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Commentary

Physical Exercise as Rehabilitation Technique in Pediatric Asthma Patients

Brian Sims*

Department of Neonatology, University of Alabama at Birmingham, Alabama, USA

DESCRIPTION

Children frequently suffer from bronchial asthma, a persistent respiratory condition whose cause is unknown. The majority of researches show a connection between genetic and environmental variables, including allergy, viral illness, and particulate matter, smoking, and ozone exposure. Breathlessness, coughing, shortness of breath, and wheezing are the primary clinical manifestations of asthma. These symptoms are easy to develop or aggravate at night and in the early morning, require long-term treatment due to repeated attacks and prolonged treatment, and may cause irreversible lung function damage. In extreme circumstances, these manifestations will have an impact on children's quality of life, growth, development, and ability to exercise.

More than 300 million children worldwide currently suffer from bronchial asthma, and a global analysis of the ISAAC study and other publications revealed that the prevalence of asthma was, on average, 10% for children aged 6-7. Therefore, the focus of international research has shifted to efficiently treating and preventing childhood asthma. At the moment, medications including glucocorticoids, antihistamines, β-2 agonists, and leukotriene receptor antagonists are the cornerstones of asthma prevention and therapy. The focus of pulmonologists has switched to discovering a secure and efficient alternative therapy because most medications have a limited effect and a number of negative effects.

Exercise's ability to reduce airway inflammation and postpone or reverse airway remodelling has received a lot of attention in recent years. Exercise is strongly advised by medical personnel during the development of the epidemic of new coronavirus pneumonia (COVID-19) in China as a critical means for the recovery of pulmonary function in COVID-19 patients.

Additionally, it is covered in COVID-19's rehabilitation recommendations for combining traditional Chinese medicine and Western medicine. According to the Global Initiative for Asthma (GINA) recommendations, kids with asthma should engage in physical activity like other kids their age. This is seen as a crucial component of the non-drug prevention and treatment plan for kids with asthma.

As a result, exercise has also been utilised to improve quality of life, exercise capacity, and lung function in children with bronchial asthma, although the effects on prevention and therapy are different. An aerobic exercise intervention demonstrated substantial advantages over no exercise in reducing asthma-related symptoms, lung function, exercise capacity, and quality of life. Exercise, however, used to be thought of as the cause of asthma, especially in patients with exercise-induced asthma, and kids would cut back on or stop exercising due to frequent attacks.

In children with bronchial asthma, swimming for 6-12 weeks considerably outperforms standard therapy in terms of improving pulmonary function indices like FEV1% pred and FEF25-75% pred; however, no significant difference was seen in FVC% pred, FEF50% pred, or other indices. It is yet uncertain whether exercise can help children with bronchial asthma regain their lung function or whether it can enhance their pulmonary function, exercise capacity, and quality of life. In order to objectively and quantitatively assess the effectiveness of exercise rehabilitation and to provide a scientific and rigorous basis for clinical respiratory and rehabilitation doctors in their clinical work and scientific research.

However, it showed the benefit of exercise in terms of pulmonary function, physical function, and quality of life scores, all of which can work as standards for therapeutic exercise rehabilitation of children with asthma. The particular clinical effects are still contested, so high-quality, large sample size randomised controlled trials must be performed in the future for validation and assessment.

Correspondence to: Brian Sims, Department of Neonatology, University of Alabama at Birmingham, Alabama, USA, E-mail: r.simsbrian@gmail.com

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