

primary studies - published RCT

Efficacy and safety of lumacaftor/ivacaftor combination therapy in patients with cystic fibrosis homozygous for Phe508del CFTR by pulmonary function subgroup: a pooled analysis.

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Study design (if review, criteria of inclusion for studies)

Randomized controlled trial

Participants

Children diagnosed with CF aged 6-18 years. 19 subjects (13 boys) were included (CON = 11; and EX = 8). Mean age was 12.2 ± 3.3 , FEV(1) (forced expiratory volume in the first second) z-score was 1.72 ± 1.54 and peak oxygen consumption (VO_2 peak) 42.7 ± 7.4 mL.Kg⁽⁻¹⁾.min⁽⁻¹⁾.

Interventions

A short-term resistance exercise program. Individuals were divided into two groups: control (CON) and resistance-training (EX). Individuals in the EX group completed an individualized guided resistance program (5-RM-60-80%) for 8 weeks (3 sessions of 60 min/week). Upper and lower limbs exercises (seated bench press, seated lateral row, and leg press) were used.

Outcome measures

Heart rate variability (HRV) was measured using a Suunto watch with subjects in lying position.

Main results

Exercise induced significant changes in the frequency-domain variables, including a decrease in LF power ($p = 0.001$, $d = 0.98$) and LF/HF ratio ($p = 0.020$, $d = 0.92$), and an increase in HF power ($p = 0.001$, $d = -0.97$), compared to the CON group. No significant changes were found for time-domain variables, although increases with a moderate effect size were seen for SDNN ($p = 0.152$, $d = -0.41$) and RMSSD ($p = 0.059$, $d = -0.49$) compared to the CON group.

Authors' conclusions

A short-term resistance exercise-training program was able to modulate HRV in children and adolescents with CF presenting mild to moderate lung function impairment and good physical condition.

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See also

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Keywords

exercise; non pharmacological intervention - devices OR physiotherapy; training; Combined Modality Therapy; Aerobic training; Chest physiotherapy; strength training;