

ARIA update: I—Systematic review of complementary and alternative medicine for rhinitis and asthma

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Complementary-alternative medicines are extensively used in the treatment of allergic rhinitis and asthma, but evidence-based recommendations are lacking. To provide evidence-based recommendations, the literature was searched by using MedLine and the Cochrane Library to March 2005 (Key words: Asthma [OR] Rhinitis, [AND] Complementary [OR] Alternative Medicine, [OR] Herbal, [OR] Acupuncture, [OR] Homeopathy, [OR] Alternative Treatment). Randomized trials, preferably double-blind and published in English, were selected. The articles were evaluated by a panel of experts. Quality of reporting was assessed by using the scale validated by Jadad. The methodology of clinical trials with complementary-alternative medicine was frequently inadequate. Meta-analyses provided no clear evidence for the efficacy of acupuncture in rhinitis and asthma. Some positive results were described with homeopathy in good-quality trials in rhinitis, but a number of

negative studies were also found. Therefore it is not possible to provide evidence-based recommendations for homeopathy in the treatment of allergic rhinitis, and further trials are needed. A limited number of studies of herbal remedies showed some efficacy in rhinitis and asthma, but the studies were too few to make recommendations. There are also unresolved safety concerns. Therapeutic efficacy of complementary-alternative treatments for rhinitis and asthma is not supported by currently available evidence. (J Allergy Clin Immunol 2006;117:1054-62.)

Key words: Complementary-alternative medicine, asthma, rhinitis

In Western countries, for cultural and historical reasons, medical approaches that differ from conventional medicine are grouped under the term *alternative medicines*. Some of these techniques have a millenary history and represent the traditional medicine in many countries. Therefore the term *complementary-alternative medicine* (CAM) is preferred because it does not imply a negative judgment. There are numerous CAM techniques, and their number has even increased over the last years with the introduction of new holistic approaches. A list of the CAMs is included in Table I.

Allergy and allergic diseases, including asthma and rhinitis, are frequently treated with CAMs, where homeopathy, acupuncture, herbal medicines, and yoga are the most used techniques. Recent studies report that 25% to 50% (up to 70%) of the general population currently use or have used CAMs on at least one occasion,¹⁻⁶ and similar figures have been reported in children.⁷ Complementary-alternative techniques are also used for diagnostic purposes, despite limited evidence.⁸ Some of the reasons for using CAMs include the distrust of conventional scientifically based medicine, the lack of a satisfactory physician-patient interaction, and the belief that CAMs are safe (devoid of side effects) products-procedures.^{5,8}

Recommendations for the use of CAMs should be based only on rigorous proof of efficacy derived from high-quality studies because there is considerable cost (to patients and health care systems) and the potential for risks (eg, malpractice, incorrect prescription, and drug

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Abbreviations used

CAM: Complementary-alternative medicine
DBPC: Double-blind, placebo-controlled
QOL: Quality of life

interactions) incurred by their use in a non-evidenced-based approach. Thus it was believed that a detailed analysis of the experimental evidence concerning the clinical use of CAMs in asthma and rhinitis was needed.

METHODS

To provide evidence-based recommendations, the available literature was searched with MedLine up to September 2005 (key words: Asthma [OR] Rhinitis, [AND] Complementary [OR] Alternative Medicine, [OR] Herbal, [OR] Acupuncture, [OR] Homeopathy, [OR] Alternative Treatment). Randomized trials, preferably double-blind and published in English, were selected, including all interventions in which CAMs were used. The Cochrane Library was also searched. The reference lists of all selected articles were reviewed, and all members of the group were asked to identify relevant articles possibly not included in the search.

Quality of reporting was assessed by using the scale developed and validated by Jadad et al (Table II).⁹ This scoring system takes into account the most relevant characteristics of a clinical trial, which are randomization and blinding. Two points are given, respectively, to correct random allocation and to correct blinding, and 1 point is given if description of dropouts and withdrawals is provided. Thus the maximum score is 5, and a score of at least 3 indicates an adequate methodology. The strength of the evidence of the studies was then evaluated by using the recommendations by Shekelle et al.¹⁰

ACUPUNCTURE

Acupuncture is part of traditional Chinese medicine and is widely used for the treatment of chronic illnesses, including asthma. The theory behind the use of acupuncture is to restore the balance of “vital flows” by inserting needles at exact points of the body surface, where the “meridians” of these flows lie. Stimulation of the specific points can also be made with pressure or laser application. Acupuncture can be studied in a rigorous manner by using sham acupuncture as a control procedure.¹¹ The efficacy of acupuncture in asthma has been evaluated in several randomized controlled trials.¹²⁻²⁴ Few data are available for rhinitis.

One of the first systematic reviews of acupuncture in asthma was conducted by Kleijnen et al in 1991.¹¹ In that review 13 controlled studies were considered (6 double-blind and 7 single-blind studies). Four of the double-blind studies were negative, and 6 of the single-blind studies were positive. On the basis of the methodologic quality of the studies, the authors concluded more than 10 years ago that beneficial effects of acupuncture were more likely to be found in the low-quality studies (small sample, not randomized, and inadequate analysis). Looking at the available literature (Table III),¹²⁻²⁸ many studies have an inadequate methodology (ie, a Jadad score of less than 3).

TABLE I. Complementary-alternative medicines

Physical techniques	Systematic medicines	Other
Acupuncture	Anthroposophy	Bioresonance
Balneotherapy	Indian (Ayurveda)	Chromotherapy
Breathing control	Japanese (Kampo)	Enemotherapy
Chiropractic	Sciamanic medicine	Homeopathy
Massage	Traditional Chinese medicine	Hopi candles
Osteopathy		Hypnosis
Spinal manipulation	Behavioral	Iridology
Yoga	Biofeedback	Kinesiology
	Clinical ecology	Prayer
Phytotherapy	Dissociated diets	Reflexology
Aromatherapy		Speleotherapy
Bach’s flowers		Urine therapy
Herbal medicine		

TABLE II. Scoring system of trials according to Jadad et al⁹

Question	Score
1 Study described as randomized (including the words “random,” “randomization,” “randomly”)?	Yes = 1, no = 0
2 Study described as double-blind?	Yes = 1, no = 0
3 Withdrawals and dropouts described?	Yes = 1, no = 0
4 Method of randomization described and appropriate? Appropriate—tables of random numbers, computer-generated sequences Not appropriate—alternate allocation, birth date	Yes = 1, no = 0
5 Method of double-blinding described and appropriate?	Yes = 1, no = 0

On the other hand, some studies in asthma¹⁶⁻²⁴ were of good methodologic quality, but the majority of them showed no difference between active and sham intervention. Medici et al¹⁹ found a decrease in blood eosinophils in the active group and a transient clinical improvement. Christensen et al²⁴ described an overall clinical improvement with acupuncture. A systematic review of the clinical trials, including non-English articles, concluded that there was insufficient evidence for the efficacy of acupuncture in asthma.²⁹ The 2004 Cochrane review^{30,31} included 11 studies with 324 participants. Trial reporting was poor, and quality was judged inadequate. The conclusion of this meta-analysis was that acupuncture is not an effective treatment of asthma.

The majority of the studies with acupuncture in allergic rhinitis (often in Chinese language) are not randomized, controlled, or descriptive.^{29,32} A randomized controlled trial failed to demonstrate a protective effect of acupuncture³³ against exposure to allergen in a challenge chamber. Another nonrandomized study in nonallergic rhinitis found no difference in nasal airflow and symptoms between acupuncture and electrostimulation.²⁵ One randomized crossover trial²⁶ in seasonal rhinitis with poor methodologic quality showed that acupuncture significantly reduced symptoms without changing the need for rescue

TABLE III. Studies of acupuncture

Author	Disease	Design and control	No. of patients*	Duration	Jadad score	Main results
Medici et al ¹⁹	A	PG Sham acupuncture	64 (66)	16 wk	5	No clinical difference among real, sham, and placebo; transient ↓ in PEF variability; ↓ in blood eosinophils in real vs sham
Malmstrom et al ¹⁸	A	PG Mock TENS	24 (27)	15 wk	5	No effect on isocapnic hyperventilation with both treatments
Ng et al ²⁸	R	PG Sham acupuncture	72 (85)	8 + 12 wk	3	↓ Symptom-free days, ↓ symptom score only in the follow-up phase; no change in drug use
Biernacki and Peake ¹⁶	A	XO Sham acupuncture	22 (23)	1 d	4	Improved QOL and ↓ use of bronchodilators with both sham and real intervention
Shapira et al ²⁰	A	XO Sham acupuncture	23 (23)	3 wk	4	No effect on PEF, FEV ₁ , use of β ₂ -agonists, and methacholine challenge
Tandon et al ²²	A	XO Sham acupuncture	15	5 wk	4	No difference in PEF, FEV ₁ , use of β ₂ -agonists, and asthma score between groups
Christensen et al ²⁴	A	PG Sham acupuncture	18	5 wk	3	↓ Symptoms and use of bronchodilators in the active group
Williamson et al ²⁷	R	PG Sham acupuncture	102 (102)	4 wk	3	No difference in symptoms and use of rescue medications between groups
Tashkin et al ²¹	A	XO Sham acupuncture	25	4 wk	3	No difference in FEV ₁ , use of β ₂ -agonists, and asthma score between groups
Gruber et al ¹⁷	A	XO Sham acupuncture	44 (44)	1 d	3	No effect on isocapnic hyperventilation
Joos et al ²³	A	PG Sham acupuncture	36 (38)	4 wk	3	No difference in pulmonary function and self-assessment; ↓ use of bronchodilators in both groups
Dias et al ¹⁵	A	No treatment	20 (20)	2 wk	2	Improvement in PEF in active group
Mitchell and Wells ¹⁴	A	No treatment	31	6 mo	2	No difference between groups
Morton et al ¹³	A	PG Sham acupuncture	17	1 d	2	No effect on exercise-induced asthma
Xue et al ²⁶	R	XO Sham acupuncture	26 (30)	4 wk	2	↓ Symptom score only in the active group, no change in medication score
Fung et al ¹²	A	PG Sham acupuncture	19 (19)	1 d	1	Protection against exercise-induced bronchoconstriction
Davies et al ²⁵	R	Sham acupuncture Electrostimulation	10 (13)	1 d	0	No difference in nasal flow and visual analog scale between real and sham acupuncture and electrostimulation

A, Asthma; PG, parallel group; ↓, decrease; PEF, peak expiratory flow; TENS, transcutaneous electrical nerve stimulation; R, rhinitis; XO, cross-over.
*Completed (enrolled).

medications. Another randomized controlled trial failed to demonstrate a clinical difference (symptoms and rescue medications) between real and sham acupuncture.²⁷ One controlled clinical trial²⁸ in children with perennial allergic rhinitis (3-month treatment plus 3-month follow-up) reported a significant improvement in daily symptoms (limited to the follow-up period) and an increase of symptom-free days in the active group with no change in the use of symptomatic medications.

HERBAL MEDICINES (HERBALISM OR PHYTOTHERAPY)

Information on studies with herbal medicines can be found in Table IV.³⁴⁻⁵¹

Drugs derived from plants and herbs are used commonly in medicine (eg, theophylline, ephedrine, digitalis,

and morphine). Some medical systems (traditional Chinese medicine, Japanese, Kampo, and Ayurvedic) largely use herbs, often in fixed mixtures (eg, *ma huang* and *saiboku-to*) to treat diseases, including asthma and rhinitis.

There are some studies, done between 1968 and 1979, with *Tylophora indica* (Indian ipecac) in asthma³⁴⁻³⁶ that report positive results and one that fails to demonstrate any positive effect.³⁷ No further studies with *T indica* have been published since 1979. One double-blind, placebo-controlled (DBPC) study performed in asthmatic subjects showed that the gum resin *Boswellia serrata* (a component of Ayurvedic remedies) significantly improved symptoms and FEV₁ after a 6-week course.³⁸ One controlled study reported negative results with *Picrorrhiza kurroa* in asthma.³⁹ Two studies reported that *saiboku-to* (TJ96) improved symptoms, exerted a glucocorticosteroid-sparing effect, reduced bronchial responsiveness, and decreased sputum eosinophils in asthmatic patients,^{40,41} but the

TABLE IV. Studies of herbal remedies

Author	Disease	Treatment	Control	No. of patients*	Jadad score	Main results
Schapowal et al ⁵¹	R	Butterbur, 50 mg twice daily	Cetirizine, 10 mg/placebo	125	5	Butterbur = cetirizine, both effective
Hu et al ⁴⁶	R	Biminne	Placebo	50 (58)	5	Effective on symptoms
Xue et al ⁴⁵	R	Chinese herb mix	Placebo	49 (55)	5	Effective on clinical symptoms and QOL
Wen et al ⁴³	A	Chinese herb mix	Prednisone, 20 mg daily	91 (92)	4	↓ Symptoms, ↑ FEV ₁ , ↓ bronchodilator significant in both groups
Hsu et al ⁴⁴	A	Chinese MMDT, 2 doses	Placebo	69 (90)	4	↓ Symptoms, ↑ FEV ₁ , ↓ bronchodilator significant with both dosages vs placebo
Mathew and Shipvuri ³⁵	A	<i>Tylophora indica</i>	Placebo	123	4	↓ Symptoms, ↑ FEV ₁
Gray et al ⁴⁹	R	Butterbur, 50 mg twice daily	Placebo	35 (35)	4	No difference between active and placebo in peak nasal inspiratory flow, symptoms, and QOL
Bernstein et al ⁴⁷	R	Grapeseed	Placebo	41 (44)	3	Not effective
Brinkhaus et al ⁵⁰	R	Chinese herbs plus acupuncture	Placebo plus sham acupuncture	52 (56)	3	Significant improvement in symptom score and rhinitis-related QOL
Doshi et al ³⁹	A	<i>Picrorrhiza kurroa</i>	Placebo	72	3	Not effective
Urata et al ⁴¹	A	TJ96	Placebo	33	3	↓ Symptoms, ↓ blood and sputum eosinophils and methacholine reactivity
Thiruveadam et al ³⁶	A	<i>Tylophora indica</i>	Drug therapy	30	3	↓ Symptoms, no statistics for lung function
Shipvuri et al ³⁴	A	<i>Tylophora indica</i>	Placebo	166 (195)	3	Significant improvement of symptoms
Lee et al ⁴⁸	R	Butterbur, 50 mg twice daily	Fexofenadine, 180 mg/placebo	16	3	↓ Symptom score and adenosine monophosphate reactivity with both fexofenadine and butterbur
Egashira and Hagano ⁴⁰	A	TJ96 plus drugs	Drugs only	110 (112)	2	Improvement of symptom score
Gupta et al ³⁷	A	<i>Tylophora indica</i>	Placebo	135	2	No effect on lung function and symptoms
Gupta et al ³⁸	A	<i>Boswellia serrata</i>	Lactose	80 (80)	2	↓ Symptoms, ↑ FEV ₁
Lee et al ⁴²	A	Butterbur, 50 mg twice daily	Placebo	16	2	↓ Blood eosinophils, exhaled NO, and adenosine reactivity

R, Rhinitis; A, Asthma; ↓, decrease; ↑, increase; NO, nitric oxide.

*Completed (enrolled).

quality of these studies was low. *Coleus forskolli* is an Indian herb the active ingredient of which, forskoline, has mild bronchodilator properties. One study has shown that *C forskolli* is superior to placebo and equivalent to fenoterol in protecting against methacholine-induced bronchoconstriction,⁵² but the study was conducted in healthy subjects. There is also one study with butterbur (*Petasites hybridus*) in asthma showing a reduction of exhaled nitric oxide and bronchial response to adenosine monophosphate.⁴² Wen et al,⁴³ in a double-blind fashion, compared a mix of 3 Chinese herbs and oral prednisone in 91 patients with moderate-severe asthma and found that both interventions significantly improved clinical symptoms and functional parameters, with prednisone being slightly more effective. Similar results were obtained in a randomized controlled pediatric study⁴⁴ that compared the effects of 2 doses of the Chinese formula *Mai-Men-Don-Tang* and placebo added to pharmacologic treatment. Despite such positive results, there are often methodologic flaws in studies with herbs, and a meta-analysis concluded that there is still no convincing evidence of their efficacy in asthma.⁵³ There have been some controlled studies performed in rhinitis. One study

on seasonal rhinitis found that a mixture of 18 Chinese herbs was significantly better than placebo in terms of symptoms and quality of life (QOL).⁴⁵ Another study on perennial rhinitis found statistically significant effects of the Chinese herb formulation biminne.⁴⁶ One double-blind, randomized controlled trial found that grapeseed extract (100 mg twice daily) was no more effective than placebo for ragweed-induced rhinitis.⁴⁷ Two clinical trials have been conducted with butterbur extract in rhinitis. The first⁵¹ compared 100 mg of butterbur and 10 mg of cetirizine daily and found that both treatments were equally effective, as determined on the basis of symptom scores and QOL. The second study,⁴⁸ performed in perennial rhinitis, confirmed that butterbur was equivalent to fexofenadine in controlling symptoms. On the other hand, a recent randomized, placebo-controlled study failed to detect any significant effect of butterbur on symptoms and nasal inspiratory peak flow in intermittent rhinitis.⁴⁹ Finally, one single-blind study with combined acupuncture plus a mixture of Chinese herbs found a significant effect on symptom scores and QOL in seasonal allergic rhinitis compared with the effect of sham acupuncture plus nonspecific herbs.⁵⁰

TABLE V. Studies of homeopathy

Author	Disease	Treatment	Control	No. of patients*	Jadad score	Main results
Aabel et al ⁶⁶	R	Birch 30c	Placebo	66 (70)	5	No effect on symptoms
Aabel ⁶⁷	R	Birch 30c	Placebo	73 (80)	5	No effect on symptoms
Lewith et al ⁶⁰	A	Dust mite homeopathy	Placebo	186 (242)	5	No difference between active and placebo in FEV ₁ , PEF, symptoms, use of β_2 -agonists, and asthma score
Reilly et al ⁶³	R	30c dilution grass pollen	Placebo	155 (158)	5	↓ Symptom score, visual analog scale, and use of antihistamines
Taylor et al ⁶⁵	R	30c dilution of various allergens	Placebo	50 (51)	5	↑ PNIF morning and evening; no difference between groups in visual analog scale and symptom score
Weiser et al ⁶⁴	R	Nasal <i>Luffa compositum Heel</i>	Nasal cromone	135 (147)	5	Homeopathy = nasal cromone, both effective on symptoms
White et al ⁶¹	A	Individual homeopathy plus drugs	Placebo plus drugs	74 (93)	5	No difference between active and placebo in asthma-related QOL, PEF, use of β_2 -agonists, missing days
Kim et al ⁶⁸	R	Homeopathic grass, trees, weeds mix	Placebo	40 (40)	5	Significant improvement in active group in 3 QOL questionnaires; no mention of clinical symptoms
Reilly et al ⁵⁹	A	30c dilution of allergens	Placebo	24 (28)	4	No change in PEF, pulmonary function, and histamine challenge; significant improvement in the visual analog scale
Wiesenauer and Gaus ⁶²	R	<i>Galphimia</i> homeopathic dilution	Conventional dilution/placebo	104 (164)	4	No significant difference between active and placebo treatments

R, Rhinitis; A, asthma; PEF, peak expiratory flow; ↓, decrease; ↑, increase; PNIF, peak nasal inspiratory flow.

*Completed (enrolled).

Herbal remedies contain several active pharmacologic ingredients, and therefore it is not surprising that they might have some measurable clinical effect. However, for the same reasons, they are not completely devoid of side effects and pharmacologic interactions. Despite the common belief that phytotherapy is safe, there are numerous reports of side effects caused by herbal remedies,^{54,55} and the active principles contained in herbal preparations might also have important drug interactions. Finally, at variance with proprietary marketing drugs, herbal remedies carry the risk of adulteration, incorrect collection of plants, wrong preparation, and inappropriate and nonstandardized dosing.^{56,57}

HOMEOPATHY

Homeopathy, founded by Hahnemann at the beginning of the 1800s, relies on the principle that symptoms of a disease can be cured by the same substances that provoke them when they are ultradiluted. Homeopathic remedies are selected according to symptoms and prepared with a special technique (repeated dilutions with “potentiation”). Homeopathy is a holistic approach to medicine, with particular attention to the homeopath-patient relationship. The scientific interest in homeopathy for treating asthma, allergies, and other chronic illness is considerable, as attested to by the large number of publications.⁵⁸ There are several controlled trials of good methodologic quality for homeopathy in rhinitis and asthma (Table V).⁵⁹⁻⁶⁸

The 3 studies in asthmatic patients⁵⁹⁻⁶¹ conducted with good methodology showed no or marginal effects. Only one study⁵⁹ demonstrated an improvement in an asthma visual analog scale, although there were no accompanying changes in objective parameters. The Cochrane review on homeopathy in stable asthma concluded that “there is not enough evidence to reliably assess the possible role of homeopathy in asthma.”⁶⁹

There are several studies in rhinitis. Wiesenauer and Gaus⁶² compared the effects of a potentiated and a conventional dilution of *Galphimia glauca* to placebo for pollen-induced rhinitis, finding no significant difference between the 2 active treatments and placebo. Reilly et al⁶³ carried out the first DBPC study in seasonal allergic rhinitis, evaluating a visual analog scale and the concomitant use of antihistamines (chlorpheniramine), and found a significant difference in favor of homeopathy for both parameters. Another DBPC trial compared cromolyn and an intranasal homeopathic remedy (*Luffa compositum Heel*) in seasonal allergic rhinitis and found that both were equally effective.⁶⁴ Taylor et al⁶⁵ performed a DBPC study in 50 patients with perennial allergic rhinitis and demonstrated a significant improvement in nasal flow only in the active group. In this study, however, there was no difference in the symptomatic improvement recorded with a visual analog scale. A meta-analysis of 4 trials included in the article concluded in favor of homeopathy over placebo. A homeopathic dilution of birch pollen (“isopathy”) provided only a marginal effect in seasonal allergic rhinitis and even aggravated

TABLE VI. Studies of physical techniques

Author	Disease	Intervention	Control	No. of patients*	Jadad score	Main results
Balon et al ⁷⁴	A	Chiropractic	Sham chiropractic	80 (91)	5	Sham = real chiropractic for PEF, symptoms, and β_2 -agonist use
Cooper et al ⁷⁵	A	Buteyko breathing	PCLE Placebo PCLE	60 (89)	5	No effect on FEV ₁ , exacerbations, use of corticosteroids; ↓ symptoms and bronchodilators with yoga
Nielsen et al ⁷⁷	A	Chiropractic	Sham chiropractic	29 (31)	5	No difference between sham and verum in symptoms and function; ↓ response to methacholine in active
Korek et al ⁸³	R	UVA plus UVB plus visible light	Visible light	49 (49)	4	↓ Total symptom score; ↓ eosinophils, IL-5, and eosinophil cationic protein in nasal lavage
Manocha et al ⁷⁶	A	Sahaja yoga	Group therapy and relaxation	47 (59)	4	No effect on symptoms, use of rescue medications and asthma-related QOL; ↓ response to methacholine
Vedanthan et al ⁸¹	A	Yoga	No yoga	17	4	No effect
Sabina et al ⁸²	A	Yoga	Stretching	45 (62)	4	↓ Morning symptoms in both group; no difference between groups
Singh et al ⁷⁹	A	Pranayama yoga (PCLE)	Placebo PCLE	18 (22)	3	No difference between placebo and actual; ↓ response to bronchial histamine in active
Thomas et al ⁸⁰	A	Breathing retraining	Educational program	28 (33)	3	↑ In some domains of QOL only in the physiotherapy group
Neuman and Finkelstein ⁸⁴	R	Intranasal red light	Normal light	79 (79)	2	↓ Symptoms score and mucosal congestion (endoscopy)
Guiney et al ⁸⁵	A	Chiropractic	Sham chiropractic	150 (150)	2	↑ PEFr only in active group; no symptom evaluation
Birkel and Edgren ⁷⁸	A	Hatha yoga	None	287	0	↑ Vital capacity; not randomized

A, Asthma; PEF, peak expiratory flow; PCLE, Pink City Lung Exerciser (simulates yoga breathing); ↓, decrease; R, rhinitis; ↑, increase.
*Completed (enrolled).

symptoms during the pollen season.^{66,67} Finally, Kim et al,⁶⁸ in a placebo-controlled multicenter trial in seasonal rhinitis found a significant difference between the active and placebo groups, but only QOL questionnaires were used as outcome measures in this study.

Some reviews of the published trials, independent of the disease and the methodologic quality, conclude that some effect of homeopathy exists.^{30,70-72} Nevertheless, the measurable effects tend to be greater with smaller samples and in lower-quality trials.^{71,72} A recent review⁷³ compared more than 100 clinical trials of either homeopathy or conventional medicine matched for disease and outcome. After a detailed analysis of possible biases and confounding factors, this review concluded that evidence for a specific effect of homeopathy is weak, whereas such evidence is strong with conventional (“allopathic”) treatments.

PHYSICAL TECHNIQUES AND OTHER ALTERNATIVE TREATMENTS

Physical techniques (breathing control, breathing retraining, yoga, and chiropractic-spinal manipulation) are purported to relax the patient and improve the breathing pattern. There are several trials of physical techniques in asthma. (Table VI).⁷⁴⁻⁸⁵ Most of them failed to demonstrate a clinically relevant effect,^{74,75,81} or only marginal

benefits were achieved, usually on nonspecific bronchial hyperresponsiveness.^{76,77,79} However, breathing-retraining physiotherapy was shown to improve the QOL of patients with stable asthma.⁸⁰

On the basis of the experimental evidence, breathing retraining and yoga techniques can have a positive effect on self-perceived well-being and on QOL, thus providing an additional benefit. Nevertheless, because of the heterogeneity of the studies and the variable outcomes used, no reliable conclusions can be derived on the use of breathing exercises for asthma in clinical practice.^{86,87} There is no controlled study available for the so-called Alexander technique (postural exercises).⁸⁸ Manipulation techniques in asthma were found not to be effective in 2 Cochrane reviews,^{89,90} although one randomized study reported a significant improvement in peak expiratory flow in asthmatic children.⁸⁵ No study is available in allergic rhinitis.

Speleotherapy is a form of therapy used in some regions of central Europe and the Balkans, sharing some principles with thermal treatments. A systematic review of the studies performed with speleotherapy reported that the available evidence does not allow reliable conclusions as to whether speleotherapy is effective for the treatment of chronic asthma.⁹¹ Similarly, biofeedback techniques and hypnosis to treat asthma were systematically reviewed. The conclusion was that all studies were of poor quality and that they failed to demonstrate efficacy.^{92,93} There

TABLE VII. Strength of recommendation for CAMs in asthma and rhinitis

		Asthma	Rhinitis
Acupuncture		B	C
Homeopathy		C	B
Chiropractic		C	—
Yoga-breathing exercises		C	—
<i>Tylophora indica</i>		B	—
Butterbur		C	B
Biminne		—	B
Ma-huang		B	—
<i>Picrorrhiza kurroa</i>		C	—
Saiboku-to (TJ96)		B	—
Grapeseed		—	C
<i>Boswellia</i> gum		B	—
Intranasal red light		—	B
Aromatherapy, antroposophy, Bach's flowers, hypnosis, Hopi candles, reflexology		D	D

Category of evidence		Strength of recommendation	
Ia	Meta-analysis of randomized controlled trials	A	Directly based on category I
Ib	At least 1 randomized controlled trial		
IIa	At least 1 controlled trial without randomization	B	Directly based on category II or extrapolated from category I
IIb	At least 1 type of quasiexperimental study		
III	Nonexperimental descriptive studies	C	Directly based on category III or extrapolated from category I-II
IV	Expert opinions or committee reports	D	Directly based on category IV or extrapolated from category I-III

Data from Shekelle et al.¹⁰

are 2 controlled studies with phototherapy for rhinitis. The first used a narrow-band light intranasal therapy in perennial rhinitis. Active treatment produced a significant improvement of symptoms and endoscopic picture in 70% of patients, but the methodologic quality was poor.⁸⁴ Another randomized controlled trial⁸⁵ in seasonal allergic rhinitis reported that a combination of UV-B, UV-A, and visible light improved symptoms and decreased eosinophils in nasal lavage fluid.

There are no controlled randomized trials performed in rhinitis or asthma with the other forms of holistic medicine or procedures: aromatherapy, chromotherapy, Bach's flowers, antroposophy, Hopi candles, hydro-colon, urine therapy, clinical ecology, and iridology. Therefore these techniques cannot be considered for the treatment of rhinitis and asthma.

RECOMMENDATIONS AND CONCLUSION

Data on the strength of the recommendations for CAMs in asthma and rhinitis are shown in Table VII.¹⁰

CAM is widely practiced, and many patients who use it appear to be satisfied. From a scientific viewpoint, there is no definitive or convincing proof of efficacy for most CAMs in rhinitis or asthma. In general, the methods used to study them are often inadequate (ie, not randomized, not controlled, and not blinded, with no quantitative measurement).⁹⁴ Considering the randomized controlled trials, there is no clear evidence for the efficacy of acupuncture

in rhinitis and asthma. Some positive results were described in rhinitis with homeopathy in good-quality trials, but an equal number of negative studies counterbalance the positive ones. Therefore it is not possible to provide evidence-based recommendations for the use of homeopathy to treat allergic rhinitis, and further randomized controlled trials are needed. Some herbal remedies have proved effective in rhinitis or asthma, but the studies are too few to make recommendations, and there are safety and drug interaction concerns. In fact, herbal remedies are usually not sufficiently standardized and can also contain harmful substances,^{95,96} such as the ephedrine-containing remedies that have been banned in the United States.⁹⁷ A mandatory prerequisite for evaluating herbal remedies-mixtures is that method of preparation, doses, components, and active ingredients are clearly defined according to the World Health Organization guidelines.^{98,99} Some physical techniques (eg, yoga breathing or breath retraining) can provide an additional benefit in terms of perceived well-being, but they cannot be recommended as effective treatments for asthma.

The therapeutic efficacy of CAM treatments is not supported by currently available evidence. More data from randomized DBPC trials are required. In addition, CAMs might not be devoid of side effects, and some of them might interact with other medications.^{96,100}

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