Evaluating pulmonary function, aerobic capacity, and pediatric quality of life following a 10-week aerobic exercise training in school-aged asthmatics: a randomized controlled trial

Abdelbasset WK, Alsubaie SF, Tantawy SA, Abo Elyazed TI, Kamel DM (2018)

Patient Preference and Adherence

Background:

It has been documented that aerobic exercise may increase pulmonary functions and aerobic capacity, but limited data has evaluated a child's satisfaction and pediatric quality of life (PQoL) with exercise training.

Objectives:

This study aimed to investigate the effects of moderate-intensity exercise training on asthmatic school-aged children.

Subjects and methods:

This study included 38 school-aged children with asthma (23 males and 15 females) aged between 8-12 years. They were randomly assigned to two groups, aerobic exercise (AE) and conventional treatment (Con ttt) groups. The AE group received a program of moderate-intensity aerobic exercise for 10 weeks with asthma medications and the Con ttt group received only asthma medications without exercise intervention. A home respiratory exercise was recommended for the two groups. Aerobic capacity was investigated using maximal oxygen uptake (VO_{2max}), 6-minute walk test (6MWT), and fatigue index. PQoL was evaluated using Pediatric Quality of Life Questionnaire (PQoLQ). Also, pulmonary function tests were performed, and the results recorded.

Results:

The findings of this study showed significant improvements in pulmonary functions and VO_{2max} in the two groups; however, this improvement was significantly higher in the AE group than in the Con ttt group (p<0.05). The

6MWT and fatigue index improved in the AE group (p<0.05) but not in the Con ttt group (p>0.05). All dimensions of PQoL significantly improved in the AE group (p<0.05), but there was no significant improvement in the Con ttt group after the 10-week intervention period (p>0.05).

Conclusion:

Ten weeks of physical exercise had beneficial effects on pulmonary functions, aerobic capacity, and PQoL in school-aged children with asthma. Effort and awareness should be dedicated to encouraging the active lifestyle among different populations, especially asthmatic children.

KEYWORDS:

asthma; exercise-induced bronchoconstriction; maximum oxygen uptake; moderate-intensity exercise; pediatrics