

**IMPLICATION OF BUTEYKO BREATHING TECHNIQUE IN ASTHMATIC
POPULATION: A LITERATURE REVIEW**

ABSTRACT

BACKGROUND: Complementary and experimental medicine is gaining interest in the treatment of asthma around the world. This study summarizes the literature on complementary and alternative medicine approaches that use breathing retraining, i.e., BBT, as a primary component. Eight publications followed the selection criterion. The majority of randomised controlled trials (RCTs) of the Buteyko breathing technique observed a substantial reduction in beta-2-agonist use, while some found an increase in quality of life or a reduction in inhaled corticosteroid use. It is rational for professionals to provide trained care to asthma patients who are undergoing BBT.

AIM: The aim of this research is to provide background for BBT, analyse the available evidence for its efficacy, and evaluate the physiological framework behind it.

METHODS: The analysis of literature is carried out by studying papers from electronic databases such as Cochrane, Medline, Embase, AMED, PEDro, Google Scholar, Elsevier, APTA, Campbell, Web of Science, and ResearchGate.

CONCLUSION: Individual studies using BBT consistently showed a reduction in asthma medication use. In either of the BBT experiments, no significant difference in lung ability was found. BBT detractors argue that drug reduction can be due to the physicians' influence, which is difficult to determine. Longer follow-up is needed to show that the improvement in asthma treatment as measured by drug usage is sustained over a clinically appropriate time span.

KEYWORDS: Asthma, Breathing Techniques, Buteyko, Apnoea, Alternative Therapy, Randomized Controlled Trials, Quality of Life, BBT.

INTRODUCTION

Asthma is a persistent respiratory and assorted condition affecting 1-8% of the population in different countries. It is characterized by chronic airway inflammation with variable symptoms like a wheeze, shortness of breath, chest tightness or cough, and expiratory airflow limitation, which is often triggered by factors such as exercise, allergen or irritant exposure, change in weather, or due to respiratory indisposition of virus.^[1]

According to CDC (Centers for Disease Control and Prevention) data, in the USA, asthma prevalence in 2017 is 7.9%, with rates higher in children (< 18 years, 8.4%) than in adults (18+ years, 7.7%). Asthma incidences have increased in the USA from 7.3% in 2001 to 7.9% in 2017. Globally, asthma remains the common cause for relevant morbidity and mortality.^[2] The prevalence rate in the Indian population for asthma has increased from 7.9% in 2004-2005 to 10.1% in 2011-2012 among adults.^[3]

Pharmacotherapy for the asthmatic patient includes bronchodilators (salbutamol, levalbuterol) which inhibit the constriction of bronchial smooth muscles which is seen in asthma, and anti-inflammatory drugs (such as glucocorticoids, leukotriene modifiers, and mast cell stabilizers) which are used to reduce the chronic inflammatory process that promotes bronchospasm in asthma. The main objective of pharmacologic therapy is to deliver rapid relief of acute asthma symptoms and to initiate long-term control of inflammation and bronchospasm.^[4] According to the BTS guidelines, hypoxia should be corrected using high concentrations of inspired oxygen (40-60%) via a high flow mask along with the use of oxygen-driven nebulized beta-agonist (salbutamol). Corticosteroids can be administered orally as prednisolone or parenterally as hydrocortisone. In most severe exacerbations, BTS recommends the preposition of continuous nebulization.^[5] The Buteyko Method is fundamentally a breathing training approach that instructs patients on how to control their habit of over-breathing or hyperventilating. It is based on the hypothesis of the late Ukrainian Physician Dr. Konstantin Buteyko, who suspected that carbon dioxide deficiency was a major cause of many chronic diseases. He asserted that his method of breathing retraining, which focuses on raising carbon dioxide, could reportedly benefit up to 150 diseases.

Individuals who perform and practice BBT (Buteyko Breathing Technique) continue to use their medications prescribed while learning the method. After a few weeks or so, the

individuals may find out that they need to use notably less symptomatic reliever medications like a beta-agonist.

The BBT teaches you how to breathe properly through the nose (not the mouth) and with the diaphragm to improve nitric oxide and carbon dioxide levels in the body. When done properly, Buteyko's breathing encourages the activation of the parasympathetic nervous system, as a consequence of which blood pressure is reduced, depression is reduced, and the immune system is strengthened.^[6]

METHODOLOGY

The research was carried out by examining the specifics of previously published papers.

YEAR: 1998-2020

KEYWORDS: Asthma, Breathing Techniques, Buteyko, Apnoea, Alternative Therapy, Randomized Controlled Trials, Quality of Life, BBT

INCLUSION CRITERIA: 1] Randomized Controlled Trial

2] Case Study

3] Systematic Review

4] 1998 to 2020

EXCLUSION CRITERIA: 1] Comparative Study

2] Narrative Review

3] Papers including multiple conditions

DISCUSSION

Buteyko technique is a version of the Russian methodology that was first presented in Australia and is now utilised globally. It has the similar emphasis on ventilation management. The Buteyko technique would avoid the negative effects of steroids, enhance the patient's quality of life, and, most crucially, be outlay. In addition, patient compliance may be higher than with steroids.

The Bowler et al. study found a 54% improvement on the quality of life scale after 6 weeks^[7]. In a 2008 research conducted in Canada by Cowie et al, 129 individuals with asthma were randomly assigned to either a Buteyko practitioner or a chest physiotherapist to undergo a

series of breathing exercises. The proportion of patients attaining satisfactory asthma control in the Buteyko group improved from 40% at baseline to 79% at 6 months^[11]. Patrick McHugh et al. in his investigation found no change in forced expiratory volume. However, the experiment found no negative impacts from using the Buteyko regimen^[9]. In a research conducted by Opat et al, the results showed a significant increase in quality of life among those who received the BBT over those who received a placebo. The purpose of this study was to see if the BBT, as presented in a video, is an effective asthma treatment^[8].

Among the complementary and alternative medicine (CAM) approaches used in asthma treatment, BBT has received the most attention. Individual trials using BBT reliably demonstrated a decrease of asthma drug usage and, when combined with pulmonary physiotherapy, also demonstrated an increase in quality of life (QoL) and subjective perception of asthma symptoms. However, no substantial change in lung capacity was observed in any of the BBT trials, which may account for the optimistic findings. It's also conceivable that the studies' ability to identify improvements in lung function parameters was inadequate. Large-scale experiments can show an impact. Studies that investigated the potential underlying mechanism in BBT discovered a substantial rise in end-tidal CO₂ in the successful intervention arm.

Critics of BBT contend that medication reduction may be attributed to the clinicians' effect, which is impossible to assess. On the other hand, there was no suggestion of a detrimental impact on asthma management with reduced drug use, and symptoms may have improved to some degree. Longer follow-up is needed to demonstrate that the increase in asthma management as calculated by medication use is maintained over a clinically relevant period of time and that BBT has no adverse effects.

Despite the lack of evidence for physiological improvements that account for the reported results, a reduction in drug usage could be beneficial given the potential systemic consequences of ICS use.

CONCLUSION

In asthmatic patients, this study supports the efficacy of Buteyko breathing exercise above normal care. There was a statistically significant improvement in daily asthma control, asthma severity, pulmonary function-forced expiratory volume in one second (FEV₁), and peak expiratory flow rate (PEFR) in patients who used Buteyko breathing exercise compared to those who did not.

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