"बेटी बचाओ, बेटी पढ़ाओ"

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Treatment of asthma disorder in relation with yogic concepts and physiotherapy

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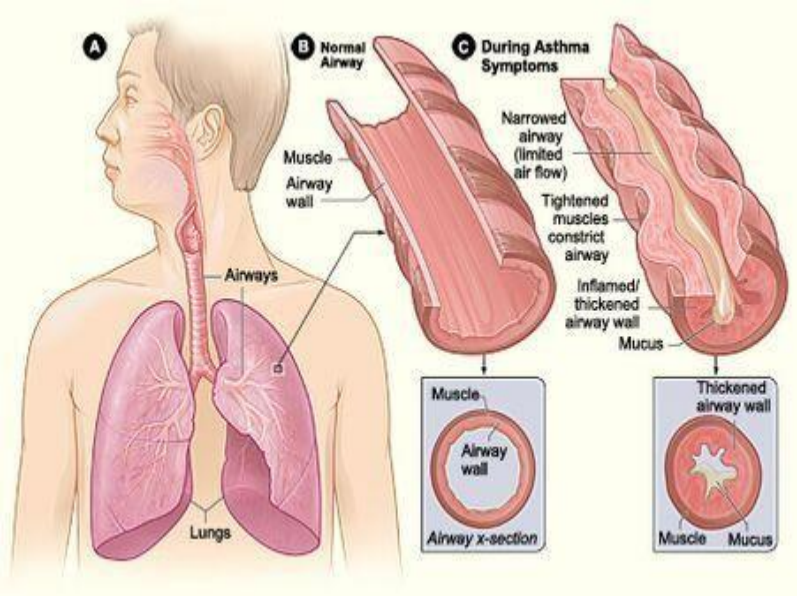
Abstract:

Asthma is the most common respiratory disorder in Canada. Despite significant improvement in the diagnosis and management of this disorder, the majority of Canadians with asthma remain poorly controlled. In most patients, however, control can be achieved through the use of avoidance measures and appropriate pharmacological interventions. Inhaled corticosteroids (ICS) represent the standard of care for the majority of patients. Combination ICS/long-acting beta2-agonist inhalers are preferred for most adults who fail to achieve control with ICS therapy. Biologic therapies targeting immunoglobulin E or interleukin-5 are recent additions to the asthma treatment armamentarium and may be useful in select cases of difficult to control asthma. Allergen-specific immunotherapy represents a potentially disease-modifying therapy for many patients with asthma, but should only be prescribed by physicians with appropriate training in allergy. In addition to avoidance measures and pharmacotherapy, essential components of asthma management include: regular monitoring of asthma control using objective testing measures such as spirometry, whenever feasible; creation of written asthma action plans; assessing barriers to treatment and adherence to therapy; and reviewing inhaler device technique. This article provides a review of current literature and guidelines for the appropriate diagnosis and management of asthma in adults and children.

Keywords: asthma, history, inhaled corticosteroids, beta agonist, IgE

INTRODUCTION



Asthma is a relatively common condition that is characterised by at least partially reversible inflammation of the airways and reversible airway obstruction due to airway hyperactivity. It can be acute, subacute or chronic and/or exercise induced.

Asthma is a major non- communicable disease (NCD), affecting both children and adults. It Affected an estimated 262 million people in 2019 and caused 461000 deaths. It is the most common chronic disease among children. Inhaled medication can control asthma symptoms and allow people with asthma to lead a normal, active life. Avoiding asthma triggers can also help to reduce asthma symptoms. Most asthma-related deaths occur in low- and lower-middle income countries, where under-diagnosis and under-treatment is a challenge.

Asthma is a chronic inflammatory condition. The previous emphasis on bronchodilator therapy, which does not treat the underlying inflammation, may be misplaced. Earlier introduction of anti-inflammatory agents, such as corticosteroids or cromolyn sodium, is strongly recommended. Effective suppression of airway inflammation reduces the need for bronchodilator therapy and may reduce the morbidity and, perhaps, mortality of asthma.

Review of literature :

Asthma, which is a chronic inflammatory disease of the airways, has been on the rise over the past decade with increasing prevalence within children in the United States (Centers for Disease Control and Prevention [CDC], 2009). It is estimated that a total of 22 million individuals suffer from asthma, with nearly 6 million of these individuals being children (National Institutes of Health [NIH], 2008).

Physical side effects of the condition include coughing, wheezing, shortness of breath, and chest tightness (NIH, 2008). These symptoms could greatly impact the quality of life experienced by the asthmatic individual due to restriction of activity, discomfort, embarrassment, and the constant concern for their condition.

It is crucial to identify such conditions early on and implement appropriate treatment given that patterns of behaviour developed during childhood serve as predictors of development of adult disease (Rand, Auinger, Klein, & Weitzman, 2005); thus, poor management of asthma in childhood and adolescence can lead to ineffective management in adulthood. This increases the risk of developing additional diseases such as obesity or cardiac disease due to the restrictions (such as exercising) placed on an individual with improperly managed asthma.

Furthermore, the severity of asthma as a chronic condition is demonstrated in that approximately 5,500 individuals die from asthma-related emergencies each year, and the overall financial costs of asthma reached an estimated $18 billion in 2009(Asthma and Allergy Foundation, 2010).

Reduce AsthmaWith Yoga, Pranayama, and Asanas

Typically, asthma treatment involves medication and preventive measures like avoiding triggers. Some say yoga can also help alleviate asthma symptoms.

Precaution:When trying these yoga techniques, keep your rescue inhaler nearby. Move gently and slowly.

Breathing exercises

Breathing exercises are designed to help you gain control of your breath. When practiced correctly, these techniques can promote more effective breathing.

1. Pursed lip breathing

Pursed lip breathing is a technique that relieves shortness of breath. The exercise brings more oxygen into your lungs, which slows down your rate of breathing.

2. Diaphragmatic breathing

If you have asthma, your body must work extra hard to breathe. Diaphragmatic breathing reduces this effort by opening the airways, strengthening your abdominal muscles, and increasing your lung and heart function. This exercise may help soothe your asthma symptoms.

3. Asana yoga moves

- Bridge Pose
- Cobra Pose
- Seated spinal twist

4. Pranayama yoga moves

- Alternate nostril breathing
- Victorious breathing

Physiotherapy treatment for asthma

Removal of secretions

There are some various techniques available for mobilizing and removing secretions. Percussions, vibrations, huffing and shaking techniques are used to mobilize the secretion and move these secretions to central airways to evacuate it. Postural drainage, suctioning and coughing techniques are used to remove mobilized secretions. Active cycles of breathing and autogenic drainage are also used for this purpose.

Posture

Patient should be in tripod position while asthmatic attack. Both hands should be on ground with wide base and neck should be in forward flexion. It relieves breathing difficulties. Chest expansion exercise also improves air re distribution and oxygenation.

Breathing control techniques

Buteyko breathing –

patient should be in sitting position. Patient should breathe in shallow and slowly. Expiration should be prolonged until patients feel no air in the lungs. After that, breathing should be held for 5 seconds. This technique maintains normal carbon dioxide level, eliminate hyperventilation of the lungs through breath control and breathe holding.

These above stated management helps to eliminate hyperventilation of lungs, reduces use of bronchodilator and anti inflammatory drugs, air trapping and dyspnea. It also improves quality of life.

Methodology /Method

This was a pre-and-post study of all asthmatic patients managed in the pulmonary clinic. The study period was approximately 18 to 19 months. An asthma education program was implemented which includes on-site certified asthma educators. We included all asthmatic patients that

participated in structured asthma education and had clinic follow-up. Outcomes were compared for the same group of patients during the pre-education period) and the post educationperiod.

1. **Primary Outcomes Included**. Primary outcomes included the following:

(1) Number of patients requiring ER visits during the pre-education and post education periods

(2) Number of patients requiring hospital admission during pre-education and post-education periods. In addition to ER or hospitalization at our institution, we included patients' reports of other ER visits or hospitalization due to asthma.

2. **Secondary Outcomes Included**. Secondary outcomes included the following:

(1) Change in asthma control assessed by the Asthma Control Test (ACT) score at visit following the asthma education

(2) Number of pulmonary clinic visits during pre-education and posteducation periods Multiple ER visits or admissions were defined as more than one ER visit or hospitalization for asthma during the study period.

3. Structure of the Asthma Education Program. The asthma educators included two on-site certified asthma educators, a bilingual (English and Hindi) respiratory therapist and a clinical

4. pharmacist. The education was done in the patient's preferred language with help of interpreter services, if required. Translator phone services are available.

5. The education sessions consisted of a personalized (oneto-one) 30-minute sessions with an asthma educator. Documentation in the electronic medical record (EMR) followed a structured asthma education note. This form captures data including demographics, ACT score, medications, adherence with medications, and asthma action plan.

Result & Discussion/ Data Analysis & conclusion

According to the National Health Interview Survey of 2014, approximately 30 million people had been diagnosed with asthma in their lifetime. 17.7 million (7.4%) adults still have asthma; out of these, around 7 million (43.6%) suffered from asthma attacks in 2014 .

The number of patients with asthma increased by 28% from 2001 to 2011 . The estimated total cost of asthma to society was $56 billion (2009 dollars) in 2007. This included -

- medical expenses,
- loss of productivity resulting from missed school or work days,
- and premature death .

The Global Initiative for Management and Prevention of Asthma (GINA) guidelines were developed to improve the care and control of the disease .

Asthma education is recommended for all children and adults as part of management . Multiple studies have shown that education improves outcomes like

- asthma-related emergency room (ER) utilization and hospitalization,
- unscheduled physician visits,
- days off work,
- and quality of life (QoL) .

Studies showing improvement in QoL and decreased ER utilization and hospitalization utilized multiple education sessions over few months . Inadequate home characteristics, exposure to environmental tobacco smoke, air pollution, and sustained exposure to indoor and outdoor pathogens are some factors that have been associated with development of respiratory diseases in this population **.**

Demographic Data.

250 patients participated in initial education; 19 patients were excluded as they were lost in follow-up. 231 patients were analysed. the baseline characteristics of the patients.

Distribution of the severity of asthma was as follows:

- 2.6% intermittent,
- 23.8% mild,
- 53.7% moderate,
- and 19.9% severe persistent.

- At least a third of our patients had comorbid conditions: psychiatric illness followed by gastroesophageal reflux and obesity were the most common . Anxiety and depression accounted for majority of psychiatric diseases.

- 132 (56.7%) of the 231 patients were given an asthma action plan during education.

- 50 patients (22%) received more than one education session, 42 (18%) received two sessions, 9 (4%) received three sessions, and one (0.4%) received four education sessions.

In the management of asthma, implementation of a single adult asthma education session as part of physician visit had a positive impact on asthma control and healthcare utilization. We suggest that models like this could be easily developed in a socially disadvantaged population. Carefully chosen educators could minimize institutional cost,as they could fill other gaps in the patient care.

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