

Review Article

Role of Jalaneti and Pranayama in Allergic Rhinitis with Asthma

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ABSTRACT

Allergic respiratory conditions are a major public health challenge worldwide. Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness, and cough that vary over time and in intensity, together with variable expiratory airflow limitation. Asthma is one of the most common chronic diseases worldwide, with an estimated 300 million affected individuals. It is also an associated disease with allergic rhinitis (AR). AR is characterized by nasal congestion, rhinorrhea, sneezing, itching of the nose, and/or postnasal discharge. It is also closely related to asthma and 10%–40% of people with rhinitis have concomitant asthma. Researches in this field are very limited; therefore, this review article will be helpful in updating the knowledge about disease and drugs that can help in satisfying the attending people. Yoga is one of the complementary medicines which are helpful in relaxing the muscles, releasing anxiety, improving blood circulation, respiration, etc. Yoga uses a holistic approach to promote positive health for centuries. A regular practice of jalaneti and pranayama provides the relaxation and sound sleep and works as healing therapy for AR and asthma.

KEYWORDS: Concomitant, heterogeneous, holistic, jalaneti, rhinitis

INTRODUCTION

Allergic respiratory conditions are a major public health challenge worldwide. According to the World Health Organization (WHO) estimates, about 400 million people around the world suffer from asthma and about 250,000 people die from the disease each year.^[1] Likewise, about 12%–30% of the population across regions suffers from allergic rhinitis (AR).^[2] Although AR is not a fatal condition, it is associated with impaired quality of life, absenteeism from work, and substantial financial costs.^[3] Asthma is a chronic airway disease characterized by reversible airway obstruction, allergic inflammation, and airway hyperresponsiveness.^[4] The incidence of asthma continues to rise worldwide, doubling over the last 10 years.^[5,6] Asthma is a common chronic inflammatory airway disorder. It is very common in children, teens, and adults. It is a condition where the air passages in the lungs become inflamed.

AR is defined as inflammation of the membranes lining the nose and is characterized by nasal congestion, rhinorrhea,

sneezing, itching of the nose, and/or postnasal discharge. AR is also closely related to asthma and 10%–40% of people with rhinitis have concomitant asthma.^[7] According to WHO (2007), the global burden of AR was estimated to be 400 million.^[8] People with AR generally experience symptoms after breathing in an allergy-causing substance such as pollen or dust. In the fall, a common allergen is ragweed. In the spring, the most common triggers are grasses and pollen. AR is one of the most common chronic disorders, with reported prevalence ranging from 3% to 19% in various countries.^[9] AR is a heterogeneous disorder that includes seasonal AR symptoms.

CLASSIFICATION

AR has been categorized as seasonal (occurs during a specific season) or perennial (occurs throughout the

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year). However, not all patients fit into this classification scheme. For example, some allergic triggers, such as pollen, may be seasonal in cooler climates but perennial in warmer climates, and patients with multiple “seasonal” allergies may have symptoms throughout most of the year.^[10] Therefore, AR is now classified according to symptom duration (intermittent or persistent) and severity (mild, moderate or severe).^[11,12] Asthma can be classified as extrinsic and intrinsic asthma,^[13] and the severity of asthma is classified according to the frequency of symptoms, forced expiratory volume in 1 s (FEV1), and peak expiratory flow rate (PEFR). Therefore, it is also classified as intermittent or persistent (mild, moderate, and severe persistent).^[14]

TREATMENT

The treatment goal for AR is relief of symptoms. Therapeutic options available to achieve this goal include avoidance measures, oral antihistamines, intranasal corticosteroids (INS), leukotriene receptor antagonists, and allergen immunotherapy. AR and asthma appear to represent a combined airway inflammatory disease, and therefore, treatment of asthma is also an important consideration in patients with AR. The first-line treatment of AR involves the avoidance of relevant allergens (e.g., house dust mites, molds, pets, pollens) and irritants (e.g., tobacco smoke).^[15] Asthma is a chronic disease that cannot be cured, but medicines and lifestyle changes can help control the symptoms of the disease. One way to relieve from asthma is to avoid things in the environment that make symptoms worse. A number of types of medicines are also used to treat asthma.

AR and asthma are both chronic heterogeneous disorders, with an overlapping epidemiology of prevalence, health care costs, and social costs in quality of life. Both are inflammatory disorders with a similar pathophysiology.^[16] However, each disorder has an array of treatments used separately in controlling these disorders, while yoga can be used as an adjunct treatment in both of the diseases. AR is a global health problem that affects patients of all ages and ethnic groups, with an estimated prevalence of 30% in the general population.^[17]

A study was done on eighty patients of AR concluded that nasal breathing exercise is a simple and cost-effective measure to reduce symptoms of AR and improve patient satisfaction. The combination treatment of nasal breathing exercise and INS offers a statistical advantage over treatment with the intranasal steroid fluticasone propionate for AR.^[18]

A randomized controlled study on 241 patients of mild to moderate persistent chronic bronchial asthma (121 patients of the yoga group and 120 patients of

the control group) patients and concluded significant improvement in biochemical profile of asthmatics in the yoga group; superoxide dismutase activity also improved in yoga group than the controls.^[19] They also reported that asthma symptom scores decreased significantly after the practice of asanas, pranayama, and meditation for the period of 6-month practice in the yoga group in comparison to controls.^[20]

Pranayama Nadishodhan and *Kapalbhati* showed a significant result on forced ventilation capacity, maximum voluntary ventilation, and PEFV.^[21] A study also concluded that yoga practice can be advocated for improvement of respiratory efficacy as well as an alternative therapy or as adjunct to conventional therapy in respiratory diseases.^[22]

A randomized controlled study of sixty patients showed that lung functions improved significantly in the patients of the yoga group after 2 months of the yoga practice from the baseline. Pranayama and yoga breathing are used to increase respiratory stamina, relax the chest muscles, expand the lungs, raise energy levels, and calm the body.^[23]

In a study, the effect of yoga on asthmatic patients concluded that most of the individuals in the yoga group showed a decreased number of day attacks per week and night attacks per month as compared to the control group. They also concluded a significant improvement in PEFV. Yoga group showed 66.7% reduction in the use of salbutamol puff and 58.3% in the use of salbutamol tablets while control group showed only a reduction of 16.6% in the use of puff.^[24]

A study reported the significant change in FEV1 and PEFV in the yoga group after the regular practice of yoga for 8 weeks of the study period from the baseline; the frequency of rescue medication use significantly decreased over the study period in yoga group and control groups. However, the decrease was achieved relatively earlier and was more marked in the yoga group than in the control group. This study supported the efficacy of yoga in the management of bronchial asthma.^[25]

AR is an upper airway disease that is caused by an IgE-mediated inflammatory reaction after allergen exposure, and it could contribute to decreased social activity, a poor quality of school life, and decreased productivity in moderate to severe symptomatic patients.^[26] Asthma and AR are comorbid conditions,^[27] with AR being a major risk factor for the occurrence of asthma.^[28]

AR is an important and common condition that causes major morbidity in children and is a risk factor for the

development of asthma. Nasal irrigation with saline is effective in children, improving symptoms and reducing the need for drug treatment. AR is a common pediatric condition. In a worldwide study of over one million adolescents aged 13 and 14 years, the prevalence was 14.6%.^[29] India is not alone one of the countries associated with asthma and AR, it is worldwide, and last few decades, it has been rapidly increasing. The word “yoga” comes from a Sanskrit root “*yuj*” which means union, or yoke, to join, and to direct and concentrate one’s attention.^[30,31] Regular practice of yoga promotes strength, endurance, flexibility and facilitates characteristics of friendliness, compassion, and greater self-control, while cultivating a sense of calmness and well-being.^[32] Yoga has been considered a best complementary and alternative medicine by the National Institutes of Health.

YOGA (JALANETI AND PRANAYAMA) FOR ALLERGIC RHINITIS WITH ASTHMA

Yoga includes the practice of the yoga asanas or postures and the body purification techniques such as jala-neti, sun salutations, pranayama, meditation, and agnisara, which involve rapid contraction and expansion of the muscles of the abdomen. Jala-neti is the practice of yoga which helps keep the nostrils clean from congestion and mucus creation. It is the best-recommended cleaning method for yoga practice. Out of the six shuddhi kriyas (shatkarmas), the shuddhi kriya for the cleaning of the nasal path is known as neti. The aim of the process is to purify the breathing path right from the nostrils to the throat. If the aim is achieved using water, the process is known as jala-neti.

JALANETI PROCEDURE

To carry out the basic procedure, mix one teaspoon of pure salt (uniodized) with half a liter of water. The neti lota can contain this isotonic solution. Then, carefully insert the spout of the pot in one of the nostril and give a slight sideways tilt to the head. The water will enter this nostril and flow out from the other nostril. Do not inhale, laugh, or talk while performing this. Once this step is done, blow the nose, and clear the throat. Repeat the same procedure by starting with the other nostril. In this basic method of jala-neti, the water that is poured into one nostril will most probably come out of the other nostril, but sometimes, it is possible to have some water flowing out of the mouth. For this reason, it is important to keep the mouth open. Moreover, before starting with jala-neti, the stomach should be empty. After jala-neti, drying the nose is crucial.

Benefits

Jala-neti health benefits are manifold. It helps remove dirty and infected mucus from the nasal cavity. Jala-neti and sinusitis also go a long way and are very helpful. Practicing nasal cleansing clears the sinus cavities and in turn increases the body’s capacity to fight against nasal infections. Similarly, with jala-neti, allergies such as hay fever can also be kept at bay. More so, jala-neti makes the practitioner breathe more freely with the nose. Therefore, problems such as asthma and bronchitis are also reduced. Sore throats, coughs, tonsillitis can also be cured by performing jala-neti regularly.

Pranayama is also known as “yogic breathing” or “controlled deep breathing.” “*Prana*” means energy in Sanskrit and “*ayama*” means distribution of energy. Pranayama included yogic breathing practices to achieve a slow rhythmic pattern of breathing. The instructions for this included (a) slow down the breath rate, (b) exhalation to be made longer than inhalation, and (c) develop an internal awareness. A prolonged easy, slow exhalation is the safest way to get mastery over the mind. Meditation, considered to be a part of yoga (antaranga yoga), is a valuable tool to calm down uncontrollable surge of negative emotions.

Nadi shodhana pranayama

Sit in any comfortable posture: *Padmasana*, *Siddhasana*, or *Sukhasana*. Make the breathing normal. Close the right nostril with right thumb and fill in the breath through the left nostril. When the breath has been filled inside, close the left nostril with third finger and stay in this state of *Antrik Kumbhaka* for a few seconds. Then, lift the thumb from the right nostril and exhale slowly, keeping the left nostril closed. Repeat the process by inhaling through the left nostril and exhaling through the right nostril.

Bhastrika pranayama

Bhastrika pranayama is an excellent breathing exercise. It keeps the body healthy and mind happy. “*Bhastrika*” is a Sanskrit word, which means “bellows.” In short, *Bhastrika* is “inhale” and “exhale” deeply and forcefully. Therefore is also known as “deep breath exercise.”

Sit in comfortable asanas such as *Padmasana*, *Siddhasana* or *Sukhasana*. Spinal cord must be straight. *Bhastrika* is similar to the working of “bellows.” “Breathe in” and “breathe out” forcefully. Take the breath inside as deep as possible to fill the lungs and then exhale out completely to evacuate lungs. Breathe in and breathe out with equal force. The breath should be filled in lungs up to the diaphragm, not in stomach. Do not stop the breath during this process. This is one cycle completed. Repeat this process several times. Do not try to over practice,

stop immediately after feeling of tiredness. Depending upon the capacity and health of the practitioner, it can be done in three variable speeds, namely, slow, moderate, and at high.

Bhramari pranayama

Bhramari pranayama is the best breathing exercise for meditation. It has immediate relaxing effect on the brain. If it is practiced regularly, mental stress, fatigue, and high blood pressure reduce. “Bhramari” is a Sanskrit word which is derived from “Bhramar” the black Indian bumble bee. It describes the characteristic humming sound which is produced while exhaling in this breathing exercise.

Sit in a suitable relaxed posture such as *Padmasana* (lotus pose) or *Vajrasana* (thunderbolt pose). Cover the ears by pressing tragus with the help of thumbs of the hands. Place the index fingers on the forehead, and let the remaining three fingers close the eyes. Inhale through both the nostrils, taking a real slow deep breath. Keep the mouth closed and begin slowly exhaling, making humming sound of a bee like “hmmmm.” While practicing Bhramari, keep reciting “OM” mentally and concentrate the mind on *Agya Chakra* (between eyebrows).

CONCLUSION

AR and asthma both are common disorder that can significantly impact patient quality of life. The diagnosis is made through a comprehensive history and physical examination. Yoga is one of the complementary medicines which have a great impact on the human body. The main finding of this review suggests that the practice of *jalaneti* and *pranayama* can be helpful in AR with asthma. Global Initiative for Asthma Management has also considered breathing technique (*Beutyko*) as an adjuvant therapy for the better management of asthma. This review provides some evidence that nasal breathing exercise (*pranayama*) may be an effective tool in the management of asthma and AR. It can be practiced as an adjuvant therapy to standard medical therapy for better outcomes.

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Conflicts of interest

There are no conflicts of interest.

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