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Preventive and Curative Aspect of Yoga in Management of Asthma in Children

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Abstract

Asthma is characterized by an increased responsiveness of trachea and bronchi to various stimuli. It produces symptoms and signs similar to dyspnoea, cough and wheezing. In spite of all the recent advancement in the field of the management, prevalence is on uphill. Public approaching substitute system of medicine, increasing now-a-days, amid them *Asana* and *Pranayama* are two main techniques of yoga practiced in India. Standardized Yoga modules are suggested for children of age groups 7-12 years suffering from asthma for curative and preventive effects of yogic techniques. Many researches show that asthma is able to be cured by *Asana* and *Pranayama* by improving lung function. Yoga modules compromising of simple and efficient yogic techniques are almost suitable modality for the management of asthma amongst the children age groups 7-12 years.

Key words:

Asthma; Pranayama; Aasana; Yoga modules; Children

Introduction

Asthma is a serious global health problem. Public of all age groups in countries and throughout the world are consequence by this chronic airway disorder. It is a chronic lung disease that inflames and narrows the airways by spastic contraction of the smooth muscle in the bronchioles, that partially obstructs the bronchioles and cause recurring periods of shortness of wheezing, chest tightness, shortness of breath, and coughing [1,2].

This leads to disturbed sleep, restriction in day to day activities and school absenteeism in children. Numerous studies conducted in different countries have reported an increase in asthma prevalence of about 50% per decade [3]. In India prevalence of asthma in school going children has been reported with 4-20% in different geographical region [4]. It has been increased by two folds in last two decades. Asthma is a significant burden, regarding health care costs to the parents but also reduced participation in daily life activities of child, that cause of compact the immunity of a child.

Yoga is an ancient science, aim to bring about functional harmony involving body and mind through two main practices: asana and pranayama. Hath yoga is a physical method that uses the breath to link the various parts of the body to the mind and to allow them to behave as one functional unit that helps in the management of Asthma [5-7].

Pathophysiology of asthma

Asthma is a disease characterized by an increased responsiveness of the trachea and bronchi to various stimuli. It manifests by widespread narrowing of the airways causing paroxysmal dyspnea, wheezing and cough [8].

In Asthma, airway obstruction is caused because of following reasons: (i) Edema and inflammation of mucous membrane lining the airways, (ii) Excessive secretion of mucus, inflammatory cells and cellular debris and (iii) Spasm of the smooth muscle of bronchi. In the early stages, $PaCO_2$ level falls because of the hyperventilation that is caused by dyspnea. When obstruction becomes more severe, alveolar hypo ventilation increases that in turn leads to the retention of the CO_2 with a rise of $PaCO_2$. With the exhaustion of buffer mechanisms, pH of the blood falls that leads to respiratory acidemia [8].

Management of asthma

The goals of management are (i) Maintenance of regular pulmonary function (ii) Maintenance of usual physical activity (iii) Prevention of the cough or wheezing with minimal chronic symptoms and (iv) Avoiding adverse consequence of medication. Efficient management of asthma involves two major therapies that are pharmacotherapy and non pharmacotherapy, along with identification and elimination of exacerbating factors and education of patient and parents about temperament of disease. Pharmacotherapy (i.e. Oral and inhaled medicine) includes bronchodilators, corticosteroids, mast cell stabilizers, leukotrienes modifiers and immunotherapy. Initially this therapy is helpful in management of the disease, but later there be enhance in financial burden, morbidity and mortality. Non-pharmacotherapy includes Yogic techniques i.e., *Asana* (Physical exercises) and *Pranayama* (Breathing exercises) [9].

Yoga

The word yoga derived from the Sanskrit word 'Yuj' means to yoke or bind and is often interpreted as "union" or a method of discipline

[10]. According to Bhagwad Gita - Yoga is skilled action [10]. *Pranayama* is generally defined as breath control. The word *Pranayama* is encompass of two roots: *Prana* and *Ayam*a. *Prana* means 'vital energy' or 'life force', closely narrate to the air we breathe and Ayama is 'extension' or 'expansion'. Thus, the word Pranayama means 'extension or expansion of the dimension of Prana' (≈life, oxygen). The techniques of Pranayama provide the methods whereby the life force is able to be activated and regulated to go beyond one's regular boundaries and attain a higher circumstance of vibratory energy. Pranayama well thought-out breathing exercises aimed at introducing more oxygen into the lungs. These practices influence the flow of Prana in the Nadis and purifying, regulating and activating them, thereby inducing physical and mental stability [11].

Need of yoga

(i) To implement yogic techniques as drugless, substitute methods to prevent and cure asthma amid pediatrics age groups 7 to 12 years.

(ii) To reduce burden of escalating medicine cost in medicinal intervention of asthma therapy.

(iii) To avail the additional health benefits of Yogic techniques.

Effect of asana

Following are the some *Asanas* that are beneficial in the cases of Asthma [12,13].

Suryanamaskara: Enhances blood circulation and nutrient absorption. It increase lungs capacity, reduces irritation, short temperament, common cold & coughs.

The Shoulder Stand Pose- Sarvanga-asana: Beneficial in several endocrine gland anomalies, enhances blood circulation and nutrient absorption and increase lungs capacity. It is beneficial in irritation, short temper, common cold, urinary disorders.

The Plow Pose - Hala-asana: It increases lungs capacity, digestive power, endocrine function increase, muscles strength and flexibility in hands and body.

Cobra Pose - Bhujanga-asana: This posture increases the lungs capacity and gastric fire. It destroys all diseases; provide greater strength in these areas and flexibility in the lower back.

Common Benefits of Aasana: It increases the working efficiency of the all systems especially cardio respiratory system, increase capacity of lungs and reduces attack of asthma, increases functions of circulatory system, endocrine system, increases muscles strength, flexibility and immunity.

Effect of pranayama [14]

Improvement of respiratory efficiency reduces dead space volume of lungs, increases blood production and circulation, promotes new stem cell formation and also increases immunity. Rapid *Kapalbhati Pranayama* (Hyperventilation) is balancing the acid base homeostasis. In *Kapalbhati Pranayama* convenient is forced exhalation that causes contraction and relaxation activity in diaphragm and abdominal muscles that has beneficial effects on various organ of the stomach therefore organs of the stomach becomes strong and active that leads to plenty secretions from endocrine glands. Lungs take air 180-220 cubic inches. Normally 30 cubic inches air used during inhale and exhale and around 150 cubic inches remains in the lungs as residual air. A deep long breath with *Pranayama* is able to use up to 100 cubic inches of the air that making major part of the lungs air active. If the residual air gets purified, the food digested properly, organs become strong, and the body as a whole is cleaned .Short, incomplete and fast breathing does not live long life. The longer the breathing cycle and slower the rate of breathing, the longer is the life. This is secret behind the long life of tortoise and shorter life of Pigeon. By practicing *Pranayama* individual survive able to increase the life span and maintain their health.

Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimension of the individual. Various studies have shown the effectiveness of these techniques in asthma [15-17].

Pranayama has been suggested to be useful in the management of respiratory conditions such as asthma. Yoga includes deep, nasal breathing that strengthens the diaphragm and enables the lungs to fill completely to provide oxygen to the lower lobes. Nostril breathing helps in warming the air and filter out irritants making asthmatic attacks take away likely. In *Pranayama* focus is turned to the breath and inhalation is balanced with exhalation with slow, deep breaths. Asthma is a condition in that the bronchioles constrict causing symptoms such as wheezing, shortness of breath, and chest tightness [18]. Bidwell et al. found that a 10 week yoga intervention improved respiratory function and quality of life in a small population of asthmatic women [19]. In a larger randomized controlled trial the yoga group demonstrated improved pulmonary measures, including peak expiratory flow rate and initial forced expiratory volume as well as decreased event of exercise induced broncho constriction [20]. Manocha et al. found that airway hyper responsiveness to methacholine improved significantly in the *Yoga* group evaluate with controls [21].

Conclusion

Yoga modules compromising of simple and efficient Yogic techniques that are almost suitable modality for the management of asthma amongst the children age groups 7-12 years. Children's immunity decreases in asthma, by Yoga immunity is able to be improved that helps in reducing the disease. Yoga improved the working efficiency of respiratory coordination that help in prevention and cures of the disease. According to children's interest *Aasana* and *Pranayama* are able to be modulated under supervision of expert. In some clinical trials it has been proved that Yoga practices are successful if individual should doing with proper methods. *Pranayama* is relatively simple, rhythmic, low cost intervention that is capable to be incorporated into children's daily routine and have a positive force on health.

References

1. Paul-EP (1999) The Respiratory system. In: Jens Ingeman Jensen, Joop Madsen, Ole Siggaard-Andersen and Margrethe Lynggaard: medical physiology and pathophysiology essential and clinical problems. Copenhagen Medical Publishers, Copenhagen, Denmark.
2. The Glossary Committee of the international union of physiological sciences (IUPS) (1973) "Glossary on respiratory and gas exchange". J Appl physiol 35: 941-961.
3. Robert MK, Bonita MDS Joseph St.G, Nina S, Richard EB (2012) Nelson Textbook of Pediatrics. (19thedn), Elsevier Saunders, New Delhi, India: 781.
4. Ghai OP, Vinod PK, Aravind B (2009) Essential Pediatrics. (6thedn), CBS Publishers & Distributors, New Delhi, India: 354.

5. Swami shankardevananda Saraswati (2006) Asthma: Its diagnosis and treatment. Lecture at 2nd international Doctor's symposium, Ganga Darshan, Australia.
6. Brena SF (1972) Yoga and Medicine. Julian press inc, New York, USA.
7. Swami K, Vinekar SL (1971) Yoga therapy: Its basic principles and methods. D.G.H.S Ministry of Health, Government of India, New Delhi, India.
8. Ghai OP, Vinod PK, Aravind B (2009) Essential Pediatrics. (7thedn), CBS Publishers & Distributors, New Delhi, India: 358.
9. Ghai OP, Vinod PK, Aravind B (2009) Essential Pediatrics. (7thedn), CBS Publishers & Distributors, New Delhi, India: 360.
10. Singh R (2004) Swasthavritta Vignan. (1stedn), Chaukhambha Sanskrita Pratisthan, Delhi, India: 290.
11. Saraswati SS (2008) Asana Pranayama Mudra Bandha, (1stedn) Munger: Yoga Publication Trust, Bihar, India: 363.
12. Subhash R, Deshpande RR, Bobade RB (2005) A Text Book of Swasthavritta. (1stedn), Chaukhambha Sanskrita Pratisthan, Delhi, India: 288-299.
13. Ramdev S (2004) Yog its Physiology & Practice, revised edn. Hardwar: Divya Prakashan Divya Yoga Mandir Trust, Diamond Pocket Books (P) Ltd, India: 43-90.
14. Balkrishna A (2007) Yog In Synergy With Medical science. (1stedn), Hardwar: Divya Prakashan Patanjali Yogpeeth, India: 29-53.
15. Nagarathan R, Nagendra HR (1985) Yoga for bronchial asthma: a controlled study. Br Med J 291: 1077-1079.
16. Goyeche JR, Ikeniy A (1982) The Yoga Perspective part 11: Yoga therapy in treatment of asthma. J Asthma 19: 189-201.
17. Vedanathan PK, Kesavalu LN, Murthy K, Durall K, Hall MJ, et al., (1998) Clinical study of Yoga Techniques in university students with asthma: A control study. Allergy Asthma Proc 19: 3-9.
18. Timothy McC (2007) Yoga as Medicine: The Yogic Prescription for Health and Healing.
19. Bidwell AJ, Yazel B, Davin D, Fairchild TJ, Kanaley JA (2012) Yoga training improves quality of life in women with asthma. J Altern Complement Med 18: 749-755.
20. Vempati R, Bijlani RL, Deepak KK (2009) The efficacy of a comprehensive lifestyle modification programme based on yoga in the management of bronchial asthma: a randomized controlled trial. BMC Pulm Med 9: 37.
21. Manocha R, Marks GB, Kenchington P, Peters D, Salome CM (2002) Sahaja yoga in the management of moderate to severe asthma: a randomised controlled trial. Thorax 57: 110-115.