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REVIEW

The effectiveness of physiotherapy in patients with asthma: A systematic review of the literature

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Summary
Since the introduction of medical therapy for asthma the interest in non-medical treatments deteriorated. Physiotherapy could have beneficial effects in asthmatics. This review investigates the effectiveness of physiotherapy in the treatment of patients with asthma.

A review was performed on the terms breathing exercises (BE), inspiratory muscle training (IMT), physical training (PhT) and airway clearance (AC) in patients with asthma.

The search resulted in 237 potentially relevant articles, after exclusion 23 articles remained. BE ($n = 9$) may improve disease specific quality of life (QoL), reduce symptoms, hyperventilation, anxiety and depression, lower respiratory rate and medication use. IMT ($n = 3$) can improve inspiratory pressure and may reduce medication use and symptoms. PhT ($n = 12$) can reduce symptoms, improve QoL and improve cardiopulmonary endurance and fitness.

In conclusion, physiotherapy may improve QoL, cardiopulmonary fitness and inspiratory pressure and reduce symptoms and medication use. Further studies, investigating combinations of techniques, are needed to confirm these findings.

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Introduction

Asthma is an inflammatory disorder with airway hyperresponsiveness leading to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, especially during the night and the early morning.[1,2] Asthma develops primarily at a young age, but may also occur in adulthood. The prevalence of asthma is about 5—10% in children[1] and approximately 3% in adults.[3]

Asthma has a significant impact on individuals in terms of quality of life, it affects school or work attendance and performance and reduces activity levels. The treatment of asthma consists of both medical, primarily through inhalation medication, and non-medical therapy. The aim of treatment is to achieve a normal lifestyle with a normal exercise capacity, the avoidance of serious asthma attacks and the achievement of an optimal lung function with as few symptoms as possible.[1,3] Since the introduction of medical therapy for asthma, interest in non-medical treatments deteriorated.

Non-medical treatment of asthma may consist of several aspects including education, guidance of patients and various forms of physiotherapy. Physiotherapy may have beneficial effects since most asthmatics have a dysfunctional breathing pattern and poor physical condition. As a consequence, this may cause problems in participation in sports, school gymnastics and playing outside.

Cochrane reviews concerning physiotherapy

In the last decade five Cochrane reviews[4—8] were published concerning physiotherapy in children and adults with asthma. These reviews examined the effect of various treatments (namely Alexander technique,[4] breathing exercises,[5] manual therapy,[6] physical training,[7] and inspiratory muscle training (IMT)[8]) in patients with asthma. For two reviews, the number of included studies were too small to draw conclusions.[4,6] The other three reviews[5,7,8] did find several significant results, but due to the small number of included studies, the small patient numbers per study and the different methods and outcome measures, the reliability of these results is limited. From these five Cochrane reviews it can be concluded that too little reliable studies have been performed to draw a conclusion on the effectiveness of physiotherapy in asthma. Furthermore, literature searches for these reviews took place up to 2002 (IMT), 2003 (breathing exercise), 2004 (manual therapy) 2005 (physical training) and 2010 (Alexander), which underlines the need for an update of the literature.

Despite the limitations of the Cochrane reviews, especially the three physiotherapy techniques breathing exercises, IMT and physical training are techniques which are promising in asthmatics and which are practiced by various patients.