



Integrative Medicine

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Allergic Rhinitis

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PATHOPHYSIOLOGY

In a patient considered to be "allergic," the mechanism of the allergic reactivity must be taken into account. By strict definition, an "allergy" is an immunoglobulin E (IgE)-mediated reaction with a complex of a specific antigen causing the release and generation of mediators of allergic inflammation.¹ However, many adverse reactions of different mechanisms may be generally regarded as "allergic," whereas the specific nature of the reaction may not be known. The "atopic" patient, however, is one with a genetic predisposition who manifests allergies following environmental exposure and sensitization.²

The spectrum of allergic reactivity ranges from allergic rhinitis, to asthma, to food and drug allergies and insect stings, to atopic dermatitis, to anaphylaxis. This chapter addresses the management of the "allergic patient" with upper respiratory allergies, especially allergic rhinitis. Asthma, atopic dermatitis, food "allergy," and sinusitis are covered in other chapters in this book.

The nose can be viewed as the window to the lungs, and allergic and inflammatory mechanisms studied in the lungs are often translated into treatments appropriate for study in the nose. So it is with asthma and rhinitis in evaluating the literature on integrative, complementary, and alternative medical approaches for the lower and upper respiratory tract.³ Optimally, each approach should be studied specifically in rhinitis with standardized parameters such as with a rhinitis quality-of-life questionnaire.⁴ However, the methods addressed herein are drawn from reports and reviews⁵⁻⁷ believed to meet the standard of "primum non nocere" (first do no harm) and creative application of art and science for respiratory health in the context of the whole patient.

The methods described here may be employed by primary caregivers, but if the patient wishes to explore alternative practices outside the medical model, a continued relationship with the patient can be supported with timely follow-up.⁸ Interest in,⁹ self-treatment with,¹⁰ practices of,¹¹ and demand for complementary and alternative medicine (CAM) for allergies and asthma are significant and in general are increasing.¹² Traditional allergists are also being encouraged to become more knowledgeable about alternative approaches and to meet

the challenge for redefining the specialty if CAM is proved to provide improved therapies for allergy and asthma.^{13, 14}

INTEGRATIVE THERAPY

Environmental Measures

Outdoor Exposure

Pollen precautions can be pursued during the pollen seasons. The sources of pollen are generally trees in the spring, grasses in the summer, and weeds in the fall in geographic regions with climate changes. Patients are advised to stay indoors with windows closed, to use air conditioning in homes and automobiles, and to purchase a HEPA (high-efficiency particulate air) filter for the home or workplace. Particulates in the air should be avoided if possible, and use of appropriate air filtration should be encouraged.¹⁵

Indoor Exposure

The increase in allergic reactivity as evidenced by the higher prevalence of asthma has been attributed in part to increased indoor sensitization associated with living and working in airtight buildings. House dust mite exposure in humid environments can be reduced by certain environmental precautions such as encasing the bedding and pillows with plastic and use of dehumidifiers in humid regions. During the winter, exposure to indoor allergens such as cat and dog dander is also increased. Frequent shampooing of cats is helpful to reducing ambient levels of allergens. Irritants such as tobacco smoke, wood smoke, chemical and gas fumes, and car exhaust should be specifically avoided. HEPA filters should be considered for the bedroom and main living areas of the home.

Humidification

Humidifiers can be used in dry climates to moisturize the respiratory passages. The goal should be a relative humidity of no greater than 35%, to discour-

age housedust mite proliferation. The humidifier can be cleaned with vinegar water.

Nasal Hygiene

One of the most helpful, inexpensive, nonpharmacologic approaches is to practice good "nasal hygiene," with frequent saline moisturization of the nasal mucosa to thin the mucus, to promote mucus evacuation, and to refresh the nasal mucosa. This concept is reviewed in detail elsewhere (see Chapter 12, Chronic Sinusitis).

The best way to clear the nasal discharge is to perform nasal washes with salt water (saline), as described in the accompanying box. Gargling with saline solution may also be beneficial.

METHOD

Nasal Moisturization and Irrigation

A saline solution is made fresh each day with 1 teaspoon of table salt and perhaps a pinch of baking soda added to a pint of warm water (preferably distilled), mixed in a clean glass or plastic bottle. At least 1 cup of the solution should be used. The patient is advised to experiment with the concentration according to preference. To make a smaller amount, 1/4 teaspoon of salt is added to 1 cup of water.

Method 1: A small amount of saline is poured into the palm of the hand, while one nostril is held closed; then the saline is "sniffed" into the opposite nostril. This maneuver is repeated on the other side. The nasal passages are then cleared by blowing the nose well. The patient may also wish to gargle.

Method 2: A large rubber ear syringe or baby suction bulb should be purchased, and the tip of the ear syringe should be cut to enlarge the opening to about the size of the index finger. (If the opening is too big, the flow of water is too fast, causing pain.) The syringe is filled with saline; the patient leans over the sink with the head down. While the nostril is pinched closed around the tip of the syringe, the bulb is squeezed and released several times. This maneuver is repeated on the other side. The solution should run down the back of the throat and out the mouth and other nostril. The patient can be advised to use this method after showering, with the water turned off, but still standing in the steamy shower.

Method 3: Ocean Spray, Ayr Mist, Salinex, or Sinus Survival nasal solution can be used; 5 to 8 squirts are placed in each nostril. The nasal passages are then cleared by blowing the nose.

Method 4: A SinuCleanse nasal irrigation system (neti pot) can also be used. Additional information and products can be found at www.sinussurvival.com, or the manufacturer, Sinus Survival Products, can be contacted at 303-771-0033.

Method 5: Alternatively, the patient may wish to purchase an irrigation device (e.g., Waterpik) and a Grossan nasal adapter. These items may be obtained at pharmacies. With the irrigator at "low" setting, the tip of the adapter is inserted in the nostril, with the solution allowed to run down the back of the throat and out the mouth and other nostril. Although this procedure may seem arduous and somewhat unsophisticated, it is the most thorough way to wash the nasal passages.¹⁶

Pharmaceuticals

The medicines available today are excellent for mild to moderate allergic rhinitis.

Antihistamines and Decongestants

Over-the-counter (OTC) antihistamines and antihistamine-decongestant combinations have been available for many years. However, the classic antihistamines, primarily the nonprescription agents diphenhydramine (Benadryl) and chlorpheniramine (Chlor-Trimeton), are associated with sedation and can influence tasks such as driving¹⁷ and operating machinery. This caution, as well as the quality-of-life impairment with these readily available medicines, has limited their use by the public. The newer, second-generation antihistamines are nonsedating or only minimally sedating and have become widely used. Nonsedating agents include loratadine (Claritin) 10 mg once daily, fexofenadine (Allegra) 60 mg twice daily (adult dose 180 mg once daily), and decongestant combinations thereof. Cetirizine (Zyrtec) 10 mg once daily may be mildly sedating and therefore is often started with bedtime dosing.

Oral decongestants given by themselves or in combination with antihistamines may have a stimulant effect and impair sleep if taken at bedtime. These agents include pseudoephedrine and phenylephrine. Phenylpropanolamine has recently been discontinued from many medications, owing to its potential for abuse as an appetite suppressant and other potentially serious complications.

Mucolytics

The benefit of use of oral mucolytics such as guaifenesin has been poorly substantiated, but these agents are often prescribed, with doses in adults of 1200 mg twice daily needed to be effective. These drugs are safe and without side effects other than a "runny nose" in some patients. OTC guaifenesin combinations with dextromethorphan or codeine are effective for cough in age-appropriate doses (e.g., Robitussin combinations).

Topical Nasal Decongestants

Topical nasal decongestants are available over the counter (e.g., Afrin, 4-Way nasal spray) and are effective in the short term, with the potential for rebound "rhinitis medicamentosa" if overused. This condition can be treated with topical nasal steroids and discontinuation of the nasal decongestant.

Topical Nasal Anti-inflammatory Sprays

Steroids

Topical nasal steroids are available by prescription and are very effective for treatment of chronic rhinitis when inflammation is present. The main response is relief of nasal congestion. They are safe in recommended doses, although nasal dryness and bleeding are possible unless nasal saline moisturization precedes the administration of the nasal steroid and the tip is pointed toward the outside, not the septum. The available topical nasal steroids, beginning with the most recently approved, are the following: mometasone (Nasonex), 2 sprays daily, approved for use in patients as young as 3 years of age, with 0.1% systemic absorption; fluticasone (Flonase), 2 sprays daily, approved for use down to age 4 years, with 1.0% systemic absorption; budesonide (Rhinocort) aqueous or in a metered dose inhaler (MDI), effective in a dose of 1 or 2 sprays daily; and triamcinolone (Nasacort) aqueous or in an MDI, 2 sprays daily. As part of a good nasal hygiene routine, nasal spray can be used twice daily when patients brush the teeth, first irrigating with saline and, for the aesthetic-minded, inhaling of a mild eucalyptus mist, if tolerated, afterward.¹⁸

Antihistamines

Another topical nasal antiallergic spray available by prescription is azelastine (Astelin), which is an antihistamine with antiallergic effects. This agent is effective for treatment of seasonal and perennial allergic rhinitis and vasomotor (nonallergic) rhinitis. Dosage is 2 sprays in each nostril twice daily.

Mast Cell Stabilizer

Cromolyn sodium (NasalCrom) is an antiallergic nasal spray available over the counter. It is safe and effective for treatment of allergic rhinitis. This agent needs to be taken in a dose of 2 sprays at least 4 times daily and can be used before allergic exposure.

Anticholinergic

Ipratropium (Atrovent) is the only nasal spray effective for rhinorrhea (runny nose). It is an anticholinergic, available in concentrations of 0.03% and 0.06%; the dosage is 2 sprays 3 times daily as needed.

Immunotherapy

Allergy vaccine injection therapy (allergy immunotherapy, given as "shots") is useful when environmental exposure cannot be avoided, or if control of symptoms with medications is suboptimal, side effects are undesirable, or duration of symptomatic therapy is not appealing and the patient wants to treat the cause instead of the symptoms. In simplistic terms, allergy immunotherapy works by stimulating the production of an IgG-blocking antibody, which occupies the receptor site of the allergic IgE antibody, displacing it by competitive inhibition, thereby inhibiting the initiation and lessening the magnitude of the allergic reaction. The IgE antibody levels decline, and there is a deregulation of the immune response by a complex of mechanisms. With an increased appreciation of untreated allergic rhinitis as a disorder with systemic complications¹⁹ (e.g., fatigue, headache, and increased asthmatic reactivity), use of allergy "shots" is now considered earlier in the treatment algorithm.

Botanicals

Bioflavonoids

Although the role of herbal medicine in allergies as effective therapy has not been studied as much as that in asthma, certain principles apply. Bioflavonoids are claimed to be active anti-inflammatory and antiallergy agents that prevent the formation of histamine and help to regulate vascular permeability and inflammation. Bioflavonoids are concentrated in onions, garlic, cayenne pepper, apples, and tea. A eucalyptus bioflavonoid preparation, Quercetin, is the most effective antihistaminic/antiallergic bioflavonoid and is taken in capsules. Other bioflavonoid-rich herbs are chamomile, feverfew, yarrow, baikal skullcap, and many mints. Other important antiallergic bioflavonoids are chlorogenic acid, caffeic acid, kaempferol, apigenin, luteolin, acacetin, and myricetin.

Essential oils of orange, tangerine, and lemon, as well as cardamom, cinnamon, and mint family plants, have antihistaminic and antiallergic effects and are believed to help to relax nasal passages and airways.²⁰

Dosage. 1 or 2 1000-mg tablets of Quercetin one to three times daily.

Precautions. Quercetin is a safe supplement with no serious side effects when used orally at recommended doses.

Stinging Nettle

Stinging nettle (*Urtica dioica*) is a folk remedy for many problems. It is often used as a tonic and detoxifying remedy. The leaves are used for the

relief of bronchial asthma and bronchitis. Freeze-dried stinging nettle is sometimes recommended for allergies; the rationale is that it provides a pseudohomeopathic dosage of histamine and acetylcholine. In a randomized, double-blind study of freeze-dried *Urtica dioica* in the treatment of allergic rhinitis, the stinging nettle was rated higher than placebo in the global assessments and only slightly higher in diary data comparisons.²¹

Essential oils

Dosage. 300 to 1200 mg of dried leaf two to four times daily.

Precautions. Stinging nettle should be avoided with pregnancy. It can cause diarrhea when used orally.

Butterbur (*Petasites hybridus*)

A randomized double-blind trial comparing butterbur to cetirizine (zyrtec) over 2 weeks for seasonal allergic rhinitis found butterbur was as effective as cetirizine without sedating side effects.

It is thought to work by inhibiting the biosynthesis of leukotrienes.³⁷

Dosage. 8 mg (standardized to petasine content) four times daily.

Precautions. Allergic potential in those sensitive to ragweeds. Avoid using for more than 4 to 6 weeks.

Supplements

Antioxidants

A multivitamin, plus vitamin C 500 mg, once daily minimum, and vitamins A and E, is a recommended part of an antioxidant program. Grape seed extract (*Vitis vinifera*) is rich in proanthocyanidins and has been demonstrated to have antioxidant properties in some models. This botanical is a reasonable addition.²²

Dosage. One multivitamin daily. Grape seed extract: 25 to 100 mg 1 to 3 times daily standardized to contain 40% to 80% proanthocyanidins.

Precautions. Grape seed extract may inhibit platelet aggregation and should be used with caution in patients taking anticoagulant medications.

Zinc

Zinc is described as capable of causing up to a 40% inhibition of IgE-mediated induction of histamine and leukotriene release from both basophils and mast cells, modifying the inflammatory response.²⁴ Owing to zinc's additional effect of promoting healing

during infections, the dose can be increased during acute exacerbations of allergic rhinitis.

Dosage. 15 to 35 mg of zinc daily.

Precautions. Doses greater than 40 mg daily can lead to copper, calcium, and iron depletion. Toxic symptoms include nausea, vomiting, diarrhea, dizziness, and anemia.

Nutrition

Fluids

Hydration is of ultimate importance; with intake of at least 8 to 10 glasses of water per day recommended.

Vegetables and Fruit

Vegetables are good sources of antioxidants. Dietary modifications to include increased intake of onions, garlic, cayenne, apples, and tea can be encouraged, as well as 6 to 9 servings of fruits and vegetables daily.

Omega-3 Fatty Acids

Conventional medical practice and alternative medicine may overlap now that vitamins B and C as well as diets low in sodium and sugar and high in fish oil and magnesium intake have been reported to be beneficial in bronchospastic disorders.²⁷ Consumption of fish rich in omega-3 fatty acids, such as salmon and mackerel, several times a week is recommended. Other omega-3 sources include walnuts, ground flaxseed, and toasted hemp seeds.

Fats and Oils

Fats that promote inflammation should be avoided. Examples of such fats are oils rich in omega-6 fatty acids, including polyunsaturated vegetable oils (such as safflower, sunflower, sesame, and corn oils), partially hydrogenated oils (found in many snack foods), margarine, and vegetable shortening. Extra virgin olive oil, which helps fight inflammation and is high in vitamin E, should be used as the main dietary fat²⁸ (see Chapter 84, The Anti-Inflammatory Diet).

Chicken Soup

Chicken soup has been recommended for respiratory disorders since the time of Maimonides.²⁵ Its anti-inflammatory effects have recently been substantiated in the laboratory.²⁶

Biomechanical Therapies

Massage

Instruction in sinus acupressure on reflexology points can be given as part of the patients's chronic sinusitis treatment program.

Chiropractic

Chiropractic has most recently been shown to have no value in asthma. By extension,²⁹ therefore, it is of doubtful use in rhinitis.

Traditional Chinese Medicine

Chinese herbal formulas similar to those for asthma are available for allergic rhinitis. Examples include Turtle Shell, Cistanche combination, and Jade Screen powder.³⁰ Although there are few well-controlled scientific studies on the efficacy, safety, and mechanisms of action of traditional Chinese medicine formulas in allergy or asthma, research is in progress, and additional data are forthcoming. Recently, the Chinese herbal medicine formula MSSM-002 was reported to suppress allergic airway hyperreactivity and to modulate T_H1/T_H2 responses in a murine model of allergic asthma.³¹ Unfortunately, exotic drug preparations are likely to be unreliable in the amount of active drug content, and they may be contaminated with active drugs such as corticosteroids or with hazardous agents such as lead.⁵ Practitioners need to be aware of potential and actual adverse and allergic reactions and herb-drug interactions with traditional Chinese medicines and with Chinese proprietary or patent medicines.³²

Yoga-Type Breathing Techniques

Nasal Diaphragmatic Breathing Exercises

The patient can be instructed in nasal diaphragmatic breathing. Nasal inhalation is performed slowly, with a focus on the diaphragm; exhalation is by mouth. These exercises are preferably performed in a steam shower to humidify the nasal

mucosa, with steam acting as a mucolytic and mucocoevacuant. This measure also helps to remove pollen. Nasal breathing exercises can also be done over a pot of boiling water (with a towel over the head) or with use of a SteamHaler (see Chapter 88, Breathing Exercises).

Aromatic Agents

Agents such as eucalyptus, menthol, anise, fennel, tolu balsam, and camphor (with some incorporated in products such as Vicks VapoRub and Tiger Balm)²⁰ can soothe the inflamed nasal mucosa when inhaled as vapors.

Exercise

In the pollen season, exercise indoors should be considered, especially during peak pollen times. Membership in a health club is conducive to regular physical activity (a steam shower after the workout is also beneficial). Alternatively, brisk walking inside shopping malls is also good exercise.

Mind-Body Medicine

Laughter has been shown to produce improvement in patients experiencing the allergic diathesis of atopic dermatitis—and is always a good idea!³³

Other Therapies to Consider

Homeopathy

A randomized controlled trial of homeopathy versus placebo found significant benefit with the use of homeopathic therapy in patients with allergic rhinitis. The principal allergen was identified with skin testing in each patient, and a 30 C dilution of the appropriate homeopathic remedy was made. There was a 28% symptom reduction in the homeopathic therapy group compared with a 3% reduction in the placebo treatment group ($P .0007$).³⁴

Constitutional homeopathy has been popularized,^{35, 36} but results are highly dependent on competence of the practitioner.



— THERAPEUTIC REVIEW —

Environmental measures

- Use of a humidifier or dehumidifier, HEPA filter
- Dust mite precautions, dander minimization
- Nasal saline moisturization and irrigation
- Water intake of at least 8 glasses daily

Pharmaceuticals

- Oral antihistamines as needed

- Topical nasal steroids or azelastine (Astelin) or cromolyn sodium (NasalCrom)
- Mucolytics such as guaifenesin 600 to 1200 mg twice daily
- Combination agents

Immunotherapy

- Allergy vaccine injection therapy

Botanicals

- Bioflavonoids such as eucalyptus bioflavonoids (Quercetin) 1000 mg 1 or 2 tablets 1 to 3 times daily

Supplements

- Multivitamin, vitamin C, vitamins A and E
- Grape seed extract 25 to 100 mg 1 to 3 times daily

Nutrition

- Hydration—adequate water intake cannot be over emphasized.
- Elimination of additives, processed foods, known allergens (e.g, spices, milk, nuts, eggs), yeast products
- Addition of cold water fish, such as salmon and mackerel, with omega-3 fatty acids; fruit juices and vegetables

Biomechanical therapies

- Nasal diaphragmatic breathing
- Steam shower or nasal steam inhalation
- Use of aromatics such as eucalyptus in nasal sprays or in moisturization practices may be beneficial.

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Foreword

It cannot be said too often that integrative medicine is not synonymous with complementary and alternative medicine (CAM). CAM is about modalities—treatments that are not currently taught in conventional schools of medicine and that are not part of conventional (allopathic) treatment protocols. Integrative medicine does try to incorporate the best CAM ideas and practices into comprehensive treatment plans, but it has more important goals than the simple substitution, say, of herbs for pharmaceutical drugs.

Above all, integrative medicine seeks to work with the body's natural potential for healing. It assumes that the organism has an array of mechanisms to maintain health and promote healing and that the aim of treatment should be to unblock or activate or enhance those mechanisms. In practice, it pays attention not only to the physical bodies of patients but also to their minds and emotions and their spiritual lives. It looks at their total lifestyles in order to suggest changes in routines that might favor healing, and it exhorts physicians to model healthy lifestyles for their patients. It also emphasizes the centrality of the doctor/patient relationship in the healing process.

Those in academic medicine who feel threatened by the rise of integrative medicine focus only on its promotion of CAM, which they view as unscientific or even anti-scientific. Integrative medicine is committed to scientific method and evidence-based practice. But it is important to keep these facts in mind: (1) most conventional medical scientists are unaware of the evidence that already exists for the safety and efficacy of many CAM treatments; (2) the evidence base for many widely used allopathic treatments is not very solid; and (3) most medical decision-making takes place in areas of scientific uncertainty, where physicians and patients must use good judgment and intuition in the absence of definitive evidence. With regard to this last point, it seems to me that we need to get in the habit of using a sliding scale of evidence—i.e., the greater the potential of treatment to cause harm, the stricter the standard of evidence it should be held to.

Many conventional treatments would not pass this review. Take the recent example of bone marrow

transplant for patients with metastatic breast cancer. I know many patients who were persuaded to opt for this most invasive procedure, which is now acknowledged to be worthless. It is in this situation that both physicians and patients should really demand evidence for safety and efficacy.

Integrative medicine is here to stay and, I am confident, will influence the development of medical education and research as well as practice. A Consortium of Academic Health Centers for Integrative Medicine that includes deans and chancellors of a number of leading medical schools is already developing guidelines for new curriculums, research strategies, and healthcare policy. Nevertheless, for the average healthcare consumer integrative medicine is still hard to access for the simple reason that qualified practitioners are few and far between. Demand greatly exceeds supply for physicians trained in the new paradigm, and training opportunities are limited.

I meet many clinicians who are open to change. They realize their training did not prepare them to meet the expectations and needs of consumers today, and they are willing to learn about more natural, less harmful ways of treating disease and supporting health and healing. I believe this book will be helpful to them. My colleague and former fellow (at the University of Arizona's Program in Integrative Medicine) has assembled a stellar group of contributors to present the integrative perspective on the treatment of the commonest categories of disease. This is a very practical text that takes account of the best available scientific evidence as well as the accumulated experience of practitioners of many different systems of treatment.

It is a pleasure to introduce this book to readers. I hope it will lead to better treatment outcomes and improve the experience of clinical medicine for both doctors and patients.

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