

Role of Yoga in Asthma Management

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Received: 19/2/2015; Revised: 12/3/2015; Accepted: 20/3/2015

ABSTRACT

The Global Initiative for asthma guidelines defined asthma as a chronic inflammatory disorder characterized by reversible airways obstruction and airways hyper-responsiveness. It is a chronic disease that cannot be cured but medicines and life style changes can help to control these symptoms. Yoga is one of the methods that can help to increase muscular efficiency, endurance time and aerobic capacity, and can reduce perceived exertion after exercise. Yoga is widely used as a stress reliever. Additionally; yoga has a profound effect on the autonomic nervous system (ANS). A number of 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 the oxygen consumption and increase working efficiency. He inferred such a practice of yoga would be beneficial in many hypoxic conditions. Yogic practices reduce body weight, improve lung function, decrease respiratory rate, increase vital capacity and breath holding time.

Key Words- hyper-responsiveness, autonomic nervous system, hypoxic, pranayama

INTRODUCTION

Asthma is a chronic inflammatory respiratory disease characterized by periodic attacks of wheezing, shortness of breath, and a tight feeling in the chest. A cough producing sticky mucous is a characteristic symptom. Asthma is an ancient Greek word that means "panting", "gasping" or inflamed "tight feeling in the chest". It is very common in children, teens and adults. It is a condition where the air passages in the lungs become inflamed. The air passages are the airways that carry air in and out of the lungs. When the air passages get inflamed, it becomes red and swollen. It starts to swell and sticky mucous or phlegm is produced. All these factors cause the airways to become narrow and make it difficult to breathe. Asthma attacks when the lungs are not getting enough air to breathe with the results of coughing, wheezing, shortness of breath and a tight feeling in the chest.

Masoli et al (2014) reported that the prevalence of asthma is approximately 300 million cases all over the world and India alone has 30 million asthma patients (10% of the global burden). Asthma is increasing 50% per decade. Out of every 250 deaths, one is due to asthma worldwide.

Factors that precipitate an asthma attack are called triggers. They cause the air passages to get clogged and constricted; making it difficult for the patients to breathe. Asthma can be

triggered in sufferers by inflammatory triggers and symptom triggers. Inflammatory triggers causes inflammation of the lungs' airways or tightening of the airways' muscles. They include dust mites, animals, cockroaches, moulds, pollens, viral infections and certain air pollutants. Symptom triggers are non- allergic, they generally do not cause inflammation but can provoke 'twitchy' airways, if they are already inflamed. They include cold air, chemical fumes, air pollutants, smoke and intense emotions. Asthma in most cases starts either in childhood or in middle age. Early onset asthma is slightly more common in males and 'Late Onset' asthma in females.

Asthma is a chronic disease that cannot be cured but medicines and life style changes can help to control the symptoms. One way to relieve asthma is to avoid things in the environment that make symptoms worse. Quick relief medicines are used when symptoms are getting worse to prevent a full blown asthma attack. They can also be used to stop attacks once they have started. They are short acting inhaled bronchodilators. Long-term control medicines or controller medicines are taken every day usually over a long period of time.

The word "yoga" comes from a Sanskrit root "yuj" which means union, or yoke, to join, and to direct and concentrate one's attention (Lasater 1997 and Raub 2002). 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(Collins 1998). Sustained practice also leads to important outcomes such as changes in life perspective, self-awareness, and an improved sense of energy to live life fully with genuine enjoyment(Atkinson and Permeth-Levine, 2009).Yoga has been considered the best complementary and alternative medicine by the National Institutes of Health.

METHODOLOGY

The goal of the review is to explore possible benefits of yoga in asthma patients. A literature search was conducted using the terms yoga, pranayama, asthma, randomized controlled study or trial. A number of electronic resources and databases such as Global Initiative for Asthma (GINA) and clinical (e.g. Medline) and non-clinical were searched. The following inclusion and exclusion criteria were used.

Inclusion Criteria

- Study participants were adults from 18 to 60 years of age.
- Study participants having the diagnosis of mild to moderate persistent bronchial asthma
- Randomly divided patients into the yoga group and the control group

Exclusion Criteria

- The review was restricted to studies published in 2000 onwards.
- Studies related to research of other health conditions not related to yoga
- Studies not pertaining to the RCT study design
- Psychiatric illnesses in the patients
- Any other associated diseases other than asthma.

RESULTS

The above methodology resulted in six published randomised controlled trials to be included in this review. A summary of results are presented.

Singh et al (2012) concluded in a randomized controlled study of 60 patients that lung function improved significantly in the patients of the yoga group after two months of 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.

Mekonnen and Mossie (2010) have shown in a study the effect of yoga on 24 asthma patients for 2 months and they concluded a significant improvement of 10% was found in peak expiratory flow rate (PEFR) in the yoga group and also showed a decreased number of daily attacks per week and night attacks per month compared to the control group.

Ramaprabhu et al (2009) showed in a study of 57 asthma patients that significant change was found in FEV₁ (Forced Expiratory in 1st second) and PEFR in the yoga group after the regular practice of yoga for 8 weeks of study period from the baseline. This study supported the efficacy of yoga in the management of bronchial asthma as the quality of life was improved significantly in the yoga group too.

Sodhi et al (2009) concluded in a study of 120 asthma patients that yoga breathing exercises are beneficial and used adjunctively with standard pharmacological treatment significantly improves pulmonary function in patients with bronchial asthma.

Cooper et al (2003) monitored the effect of the Buteyko technique and pranayama in 69 bronchial asthma patients over a 6 month period. They reported that although there was no significant change in lung functions of the patients, yoga may be beneficial and improve symptoms, and thus reduce the need for bronchodilator.

Sabina et al (2005) found that pranayama reduces stress, a common asthma trigger. Breathing techniques and improved control of breathing by yoga in 62 patients of asthma may contribute to the control of asthma symptoms. Breathing exercises emphasized in yoga have the potential to improve lung function and quality of life in asthmatics.

DISCUSSION

Yoga is known for its beneficial effects on physiologic and psychologic functions.(Brown and Gerberg 2005, Wallace 1972, Telles et al 2007, Jorm et al 2002). During the last 3 decades, extensive physiologic research have been done on yogic practices. It has been reported that yoga can increase muscular efficiency, endurance time (Ray et al 1986) and aerobic capacity, and can reduce perceived exertion after exercise.(Sabina et al 2004, Telles and Desiraju 1991). Yoga is widely used as a stress reliever. (Raub 2002, Parshad 2004, Shapiro and Cline 2004, Woolery et al 2004) Additionally, yoga has a profound effect on the autonomic nervous system (Bhargava et al 1988, Telles et al 1984).

Stress can be sufficient to induce breathlessness in patients with asthma.(Van et al 1999).Patients with severe asthma have high levels of distress, particularly anxiety, even between attacks. Their attitude to their illness is multi- factorial and are significantly correlated with emotional distress, other illnesses and some demographic factors. Since stress can exacerbate asthma attacks, reducing stress is an important intervention for the prevention

and management of asthma. Yoga is used to reduce stress and thus helps in the management of asthma.(Jabber 2002).

Practice focused on meditation has also been found to be helpful in reducing symptoms and reliance on medication. (Manocha et al 2002). Improper or ineffective use of the breath can aggravate asthma. Breathing too quickly or mouth breathing can increase airway hyper-reactivity. Studies using a variety of pranayama techniques found benefit from the practice including decreased use of medications.(Singh et al 1990).

A number of studies examine the benefits of yoga practice to help manage asthma. Miles W. R. (1964) was one of the first persons to study the respiratory changes during pranayama which could reduce oxygen consumption and increase working efficiency. Yogic practices reduce body weight, improve lung function, decrease respiratory rate, increase vital capacity and breathe holding time. (Miles et al 1997).

LIMITATIONS OF THE STUDY

There are a limited number of well-designed studies exploring the beneficial effects of yoga on asthma including mild and moderate persistent asthma and its impact on pulmonary functions, quality of life with the aim to improve of QOL and control of asthma.

CONCLUSION

Yoga is one of the complementary medicines which has a great impact on the human body. The main finding of this review suggests that the practice of yoga can decrease the asthma symptoms and reduce medication use and can improve the quality of life of the patients with improvements in pulmonary function. The review has several limitations which makes it more difficult to compare the results homogeneously. This review provides some evidence that yoga may be an effective tool in the management of asthma and can be practiced as an adjuvant therapy to standard medical therapy for better outcomes. It is recommended that future asthma research to adopt a multi-dimensional approach, i.e. larger randomised trials to be complemented with prospective observational studies as well as retrospective analysis and evaluation of existing data.

Conflict of Interest (If present, give more details): None

Acknowledgment- We are thankful to Indian Council of Medical Research, New Delhi, India, King George's Medical University, U.P., Lucknow, India and Lucknow University, Lucknow, U.P., India

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