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Intervention of Yoga Practices Along with Dietary and Life Style Modification in Patient Under Medication of Asthma Patient- A Case Report

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ABSTRACT:

Asthma is a disease characterised by a heightened sensitivity of the airways to numerous stimuli, such as allergens and irritants, resulting in airway blockage. Swelling of the lining and increased mucous secretion are caused by constriction of muscles around the airway and inflammation. In this case, female patient aged 25 years was diagnosed asthma in the OPD of Vallabhbhai Patel Chest Institute. She has 5 years history of Asthma. Yoga protocols was given to her weekly 4 days with 30 min duration for 45 days in Yoga Therapy Department of Vallabhbhai Patel Chest Institute (VPCI). Finding of this case study suggests that the regular Yoga practice improves the quality of life and pulmonary function in patients with asthmatic conditions. Specific Yoga practices are effective tool in the management of asthma and its associated disorders and symptoms.

KEY WORDS: *Asthma, Yoga, Breathing Difficulty, Yoga Therapy*

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INTRODUCTION:

The Global Initiative for Asthma (GINA) considers bronchial asthma a heterogeneous disease, usually characterized by chronic airway inflammation. [1] It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough. It varies in intensity over time, together with variable expiratory airflow limitation. Women are more likely to get affected than males. Although many people develop asthmatic conditions but symptoms can strike anyone at any age. It is observed that after the age of 20, women are more prone to get asthma. Around 300 million people worldwide suffer from asthma, with an additional 100 million expected to be impacted by 2025. [2]

Allergies are responsible for at least 30% of adult asthma cases. Adults who are allergic to cats may be at a higher risk of acquiring asthma later in life. Adults may develop asthma symptoms after being exposed to allergens or irritants such as cigarette smoke, chemicals, mould, dust, or other substances typically found in their surroundings (e.g., at

home or at work). Hormonal changes in women may play a role in the development of adult-onset asthma. Some women experience asthma symptoms for the first time during or after pregnancy. Women going through menopause may also experience asthma symptoms.[3]

Yoga system which consists of physical postures (*Asanas*), breathing methods (Pranayama), meditation (*Dhyana*) and other Hatha Yoga techniques is effective in the management of Health and wellbeing of individuals across the globe. It has evolved with diverse practices with emphasis on physical and mental aspect of human being.[1] Several researchers have demonstrated that yoga has positive effects in people with bronchial asthma. The majority of these studies were short-term, had no controls, or were qualitative but relied on subjective assessments.[4]

Case Presentation

In this case, patient aged 25years reported in the OPD of Vallabhbhai Patel Chest Institute with respiratory problem. She used to have non-veg and later she turned to Vegetarian. She used to take regularly typical vegetarian food and 1 to 2 litres of water. She used to wake up around 8 and slept around 11.30 pm and most of the days, she used to get a sound sleep. She had no physical activity. She was diagnosed asthma from OPD of Vallabhbhai Patel Chest Institute after pulmonary investigations. She had 5 years history of asthma on and off with medication.

Present Medical History

Ms. X got covid-19 symptoms and tested positive. She got admitted to hospital and got treatment for 1 month. After few days, she noticed breathing difficulty, pain in the shoulder joints and uneasiness. She got reference from the family doctor and visited Vallabhbhai Patel Chest Institute. She was taking treatment since last 1 year from this institute but not regularly. On the reference from the OPD of Vallabhbhai Patel Chest Institute, she further approached Yoga Department. She reported sleeping problem, chest pain in the morning, anxiety and asthmatic disorders while visited Yoga about asthma on the first day.

Clinical Findings

Patient was diagnosed with Asthma by Spirometry test from the Vallabhbhai Patel Chest Lab, followed with post-Covid illness and complaint of chest pain, headache, breathing problem, dyspnoea associated with digestive irregularities and disturbed sleep.

Medications.

In the last 2 years, the Patient had been following Medications referred by doctor in Vallabhai Bhai Patel Chest Institute OPD.

1. Inhaler budetrol 400(2 dose per day)
2. Inhaler tiate 9mcg (2 dose per day)
3. Tab pulmoclear – 14 days
4. Tab omez 20mg – 14days before food

Yogic Management and Dietary Modifications:

She started on 16th August 2023.Alternate days in a week for 45 days. Every session included 30 min structured Yoga practices. The individual Yoga protocol (Table-2) session for 30 min for asthma followed with Post covid illness, was planned as follows:

Dietary & Life style Modifications:

She started dietary modifications and life style modifications on August 16th 2023

1. Drinking warm water empty stomach early in the Morning.
2. Avoid salt intake too much.
3. Soup, boiled / steamed vegetables every day.
4. Avoid all cold food like ice cream, cool drinks etc.
5. Drink warm water before going to bed.

Follow_up:

1. She had been regularly updating her status through phone.
2. Patient was advised to visit Yoga OPD 3 times in a week for class.

Management:

The Yoga protocol practice was primarily focused on the loosening of the shoulder joints, chest and neck to release the tightness from upper back which makes her practice

comfortably. The practice focused on specific asanas for improving body alignment and thoracic expansion. The protocol is modified with simple asanas like Tadasana, Bhujangasana. For synchronizing breath with movements, further breathing practices like hands in out breathing, ankle stretch breathing and pranayama like Anulom-vilom pranayama, Bhramari were practiced. In the relaxation part patient was advised to do shavasana for 12 min observing breathing pattern.

Table- 1: Details of questionnaire used for assessment of Severity.

Grade	Description of Breathlessness	Yes/No
0	Breathlessness only due to strenuous activities/exercise	Yes
1	Gets short of breath when hurrying on ground level or walking up a slight hill	Yes
2	On level ground, walk slower than people of same age due to breathlessness, have to stop for breath	No
3	Stops for breath after walking about 100 yards or after a few minutes on the ground level	Yes
4	Breathlessness to leave the house or breathlessness when dressing	No

By the above questionnaire (Table-1), the difficulty in breathing was assessed in day-to-day activities.

Table- 2: Details of Yoga Practice Management:

Sr. No.	Practice Title	Practice Name	Time Period/Repetition
1	Sukshma vyayama	Greva Shakti vikasaka Skanda Shakti Vikasaka Waist Twisting	3 rounds 3 rounds 5 rounds
2	Asanas	Deep Breathing(abdomen) Hands in and out breathing Ankle stretch Breathing Tadasana with modifications Shashankasana Bhujangasana Padahasthasana	5 rounds 3 rounds 3 rounds Hold for 30 sec Hold for 30 sec Hold for 30 sec Hold for 30 sec
3	Pranayama	Anulom – vilom Bhramari	9 rounds 9 rounds
4	Meditation & Relaxation	concentrate on Breath Shavasana	15 min

Table-3: Pre-post % changes on different physiological variables in patient

Variables	Before Yoga	After Yoga	% Change
Pulse Rate	80/min	73/min	8.7%
Respiratory rate	18/min	15/min	16%
SpO2	98	98	-
Blood pressure	130/80	130/80	-
Symptom Score	3	1	66%
Weight	48kg	49kg	2%

RESULTS:

Baseline readings were noted before intervention and after 3 weeks of Yoga practice, There was a noticeable improvement in pulse rate about 8.7% and in respiratory rate about 16%, oxygen level and blood pressure remained same, symptom score reduced from 3 to 1 and weight increased by 1 kg and also improvements were observed in the post covid illness like breathing difficulty, chest pain, exertion and anxiety due to asthmatic attack.

Pulse rate and Spo2 values assessed by oximeter, respiratory rate and symptom score assessed by Spirometry, weight assessed by weighing machine, blood pressure assessed by sphygmomanometer. There was no change in the SpO2 and blood pressure (Table -3) in the post assessment. In other variables changes were observed as shown in Table-3.

DISCUSSION:

This Case report shows the effects of yoga on respiratory functions, symptom control and quality of life in asthma patients. In the comparison of pre and post test score. There is a significant improvement in oxygen levels, pulse rate, weight, and symptom score.

The simple Yoga practices like breathing helps in slowing down the breath rate and increasing the quality of breath. Patient was advised to do the practices slowly and synchronize the breath with movements. This helps in the reduction of hyperventilation, resulting in possible reduction of bronchospasm and breathlessness. In addition, patient also noticed changes in her behaviour, decreased anxiety, as she started working without any fear as earlier. She improved endurance of the respiratory muscles that might have ultimately helped the patient to feel better.

The present report has demonstrated that adding the mind-body approach of yoga to the predominantly physical approach of conventional care results in measurable improvement in some subjective as well as objective outcomes in bronchial asthma. Regular practice of *Yoga* is good to achieve complete health. It provides relaxation of mind, energizes the body and improves the quality of life of the asthmatic patients. Effectiveness of relaxation therapy has been studied in a group of asthmatics. They found mental relaxation to be more effective than muscular relaxation in the improvement of pulmonary function and subjective measures. [5]

The *Yogic* practices including *Pranayama* on asthmatic patients reported a significant degree of relaxation, positive attitude toward asthma and exercise tolerance. The study also showed a tendency toward lesser usage of beta-adrenergic inhalers[6]. Slow respiratory rhythm, deep breathing muscles and comfortable and relaxed atmosphere will provide optimal ventilation. Optimal ventilation occurs when patient with asthma is doing yogic breathing i.e. pranayama. Normally a person only uses 10-15% of one's ability to breathe every day. Yoga exercises will increase the amount of air exchange in the lungs which leads to increase in partial pressure of oxygen in the alveoli so that diffusion in the alveoli and capillaries increases. In normal conditions, the amount of air entering the lungs in one minute is as much as 16 x 400 ml, while at the time of doing yoga exercises this number increased up to 4 x 4800 ml. [7]

Many carried out studies show that yoga can reduce the asthma symptoms effectively and non-invasive ways. It will help in achieving a balance between mind, body, and soul and also improves the energy levels of the body. Yoga includes asana, pranayama, meditation, which plays an important role in reducing asthmatic symptoms. Apart from yoga, other vigorous exercises will put exertion on muscles and will cause stress for the whole respiratory system including heart pumping rate, pressure of the blood vessels etc. [1]

CONCLUSION:

Yoga is one of the complementary therapies which puts great impact on human body. Yoga therapy may play vital and complementary role in the prevention of metabolic and non-communicable diseases. Finding of this case study suggests that the regular practice of yoga can improve the quality of life of the patients with improvements in the pulmonary function. Yoga practices are effective tool in the management of asthma and its associated disorders. Further, robust research design with scientific assessment tools is required to carry out with large sample size to generalise the findings of such research in future.

Conflicts of Interests:

Authors declare no conflicts of interests.

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