IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 5, May 2022
Impact Factor: 6.252

Yogic Management of Bronchial Asthma

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Abstract: *The nerve system's autonomic functions (ANS). A lot of research has looked into the benefits of yoga for asthma management. People who used a holistic program like yoga, which includes meditation, asana (posture), and pranayama (breathing), had fewer weekly asthma attacks, improved breathing, and responded better to medicine. (Miles 1964) was one of the first to investigate how breathing modifications during pranayama can minimize oxygen usage and boost productivity. He concluded that a yoga practice like this would be effective in many hypoxic situations. Yogic practices help you lose weight, enhance lung function, lower your heart rate, boost your vital capacity, and hold your breath longer. Additionally; yoga has a profound effect on the autonomic nervous system (ANS). Several studies examine the benefits of yoga practice which help to manage asthma. People incorporating a holistic program such as yoga that helps with meditation, asana (posture), and pranayama (breathing), had fewer weekly asthma attacks, improved breathing, and responded better to their medication. (Miles 1964) was one of the first people to study the respiratory changes during pranayama which could reduce oxygen consumption and increase working efficiency. He inferred such a practice of yoga would be beneficial in many hypoxic conditions. Yogic practices help you lose weight, enhance lung function, lower your heart rate, boost your vital capacity, and hold your breath longer.*

Keywords: Asthma, Yoga, Paenayam, Shatkarma

I. INTRODUCTION

Asthma is a common chronic disorder found commonly in children. Adults [1,2]. Asthma can be specified as wheezing, shortness of breath, and a tight feeling in the chest. In ancient greek asthma means “panting, “gasping” or “stiffness in the chest”. Asthma is among the th16th ranked among the lives with disability worldwide[3]. According to Masoli et al, 2014 there are approximately 300 million cases worldwide out of which 30 million cases are in India alone which is about 10% of the total cases[1,4-5]. A 50% rise in asthma cases has been observed over every decade. Among every 250 deaths, one is due to asthma[5]. Bronchial asthma is one of its types and it leads to obstruction airway and difficulty in breathing which can restrict physical activities that can create an impact on stress, social impact, and many factors as well. Bronchial asthma can be treated in several ways such as by taking proper medication, yoga, and several other ways as well. Most of the patients are treated with the help of conventional therapy. Even after several advancements in conventional therapy. However, insufficient control over asthma continues to be a real problem for patients. Unbounded asthma causes a burden that requires proper treatment that is highly cost effective[6-7]. The chronic disease cannot be cured completely but can be minimized/controlled up to a certain extent. In the worst situation of a full-blown asthma attack quick relied medicines are used. For a short-term period, bronchodilators are used to control asthma. For long-term control, a daily dose of medicines is required for a long interval of time.

1.1 Causes of Asthma

1. Chronic Inflammation – The most common cause of asthma is chronic inflammation.environmental considerationRSV, Mycoplasma, colds, and flu are examples of viral illnesses.

Allergens– An allergy is a harmful immunological response to chemicals such as pollen.pollen grains, mold, or animal da nders, for example. The immune system handles them differently.As intruders, innocuous compounds, often known as alle rgens, respond in a disruptive manner.natural functions of the body The following are the most prevalent irritants that indu

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ce allergic asthma: Pollen House, dust, mites Mold, and Cockroach droppings Animal danders (small flakes from their skin, fur, feathers, or saliva) In fact, allergic asthma is the most frequent type of asthma.

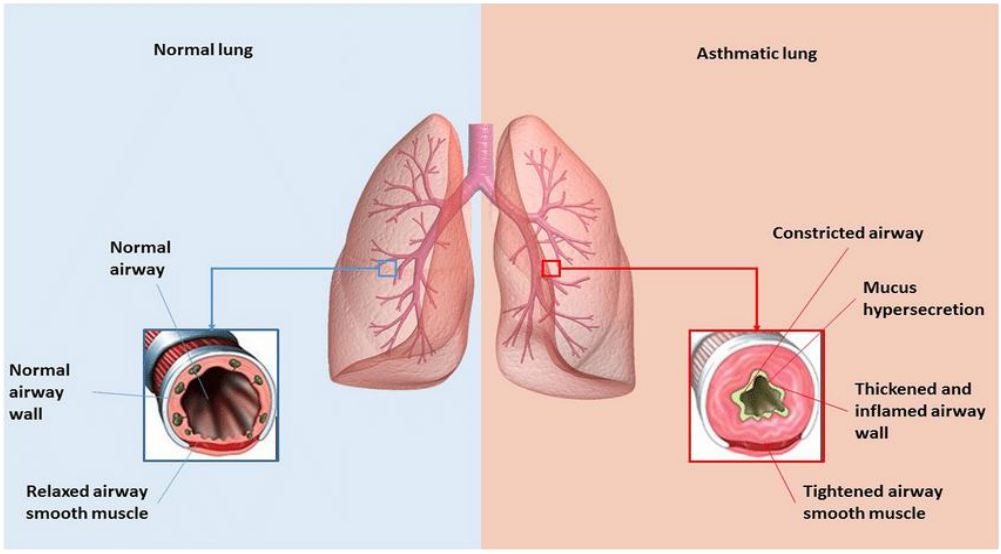

Figure 1: Comparison between normal lung and Asthmatic lung REF-[8]

(C) Pollution in the air - Ozone causes asthma because it irritates the lungs and airways. It is common knowledge that ozone levels are linked to asthma episodes. It has also resulted in the requirement for more asthma medication. Ozone can cause lung damage. Smoke, automobile fumes, and other sources of ozone can make it difficult to breathe deeply like- smoke, fumes from vehicles, etc.

2. Physical Activity–Exercise-induced asthma (EIA) is a condition in which the airways in the lungs narrow as a result of vigorous exercise. During or after exercise, it causes shortness of breath, wheezing, coughing, and other symptoms such as (GYM) It is more prevalent in elite athletes. Exercise and any rigorous physical activity that causes you to breathe more deeply might be asthma triggers. Exercise-induced asthma is another name for this condition (EIA).
You can continue to exercise without fear of negative consequences if you receive the correct treatment.

3. Drugs and Tobacco.
Sulfites are added to certain foods (such as potatoes, shrimp, dried fruit, beer, wine, and vinegar) to keep them from deteriorating, however, they might induce an allergic reaction in sensitive people.

5. Occupational asthma is caused by chemicals and perfumes.

6.Emotional Stress & Anxiety - Anger, Fear, Excitement, Laughter, and other sudden emotional outbursts can induce asth ma. sobbing and yellingStrong emotions alter breathing patterns, which can lead to wheezing and other asthma symptoms. associated symptoms.

7. Stress-Asthma is more likely to develop in those who are always stressed.

8. Genetics- Children with asthmatic parents are more likely to develop the disease asthma.

9. Obesity- Obese adults with a BMI of 30 or more are twice as likely to die.

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II. ASTHMA YOGIC MANAGEMENT

Asthma therapy with yoga is a time-consuming practice. Asthma administration
The following topics will be covered: cleansing technique, asana, pranayama, relaxation, and yogic attitude.
1. Cleaning TECHNIQUE: The hatha yoga cleansing technique is the most popular crucial part of asthma therapy for asthma patients the salt that these particles contain can be increased somewhat.
The following techniques should ideally be done before asana in the morning.
(A)Kunjal kriya entails drinking warm, salty water and then regurgitating it by stimulating the back of the throat with fingers. The importance of kunjal in treating an acute asthma attack cannot be overstated. The nerve energy that causes many of the symptoms of an attack can be discharged by emptying the stomach of water. The vagus nerve sends a reflex signal from the stomach to the lungs, releasing tension in the lungs. Kunjal can help you avoid an attack if you practice it regularly.
(B)Jal Neti - This is a method of cleansing the nasal passages with warm, salty water. It is crucial for asthmatics because mouth breathing is a typical problem. Neti helps nasal breathing by removing blockages in the nasal passages. Pranayama can be conducted more efficiently with regular practice. If your nose is clogged, do Jala neti every day for at least a month to clear it out. There are three different types of neti to reduce mucus.
1- Neti Jala (Water Neti)
2- Neti Sutra (Catheter Neti)
Vyut Krama 3 (Kapalbhati)
These three Kshatriyas are highly useful for reducing mucus.
(B)JALA NETI (C)SUTRA NETI (C)Vastra Dhauti - This is done by swallowing a strip of fine muslin up to 3m long and 2.5cm broad.
The fabric must be clean. Within 12 minutes of being withdrawn from the stomach Kunjal and Neti kriyas can both benefit from this practice.
It is more powerful than Kunjal in many cases. If the strip of fabric gets wet in the middle of the stream. Urine swallowing in an emergency circumstance. It can be used every day for up to two weeks, but once a week is sufficient after that.
D)Shankhaprakshalana - It is a very powerful technique for cleansing the whole elementary canal. It involves drinking a large amount quantity of salty water alternated with a series of 5 asanas. Laghoo Shankhprakshalana is the short form of this technique. In which a smaller amount of water is drunk but the same series of asanas are performed. This can be practiced during the acute attack and also daily during the acute situation. Removing the mucus from the intestinal walls. It has a reflex effect on all the mucus glands of the body. The salt absorbed helps to dissolve accumulated mucus in the lungs and other bodily organs and relaxes the nervous system. After performing this practice rest is compulsory.
Asana
Asana gives both strength and relaxation to the body. They help to wash the toxins out of the joints, cavities tissue, and organs. They act to support the balancing and distribution of prana in the tissues. They also act on much deeper levels, bringing out significant benefits over a long period. For the person with asthma, regular practice of asanas will help to reshape the chest, improve posture strengthens the spinal cord, aid the flow of nervous energy, and rebalance the whole body. Many asanas can be performed with great benefit by the person with asthma.
The following are the most effective:-
(1)Surya Namaskara: Surya Namaskara performs it slowly and with breath awareness, practicing up to 7 rounds each morning at sunrise.
(2) Sukhasana (Easy Pose): Within 12 minutes of being withdrawn from the stomach Kunjal and Neti kriyas can both benefit from this practice. It is more powerful than Kunjal in many cases. If the strip of fabric gets wet in the middle of the stream. Urine swallowing in an emergency circumstance. It can be used every day for up to two weeks, but once a week is sufficient after that. breSpecific Asanas.
The idea behind asanas is to change one's physical posture to improve breathing capacity. Asanas are isometric movements that require the coordinated activity of synergistic and antagonist muscles to achieve stability and flexibility. In preparation for pranayama, the patient can expand lung capacity and strengthen intercostal muscles, back muscles, and diaphragm muscles with a mild and progressive asana practice. Specific Yoga Asanas The idea of using asanas is to improve one's physical posture.

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(1) Headstand (Sirshasana): This inverted asana is the most important. It is frequently performed after a yoga asana practice.
(2) Shoulderstand (Sarvangasana) is an inverted pose in which the body is supported by the shoulders.
(4)Matsyasana (Fish Position): This pose expands the rib cage, deepens the breath, and reverses kyphosis.
(5) Pachimothanasana (Sitting Forward Bend): This position uses gravity to calm and soothe the nervous system.
(6) Bhujangasana (Cobra Pose): This pose encourages thoracic-diaphragmatic respiration, expands the chest, strengthens the upper back and shoulders, and reduces kyphosis.
Shalabhasana (Locust Pose): Shalabhasana improves back muscles and relieves sciatica and back pain.
(9) Bow (Dhanurasana): It strengthens back muscles and keeps the spine supple, boosting posture and vitality.
(10) Spinal twist (ArdhaMatsyendrasana): ArdhaMatsyendrasana strengthens the spine's nerves and ligaments, promotes digestion and enhances the health of the liver and pancreas.
(11) Crow (Kakasana): This balanced pose improves the shoulders, arms, and back. wrists.
(12) Standing forward bend (Padahastasana): This inverted pose offers many of the same benefits as sitting forward bend, with the main physical benefit of stretching the full back side of the body from head to heels.
(13) Triangle (Trikonasana): Trikonasana (triangle posture) enhances the action of the Half Spinal Twist by providing an excellent lateral stretch to the spine, toning the spinal nerves, and assisting the digestive system's correct functioning.
Yoga can also help to get relief from asthma The word yoga is derived from Sanskrit “yuj” which means to join or union and to concentrate directly on one's attention[4,9]. Practicing yoga regularly promotes flexibility, strength, well-being, and many other qualities. Constant practice of yoga can yield some important changes such as the perspective of life, self-awareness, etc. According to the National Institute of Health yoga is considered to be the best alternative medicine. In this report, we have carried out a literature review on the topic of asthma[10-11].

III. LITERATURE REVIEW

The study reported by [12] considered two groups of people who are suffering from Bronchial asthma classified into Group A and Group B namely Yoga training group who have gone through several yogic pranayams for 8 weeks and daily track of record has been noted and pulmonary function tests were performed after 4 weeks and again after 8 weeks. The study carried out by [13] highlighted an increase in peak expiratory flow rate (PEFR) and Forced expiratory volume ($FEFV_1$). Similarly, a study reported by [14] reported the improvement in PEFR in the patients who use Pink City Lung Exercise (PCLE). On the other side study carried out by [15] no such difference in PEFR. All in all, Group A has shown a notable increase in forced mid expiratory flow FEF_{25-75} alongside Group B shows variable changes including a notable decrease from 4 weeks to 8 weeks. Additionally, research carried out by [16] on a comparative study of bronchial asthma on pranayama group and drug group highlights the effect of performing pranayam for 6 weeks yielded remarkable findings of reduction of inflammation of the patients performing pranayama. [16] carried out a 12-week yoga program on patients suffering from bronchial asthma that showed a significant increase in FVC, FEV1%, PEFR, and increase tolerance to CO_2. [17] experimented with over 54 people suffering from bronchial asthma that performed several yoga exercises and are advised to perform the exercises for 65 mins daily. Those in comparison with the patients consuming drugs showed a notable result. Several studies have highlighted the benefits of yoga in patients suffering from respiratory problems. While most of the study has shown the equivocal evidence. [18-20] also reported yoga helps to improve the quality of life and mood and decreases symptomology followed by a decrease in airway reactivity. [21] conducted a trial on a total of 824 patients who were included in 14 randomized controlled studies. For asthma control (RR, 10.64; 95 percent CI, 1.98 to 57.19; P 14.006), yoga was found to be more effective than standard care.Quality of life (SMD, 0.86; 95 percent CI, 0.39 to 1.33; P.001), and symptoms (SMD, 0.37; 95 percent CI, 0.55 to 0.19; P.001).peak expiratory flow rate (SMD, 0.49; 95 percent CI, 0.32 to 0.67; P.001), and ratio of forced expiratory flow rate (SMD, 0.49; 95 percent CI, 0.32 to 0.67; PSMD, 0.50; 95 percent CI, 0.24 to 0.75; P.001); volume in 1 second to forced vital capacity. Quality of life (SMD, 0.61; 95 percent CI, 0.22 to 0.99; P 14.002) and peak expiratory flow rate (SMD, 2.87; 95 percent CI, 0.14 to 5.60; P 14.004) were observed to have impacts of yoga when compared to psychological therapies. There was no evidence of yoga's effects when compared to fake yoga or breathing exercises. No effect was resistant to all possible causes of bias. Yoga was not linked to any major side effects. A study of 57 asthma patients [20] discovered a substantial change in FEV1 (Forced Expiratory in 1st Second) and PEFR in

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Impact Factor: 6.252

the yoga group after 8 weeks of regular yoga practice from the baseline. The quality of life in the yoga group was also dramatically enhanced, proving the usefulness of yoga in the therapy of bronchial asthma.

IV. DISCUSSION

Asthma is linked to higher airway resistance, lower forced respiration volumes and flow rates, pulmonary hyperinflation, and greater labor of breathing [12, 23]. Apart from traditional pharmacological asthma care, numerous complementary and alternative medicine (CAM) modalities, such as the ancient practice of yoga, are emerging as asthma adjunct therapies [24]. Many asthma patients are turning to breathe re-training[25,26]. Pranayama may have psychophysiological effects by aiding in the reduction of autonomic arousal variables by boosting the patient's sensation of control over stress. Yoga helps to maintain autonomic balance by favoring parasympathetic dominance over stress-induced sympathetic dominance. Yoga treatment balances the autonomic nervous system, slows down breathing, and relaxes the voluntary inspiratory and expiratory muscles, lowering sympathetic reactivity [26, 27]. Yoga improves breathing efficiency, balances opposing muscle groups' activity, and slows dynamic and static movements. Patients with mild to moderate symptoms of persistent bronchial asthma may benefit from pranayama [28]. yoga class to a regular yoga practice The significant drop in their drug treatment score, compared to a nonsignificant increase in drug consumption in the control group, supports this conclusion, as do the significant differences in the number of attacks per week and peak flow rate between the groups.McFadden demonstrated that asthma sufferers' airway responsiveness is considerably increased, with bronchoconstriction occurring in response to lesser amounts of physical, chemical, and pharmacological stimuli than healthy people.'0 Bronchial hyper-reactivity may be caused by a complicated interaction of multiple elements, including the smooth muscle's innate susceptibility to stimuli, an aberration in autonomic nerve regulation, and a breakdown in airway defenses. As a result, lowering the tracheobronchial tree's reactivity could help these people. Increased FVC, FEV1 percent, PEFR, and CO2 tolerance as evidenced by longer BHT and lower respiratory rate of respiration. Patients' symptoms improved, and they were more involved in their health care. Yoga breathing is a non-competitive, personal, low-cost, and fun activity that can yield incredible effects. As a result, we conclude that yogic breathing techniques, when combined with routine pharmacologic T/t, can enhance pulmonary function in nonsmokers with mild to severe bronchial asthma. However, the duration for which the effects of the yoga session program are retained is not studied. In the present study, the total duration of daily practice of yoga is about 60min. In today's busy life the duration should be less as possible.

4.1 Limitations of study

Just a few well-designed studies are looking into the therapeutic effects of yoga on asthma, including mild and moderate persistent asthma, and its impact on pulmonary functions and quality of life, to improve QOL and asthma control.

V. CONCLUSION

Yoga is a supplemental medicine that has a significant effect on the human body. The main finding of this review is that practicing yoga can reduce asthma symptoms and medication use, as well as enhance patients' quality of life by improving pulmonary function. The review has various flaws that make it impossible to compare the findings consistently. This review finds some evidence that yoga can be a useful technique in the management of asthma, and that it can be used in conjunction with traditional medical therapy to improve outcomes. It is suggested that future asthma research should take a multi-faceted strategy, with larger randomized trials supplemented by prospective observational studies and retrospective data processing and review.

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Volume 2, Issue 5, May 2022
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