

MANAGEMENT OF RESPIRATORY SYSTEM DISORDERS THROUGH THE SYSTEM OF YOGA

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Abstract: In this review article mainly focused on the respiratory system disorders like Bronchial Asthma, Bronchitis and Sinusitis which are common chronic inflammatory diseases of the airways of lungs characterized by variables and recurring symptoms reversible airflow obstruction and bronchospasm. The system of yoga is basically designed for self-perfection and also is self-realization. During the course of its development yoga has evolved as one of the best, authentic and efficient health care systems of the present age. Almost all over the globe. Yoga practice has been incorporated as a part of the daily routine. Yoga besides being a drugless system known for prevention of disease and promotion of health can also help in effective management and rehabilitation of many ailments. Recently, Modern Medical System has realized the need of yoga system in managing many diseases. Keeping in view the potentials of yoga as prophylactic, preventive and curative, the holistic approach of the system of yoga is being considered as a therapeutic in modern times. Several scientific studies have shown the efficacy of yoga in managing various ailments. Based on the scientific evaluations of postures, breathing techniques and meditation or relaxation, the clinician can intelligently and effectively prescribe the combination of various yoga techniques for each individual patient.

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Introduction:

Respiratory System:

The respiratory system is one of the most important systems of human body. It acts as a stabilizer of total body of other systems and organs. The respiratory system is an organ system which is used for inhalation of air and gases, exchange of gases and exhalation of waste air and so many types of gases. The process of inhalation, Air is inhaled it passes through nostril, oral cavity, pharynx, larynx, trachea, bronchi, lungs. The lungs, lying on either side of chest, are spongy and porous with very elastic tissue. They contain innumerable air cells within the alveolar system of the lungs, molecules of oxygen and carbon dioxide are passively exchanged between the gaseous environment and the blood. Thus, the respiratory system facilitates oxygenation of the blood with a concomitant removal of carbon dioxide and other gaseous metabolic wastes from the circulation. Thus while inhalation is an active process, exhalation is a passive process. If there is some obstruction to exhalation the expiratory process must become active.

Disorders of Respiratory System:

Disorder it self says that something is unusual happen in the system, which can harm and even destroy the respiratory system. Now a days Asthma is an increasingly common disease that causes coughing and makes it hard to breath. People experience minor respiratory problems in the form of a sore, throat, cough, or serious problems like bronchitis. Lung cancer is a major cause of death particularly among smokers, T.B. is a disease caused by bacteria that can destroy the lungs. Some of the main disorders of respiratory system are Bronchial Asthma, Bronchitis and Sinusitis

The main disorders of respiratory system are Bronchial Asthma, Bronchitis and Sinusitis are common chronic inflammatory diseases of the airways of lungs characterized by variables and recurring symptoms reversible airflow obstruction and bronchospasm. Asthma often occurs in episodic order is called asthma attacks. An asthma attack is usually caused by triggers or changes in the environment. Common triggers include infections, changes in the weather, exercise, allergens and irritants in the environment. The attack happens in body's airways, which are the paths that carry air to lungs. As the air moves through the lungs, the airways become smaller. During an asthma attack, the sides of the airways in the lungs swell and the airways shrink, less air gets in and out of the lungs and mucous that the body makes clogs up the airways even more. An asthma attack may include coughing, chest tightness, wheezing and trouble breathing.

An asthma has such a wide spectrum of predisposing factors and clinical presentations that there is no uniform classification. Based on the severity of symptoms, it is classified into mild, intermittent, moderate and severe.

Clinical classification include steroid-dependent, steroid resistant, difficult and brittle asthma. Typically, asthma categorized into Extrinsic and Intrinsic.

Extrinsic: It is initiated by a type one hypersensitivity reaction induced by exposure to an extrinsic antigen.

Intrinsic: It is initiated by diverse, non-immune mechanism including ingestion of aspirin. Pulmonary infections especially viral, cold, inhaled irritants, stress and exercise.

Informal categories classify asthma according to the agents or events that trigger broncho-constriction. These include seasonal, exercise, drug and occupational asthma and asthmatic bronchitis in smokers. Allergic broncho-pulmonary asthma is partly an allergic reaction to fungus that has colonized the bronchial mucosa.

Early warning Signs of Respiratory System Disorders:

Frequent cough at night, shortness of breath, feeling very tired, coughing after exercise, easily upset, grouchy or moody, signs of cold and trouble sleeping.

Signs and symptoms of Respiratory System Disorders :

Asthma attack is characterized by severe dyspnoea difficulties in breathing with wheezing. There will be wheezing sound while a patient is breathing which may be marked in severe and chronic cases. The chief difficulty is in expiration. Tightness of the chest/discomfort in the chest may be usually seen. There may be unproductive cough, which may further aggravate the respiratory distress. There is a progressive hyperinflation of lungs with air trapped inside the bronchi, which are constricted. The respiratory symptoms are accompanied by tachycardia, pulsus paradoxus, sweating and central cyanosis in severe cases. Attacks last from one to several hours and relieved spontaneously or with therapy. Occasionally a severe paroxysm occurs which is called "status asthmaticus". The associated hypercarbia acidosis and severe hypoxia may be fatal.

The symptoms of either type of bronchitis include, cough that produces mucus, if yellow-green in colour it is more likely to have a bacterial infection, shortness of breath worsened by exertion or mild activity, wheezing, fatigue, fever- usually low and chest discomfort.

The symptoms of Sinusitis, the location of sinus pain depends on which sinus is affected. Headache when you wake up in the morning is typical of a sinus problem. Pain when forehead over the frontal sinuses is touched may mean that frontal sinuses are inflamed. Infection in the maxillary sinuses can cause upper jaw and teeth ache, and cheeks become tender to the touch. The ethmoid sinuses are near the tear ducts in the corner of eyes. Inflammation of these cavities often causes swelling of the eyelids and tissues around eyes and pain. Ethmoid inflammation causes tenderness in the sides of nose, a loss of smell and stuffiness of nose.

System of Yoga for Respiratory System Disorders:

Yoga is an ancient science originating in India and is seen to be the oldest system of personal and spiritual development in the world. Originating in India more than five thousand years ago Yoga benefits the body, mind and spirit. Yoga asanas (postures) and breathing deal with the physical body, but due to their effect on the brain, they also affect the mind. Yoga is a science of right living and it works when integrated in our daily life. It works on all aspects of the person: the physical, mental, emotional, psychic and spiritual. The word yoga means 'unity' or 'oneness' and is derived from the Sanskrit word 'yuj' which means 'to join' Man is a physical, mental and spiritual being; yoga helps promote a balanced development of all the three. Other forms of physical exercises, like aerobics, assure only physical well-being. They have little to do with the development of the spiritual or astral body.

Yogic exercises recharge the body with cosmic energy. This facilitates Attainment of perfect equilibrium and harmony. Promotes self-healing. Removes negative blocks from the mind and toxins from the body, Enhances Personal power Increases self-awareness, helps in attention focus and concentration, especially important for children.

Reduces stress and tension in the physical body by activating the parasympathetic nervous system the art of practicing yoga helps in controlling an individual mind, body and soul. It brings together physical and mental disciplines to achieve a peaceful body and mind, it helps to manage stress and anxiety and keep you relaxing. It also helps in increasing flexibility, muscle strength and body tone. It improves respiration, energy and vitality. Practicing yoga might seem like just stretching, but it can do much more for your body from the way you feel, look and move. Yoga poses require one to study each pose and execute them slowly with balance and concentration. Asanas work on all the systems of the body, also making the spine and joints supple. It tones up the muscles, glands and internal organs. Yoga asanas must be executed with proper breathing. Undoubtedly, yoga contributes to spiritual growth and improves the quality of life. Apart from increased flexibility in the muscles, chronic health conditions are treated and cured through the practice of yoga. Inner peace ensues after the practice of asana and pranayama and this enables the practitioner to tread life with purpose and direction.

The World Health Organization defines Asthma as "a disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. In an individual, they may occur from hour to hour and day to day.

This condition is due to inflammation of the air passages in the lungs and affects the sensitivity of the nerve endings in the airways so they become easily irritated. In an attack, the lining of the passages swells causing the airways to narrow and reducing the flow of air in and out of the lungs.

World-wide are, on average, rising by 50% every decade. And they are baffled by isolated incidents involving hundreds of people in a city, who suffer from allergies such as hay fever but who had never had asthma, suddenly being struck down by asthma attacks.

Yoga as a Therapy for Respiratory System Disorders:

The application of yoga system in the treatment of respiratory system disorders is very useful in many ways. By regular practice of yoga the stamina of respiratory system increases, mucus is drained out from lungs, acquaint the patient to use the lungs properly, relaxes the tensed chest muscles, energy blocks are released, energy levels are raised and the body & mind are calmed and harmonized.

The asanas relax the tense muscles of the chest thus facilitate easy breathing and release energy vlocks. Inverted postures help to drain the mucus from the lungs. The kriyas like vastradhouti and Kunjal also help in draining out the excess mucus from the lungs by reflex action. However, though asthma is a respiratory disease there appears to be a close link between the digestive system and the respiratory system, but the mechanism behind this link is not clear. This link is further confirmed by the fact that the kriyas like Kunjal and Vastradhouti, which primarily act on digestive system bears a significant role in the effective management of Bronchial asthma and other conditions.

Pranayam brings deeper benefits than the simple mechanical effect of exercising the lungs. Kapalbhathi and Bhastrika stimulate the lung tissues, relax the chest muscles and energise the whole system. Nadishodhana pranayama has a calming effect, working with meditation to bring harmony and peace. Meditation acts as a catalyser in the process of harmonization of the body and mind.

However, the cooling pranayamas like Sitali and Sitkari should be avoided as these may provoke broncho-constriction. The chandranadi pranayama also be avoided as this particular practice stimulates the parasympathetic nervous system, which may further aggravate the broncho-constriction.

The kriyas like Jananeti and Sutraneeti are of immense use in case of Sinusitis. They not only cleanse the upper respiratory passages but also reduce the hypersensitivity of the nasal mucosa to the external stimuli. These practices also help in draining out the excessive mucosa or cough from the sinuses along with the Kapalbhathi practice.

Review of Literature and Research studies in Respiratory system disorders:

Yoga is a system for the complete development of the personality¹² - physical, mental, intellectual, vital and spiritual - of a human being¹. It is a methodical, conscious effort towards self perfection by the unfoldment of the latent potentialities in an individual. In practice, it is a technique of calming down of the mind. It is the hypersensitivity and psychological conflicts leading to emotional upsurges that cause great stresses at the subconscious level². This may percolate in to the physical frame manifesting as diseases. 3, 6, 8 Hence, Yoga in its general methodology of perfecting an individual, through removal of stresses, contains the therapeutic aspects of treating such stress induced diseases. Bronchial asthma, characterized by episodic airway obstructions with intervals of complete normalcy is a well recognized psychosomatic ailment³. Reported herein is the preliminary observations in the use of Yogic practices for the treatment of bronchial asthma using an integral technique of physical exercises and Yoga posture (asanas), breathing practices and Pranayama, cleansing processes (Kriyas) and meditation⁴.

Yoga Asanas as distinguished from physical exercises are special physical postures congenial for calming down the mind and for developing stability of the nervous system and the power of forbearance. Prana is the inner vital life entity and Pranayama is to gain control over Prana. While simple breathing practices help to normalize the shallow, haphazard breathing. Pranayama uses certain slow breathing Pranayama rhythms and pattern to tranquil the mind and to reduce the metabolic rate and strengthen the respiratory and nervous systems⁵. Kriyas are techniques developed in Yoga to cleanse the interior of the body like nasal passages, alimentary tract etc⁶. They also activate and revitalize the internal organs. Meditation is a direct method of calming down the mind and allowing the mind to stay in a single thought. Deep relaxation, freshness and alertful rest are the characteristics of meditation. An appropriate combination of these practices provides a simple and effective tool to solve one own psychological conflicts and attenuate the emotional upsurges. Thus, the deep rooted subconscious stresses causing ill-effects on the some are erased.

At least two-thirds of sinusitis cases caused by bacteria are due to two germs that can also cause Otitis media in children as well as pneumonia and acute worsening of chronic bronchitis. The National Institute of Allergy and Infectious diseases is supporting multiple studies to better understand the basis for infectivity of these organisms as well as identifying potential candidates for future vaccine strategies that could eliminate these diseases.

Scientific studies have shown a close relationship between having asthma and sinusitis. As many as 75% of people with asthma also get sinusitis. Some studies state that up to 80% of adults with chronic sinusitis also had allergic rhinitis. NIAID conducts and supports research on allergic diseases as well as bacteria and fungi that can cause sinusitis. This research is focused on developing better treatments and ways to prevent these diseases.

Scientists supported by NIAID and other institutions are investigating whether chronic sinusitis has genetic causes. They have found that certain alterations in the gene that causes cystic fibrosis may also increase the likelihood of developing chronic sinusitis. This research will give scientists new insights into the cause of the disease in some people and points to new strategies for diagnosis and treatment.

Another research study supported by NIAID that blood cells from people with chronic sinusitis make chemical that produce inflammation when exposed to fungal antigens, suggesting that fungi may play a role in many cases of chronic sinusitis.

Nagarathna, R. and Nagendra, H.R. (1985) concluded Yoga for bronchial asthma⁷ : a controlled study-fifty three patients with asthma underwent training for two weeks in an integrated set of Yoga exercises, including breathing exercises, suryanamaskar, Yogasana (physical postures), Pranayama (breathing slowing techniques), dhyana (meditation) and a devotional session, and were told to practice these exercises for 65 minutes daily. They were then compared with a control group of 53 patients with asthma matched for age, sex and type and severity of asthma, who continued to take their usual drugs. There was a significantly greater improvement in the group who practised Yoga in the weekly number of attacks of asthma, scores for drug treatment, and peak flow rate. This study shows the efficacy of Yoga in the long term management of bronchial asthma.

Sodhi C.,Singh S.and Dandona P.K.[2009], done a research on “ A study of the effect of Yoga training on pulmonary functions in patients with bronchial asthma⁸”. The study contains the following. The role of yoga breathing exercises, as a adjunct treatment for Bronchial asthma is well recognized. One hundred twenty patients of asthma were A (randomized into two groups i.e., Group yoga training group) and Group B (control group). Each group included sixty patients. Pulmonary tests were performed on all the patients at baseline, after 4 weeks then after 8 weeks. Majority of the subjects in the two groups had mild disease (34 patients in Group A and 32 in Group B). Group A subjects showed statistically significant increasing trend ($P < 0.01$) in % predicted peak expiratory flow rate (PEFR), forced expiratory volume in the second (FEV1), forced vital capacity (FVC), forced mild expiratory flow in 0.25-0.75 seconds (FEF25-75) and FEV1/FVC% ratio at 4 weeks as compared to Group B. thus, yoga breathing exercises used adjunctively with pharmacological treatment significantly Pulmonary function improve in patients with bronchial asthma.

A many studies are done to evaluate the effect of yoga management in bronchial asthma. The yoga intervention program in such studies was daily 30 minutes for 12 weeks.

Conclusion:

The System of yoga is one of the efficient system of treatment for Respiratory System Disorders. By regular practice of yoga in our daily life that will keep us away from all the disease. One must have patience, punctuality, Presence of Mind in their practice is very essential. Minimum Breathing, Asanas, Relaxation, Meditation must be include in our daily routine. Kriyas Must be done once in a week. These are all the minimum capsules of Respiratory System Disorders.

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