improvement suggest that the patients in the homeopathy group may be experiencing better quality of life overall and/or more positive personal outlook on their health condition.

Improvement of symptoms was also noted in the placebo group for the non-nose/eye symptoms and emotional function domains of the RQLQ. These positive findings in the placebo group underscore the point that the placebo effect is not static and may interact synergistically within the therapeutic milieu.[23] Positive findings have been noted in placebo groups in other studies of seasonal or perennial allergic rhinitis in both homeopathic and conventional drug clinical trials.[24,25] In like manner, the improvement in symptoms noted for the homeopathy group in our study replicates findings from several randomized, placebo-controlled clinical trials using homeopathic interventions. Notably, a 6-week randomized, double-blind equivalence trial using the RQLQ as the main outcome measure found a combination homeopathic nasal spray to be as effective as conventional treatment with cromolyn sodium.[26] The RQLQ total symptoms decreased by 35% in the homeopathic group versus 44% in the cromolyn sodium group.

A precedent for testing mixed allergens as homeopathic isodes in a randomized controlled trial was set by Reilly et al.[27] in 1986. The statistically significant reductions in allergic rhinitis VAS measurements were demonstrated in patient-reported ($p = 0.02$) and physician-assessed ($p = 0.05$) outcomes. Two other studies investigated the homeopathic treatment of seasonal allergic rhinitis, but did not use a mixed pollen preparation. Instead, patients were given a placebo or a 30C preparation of the single allergen that provoked the most significant allergic reaction according to a skin weal test.[25,28] The Reilly et al.[28] trial in 1994 found a statistically significant ($p = 0.003$) difference in allergy symptoms VAS scores in favor of homeopathic treatment compared with placebo. Taylor et al.[25] did not find significant differences in rhinitis symptoms VAS scores after 4 weeks of treatment in the homeopathy group compared with the placebo group ($p = 0.82$), but did find significant objective improvement in nasal airflow in the homeopathy group ($p = 0.0001$).

It is interesting to note that the greatest improvement in functional quality of life in the homeopathy group was in the role emotional and mental health domains on the SF-36. One study suggested a link between atopic disorders and depression.[29] Other studies have demonstrated an increased prevalence of reported hay fever, asthma, or both in psychiatric clients with mood disorders and their first-degree relatives.[30,31] Sugarman et al.[32] observed

Table 3. Mean Changes for the MOS SF-36 Functional Quality of Life

Parameter	Homeopathic Group		Placebo Group	
	Mean Change	p Value[a]	Mean Change	p Value[a]
MOS SF-36				
physical functioning	2.78	NS	1.67	NS
role physical	9.26	NS	5.56	NS
bodily pain	3.70	NS	3.62	NS
general health	5.44	NS	6.20	NS
vitality	3.11	NS	7.29	NS
social functioning	5.00	NS	5.76	NS
role emotional	12.50	0.01	6.52	NS
mental health	8.44	0.02	3.78	NS
reported health transition	7.40	0.04	2.40	NS

MOS SF-36 = Medical Outcomes Study Short Form-36.
[a]Within-group differences of homeopathic and placebo groups' significance evaluated using the Student's paired *t*-test. The changes were considered significant at $p < 0.05$.

that clinically depressed individuals in an inpatient setting had more IgE antibodies to specific allergens compared with alcoholic and schizophrenic patients, as well as controls. The findings for improved mental health status in patients with allergic rhinitis using homeopathic preparation of combination allergens support an association between allergic rhinitis and mood that deserves further study using atopic biomarkers, such as changes in IgE levels, in combination with standardized measures of mood such as the Beck Depression Inventory or the Positive and Negative Affect Scale.[33,34]

Clinical significance must also address adverse effects in addition to outcome. Many of the conventional drug treatments available for allergic rhinitis also have numerous adverse effects, including drowsiness, sedation, headache, and fatigue, which have not been observed in clinical trials of homeopathic remedies.[4,5] The estimated cost for a one-month supply of the homeopathic intervention S.W. Desert Mix is $12.60 (retail price obtained from a health food store in Scottsdale, AZ). Compared with the conventional drug therapies listed in Table 4, this alternative therapy may serve as a viable cost-effective, as well as safe, treatment option.[35,36]

Immunotherapy shares some similarities with homeopathy. Both treatment modalities use dilute concentrations of substances that have demonstrated positive outcomes in symptomatic relief. The implementation and final preparation of these dilutions, however, differ considerably between immunotherapy and homeopathic drugs. It would be of interest to measure IgE and T-helper 1:2 ratios in patients who responded to homeopathic therapy to see how they compare with subcutaneous immunotherapy. Immunotherapy has been shown to reduce progression of allergic rhinitis to more chronic and persistent disease, such as asthma, potentially increasing the utility of immunotherapy in children.[34] Unless isopathic homeopathy can show comparable results, however, it cannot be expected to provide protection against chronic disease, such as that provided by subcutaneous immunotherapy.

Table 4. Estimated Cost of Drugs for Allergic Rhinitis

Drugs[a]	Cost for 4-Wk Supply ($)[b]
Antihistamines	
chlorpheniramine 24 tablets ($6.99)	17.50
diphenhydramine 24 count ($4.99)	20.00
clemastine 16 tablets ($7.99)	22.46
loratadine 10 tablets ($12.99)	9.00
fexofenadine ($74.99)	74.99
cetirizine ($61.99)	61.99
azelastine ($63.99)	63.99
Decongestants	
pseudoephedrine 48 count ($4.99)	24.95
Corticosteroids (3–5 days)	
naphazoline 15-mL bottle ($20.99)	20.99
oxymetolazone 1 bottle ($8.99)	8.99
Mast-cell stabilizers	
cromolyn sodium 0.78-oz bottle ($16.99)	16.99
ipratropium bromide 30-mL bottle ($62.99)	62.99

[a]Treatment guidelines from reference 35.
[b]Information taken from Walgreens online.[36]

Conclusions

Findings from this study suggest that homeopathic remedies in isodes offer convenient and inexpensive therapy without the potential for adverse effects of immunotherapeutic approaches and problematic adverse effects associated with the use of other conventional drug treatments for allergy symptoms. Studies directly comparing treatment outcomes of conventional and homeopathic treatment of allergic rhinitis could be valuable in demonstrating cost-savings in both monetary and quality-of-life parameters and need to be explored further. Inclusion of overall satisfaction evaluation of the study intervention, such as patient global assessment of response to therapy and disease status (allergic rhinitis), should be considered for future studies.

Outcomes-based clinical trials with emphasis on practical patient-care research designs can also provide more efficacy data on combination homeopathic drugs and other alternative therapies. One approach to conducting homeopathic clinical research can be done by collaborations between healthcare practitioners and licensed homeopaths. These collaborations can build the bridge between evidence-based practice in complementary and alternative approaches and conventional medicine that can support best practices in the provision of integrated health care.

Replication and further research will be needed to confirm the findings presented in this study in addition to exploring other combination allergen homeopathic preparations for seasonal allergies and related symptoms. This study provides encouraging results to follow up with larger patient populations and categories of symptoms severity, moderate to severe, in controlled environments.

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References

1. Jahnz-Rozyk K, Targowski T, Glodzinska-Wyszogrodzka E, Plusa T. Cc-chemokine eotaxin as a marker of efficacy of specific immunotherapy in patients with intermittent IgE-mediated allergic rhinoconjunctivitis. Allergy 2003;58:595-601.
2. Schoenwetter WF, Dupclay L Jr, Appajosyula S, Botteman MF, Pashos CL. Economic impact and quality-of-life burden of allergic rhinitis. Curr Med Res Opin 2004;20:305-17.
3. Stempel DA, Woolf R. The cost of treating allergic rhinitis. Curr Allergy Asthma Rep 2002;2:223-30.
4. Berger WE. Treatment update: allergic rhinitis. Allergy Asthma Proc 2001;22:191-8.
5. Schulz A, Stuck BA, Feuring M, Hormann K, Wehling M. Novel approaches in the treatment of allergic rhinitis. Curr Opin Allergy Clin Immunol 2003;3:21-7.
6. Portnoy JM. Immunotherapy for inhalant allergies (guidelines for why, when, and how to use this treatment). Postgrad Med 2001;109:89-106.
7. Donahue JG, Greineder DK, Connor-Lacke L, Canning CF, Platt R. Utilization and cost of immunotherapy for allergic asthma and rhinitis. Ann Allergy Asthma Immunol 1999;82:339-47.
8. Hahnemann S, Kunzli J, Naudé A, Pendleton P. Organon of medicine. 6th ed. [translation]. Baline, WA: Cooper Publishing, 1982.
9. Riedlinger J, Lennihan B. Homeopathic remedies. In: Berardi RR, ed. Handbook of nonprescription drugs: an interactive approach to self-care. 13th ed. Washington, DC: American Pharmaceutical Association, 2002:1101-29.
10. Homeopathic pharmacopoeia of the United States. Southeastern, PA: Homeopathic Pharmacopoeia Convention of the United States, 2003.
11. Yasgur J. Yasgur's homeopathic dictionary and holistic health reference. 4th ed. Greenville, PA: Van Hoy Publishers, 1998:112-3.
12. Linde K, Clausius N, Ramirez G, Melchart D, Eitel F, Hedges LV, et al. Are the clinical effects of homeopathy placebo effects? A meta-analysis of placebo-controlled trials. Lancet 1997;350:834-43.
13. Juniper EF. Measuring health-related quality of life in rhinitis. J Allergy Clin Immunol 1997;99:S742-9.
14. de Graaf-in 't Veld T, Koenders S, Garrelds IM, Gerth van Wijk R. The relationships between nasal hyperreactivity, quality of life, and nasal symptoms in patients with perennial allergic rhinitis. J Allergy Clin Immunol 1996;98:508-13.
15. Meltzer EO, Casale TB, Nathan RA, Thompson AK. Once-daily fexofenadine HCl improves quality of life and reduces work and activity impairment in patients with seasonal allergic rhinitis. Ann Allergy Asthma Immunol 1999;83:311-7.
16. Thompson AK, Finn AF, Schoenwetter WF. Effect of 60 mg twice-daily fexofenadine HCl on quality of life, work and classroom productivity, and regular activity in patients with chronic idiopathic urticaria. J Am Acad Dermatol 2000;43:24-30.
17. Reilly MC, Zbrozek AS, Dukes EM. The validity and reproducibility of a work productivity and activity impairment instrument. Pharmacoeconomics 1993;4:353-65.
18. McHorney CA, Ware JE Jr, Lu JF, Sherbourne CD. The MOS 36-item Short-Form Health Survey (SF-36): III. Tests of data quality, scaling assumptions and reliability across diverse patient groups. Med Care 1994;32:40-66.
19. Baldwin CM, Griffith DA, Nieto FJ, O'Connor GT, Walsleben JA, Redline SR. The association of sleep disordered breathing and sleep symptoms with quality of life in the Sleep Heart Health Study. Sleep 2001;24:96-105.
20. Hauser W, Zimmer C, Schiedermaier P, Grandt D. Biopsychosocial predictors of health-related quality of life in patients with chronic hepatitis C. Psychosom Med 2004;66:954-8.
21. Derebery MJ, Berliner KI. Allergy and health-related quality of life. Otolaryngol Head Neck Surg 2000;123:393-9.
22. Ellis AK, Day JH, Lundie MJ. Impact on quality of life during an allergen challenge research trial. Ann Allergy Asthma Immunol 1999;83:33-9.
23. Bootzin RR, Caspi O. Explanatory mechanisms for placebo effects: cognition, personality and social learning. In: Guess HA, Kleinman A, Kusek JK, Engel LW, eds. The science of the placebo. London: BMJ Books, 2001:108-32.
24. Bernstein DI, Levy AL, Hampel FC, Baidoo CA, Cook CK, Philpot EE, et al. Treatment with intranasal fluticasone propionate significantly improves ocular symptoms in patients with seasonal allergic rhinitis. Clin Exp Allergy 2004;34:952-7.
25. Taylor MA, Reilly D, Llewellyn-Jones RH, McSharry C, Aitchison TC. Randomised controlled trial of homoeopathy versus placebo in perennial allergic rhinitis with overview of four trial series. BMJ 2000;321:471-6.
26. Weiser M, Gegenheimer LH, Klein P. A randomized equivalence trial comparing the efficacy and safety of Luffa comp.-Heel nasal spray with cromolyn sodium spray in the treatment of seasonal allergic rhinitis. Forsch Komplementarmed 1999;6:142-8.
27. Reilly DT, Taylor MA, McSharry C, Aitchison T. Is homoeopathy a placebo response? Controlled trial of homoeopathic potency, with pollen in hayfever as model. Lancet 1986;2:881-6.
28. Reilly D, Taylor MA, Beattie NG, Campbell JH, McSharry C, Aitchison TC, et al. Is evidence for homoeopathy reproducible? Lancet 1994;344:1601-6.
29. Bavbek S, Kumbasar H, Tugcu H, Misirligil Z. Psychological status of patients with seasonal and perennial allergic rhinitis. J Investig Allergol Clin Immunol 2002;12:204-10.
30. Nasr S, Altman EG, Meltzer HY. Concordance of atopic and affective disorders. J Affect Dis 1981;3:291-6.
31. Ossofsky HJ. Affective and atopic disorders and cyclic AMP. Compr Psychiatry 1976;17:335-46.
32. Sugarman AA, Southern DL, Curran JF. A study of antibody levels in alcoholic, depressive and schizophrenic patients. Ann Allergy 1982;48:166-71.
33. Beck AT. Depression: causes and treatment. Philadelphia, PA: University of Pennsylvania Press, 1972.
34. Watson D, Clark L, Tellegen A. Development and validation of brief measure of positive and negative affect: The PANAS Scales. J Pers Soc Psychol 1988;54:1063-70.
35. May JR. Allergic rhinitis. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, eds. Pharmacotherapy: a pathophysiologic approach. 5th ed. McGraw-Hill Publishing, 2002:1679-87.
36. Walgreens online. www.walgreens.com/library/finddrug/druginfosearch.jhtml (accessed 2004 Oct 11).

EXTRACTO

TRASFONDO: Estudios que han utilizado homeopatía han reportado efectos beneficiosos en el tratamiento de condiciones relacionadas a alergia.

OBJETIVO: Este estudio investiga los efectos de un medicamento homeopático preparado con alergenos comunes (árboles, pasto, y especies de semillas) específicas de la región suroeste.

MÉTODOS: Se realizó un estudio clínico de 4 semanas, doble ciego, controlado con placebo en el área metropolitana de Phoenix de febrero a mayo, durante la estación de alergia en la región. Se incluyeron 40 sujetos, hombres y mujeres, de 26 a 63 años de edad, diagnosticados con síntomas moderados a severos de rinitis alérgica estacional, admitidos al estudio para evaluar los efectos del medicamento homeopático comparado con placebo. Los resultados del estudio evaluarían síntomas específicos de alergia utilizando el cuestionario de calidad de vida de rinoconjuntivitis (CCVR), calidad de vida funcional utilizando el cuestionario MOS SF-36, y el cuestionario de productividad e impedimento en el trabajo (PIT).

RESULTADOS: Las escalas de CCVR, MOS SF-36, y PIT demostraron cambios significativos entre los valores de base y a las 4 semanas en el grupo de homeopatía comparado con el grupo placebo ($p < 0.05$). Los pacientes no reportaron efectos adversos durante el período de intervención.

CONCLUSIONES: Estos hallazgos preliminares indican un beneficio potencial de la intervención homeopática en reducir los síntomas y mejorar la calidad de vida en pacientes con rinitis alérgica estacional en el suroeste de los Estados Unidos.

Annette Pérez

RÉSUMÉ

ÉTAT DES CONNAISSANCES: Des effets bénéfiques pour traiter des conditions reliées à l'allergie ont été démontrés dans des études utilisant l'homéopathie.

OBJECTIF: Près de 24 millions d'américains souffrent de rhinite allergique. Cette étude a investigué les effets d'un médicament homéopathique préparé à partir d'allergènes fréquents (arbre, herbe, espèces de mauvaise herbe) spécifiques à la région du sud-ouest américain.

MÉTHODOLOGIE: Un essai clinique contrôlé avec placebo et en double aveugle d'une durée de 4 semaines a été réalisé dans la région métropolitaine de Phoenix durant la saison régionale des allergies de février à mai. Quarante hommes et femmes âgés entre 26 et 63 ans présentant des symptômes modérés à graves de rhinite allergique saisonnière ont été enrôlés pour évaluer les effets d'un médicament homéopathique comparés au placebo. Les résultats de l'étude incluent les symptômes spécifiques d'allergie en utilisant un questionnaire de qualité de vie en présence de rhinoconjonctivite, la qualité de vie fonctionnelle en utilisant le MOS SF-36, et un questionnaire sur la productivité et l'affaiblissement au travail.

RÉSULTATS: Les échelles des différents questionnaires ont démontré des changements positifs significatifs durant les 4 semaines dans le groupe utilisant le médicament homéopathique par rapport au groupe utilisant le placebo. Les patients n'ont signalé aucun effet indésirable durant la période d'intervention.

CONCLUSIONS: Ces résultats préliminaires indiquent des bénéfices potentiels d'une intervention homéopathique pour réduire les symptômes et améliorer la qualité de vie des patients souffrant de rhinite allergique saisonnière dans la région du sud-ouest des Etats-Unis.

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