primary studies - published RCT

Exercise intolerance, oxidative stress, and irisin in pediatric cystic fibrosis: Can telehealth-based exercise training make a difference?

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

Randomized-controlled trial

Participants

Thirty-nine children with CF (mean age=11.41±2.18 years, mean FEV(1)(z-score)=-0.66±1.96) were included in the study.

Interventions

Telehealth-based exercise training using different modalities (combined exercise training group, CombG, core stabilization exercise group, SG. The children were randomly allocated to groups. The CombG and SG performed core stabilization exercises (CS) 3 days per week for 8 weeks. The CombG also performed aerobic exercises 3 days per week in addition to CS. Physical activity (PA) recommendations were provided to the CG.

Outcome measures

Exercise capacity was evaluated using the Modified Shuttle Test (MST). Oxidative stress was assessed using total antioxidant status (TAS), total oxidant status (TOS), Oxidative Stress Index (OSI), malondialdehyde (MDA), and superoxide dismutase (SOD). The irisin level was also measured.

Main results

Children's baseline sex, age, BMI, and FEV(1) z-scores were similar ($p > 0.05$). The MST distance ($p = 0.047$,np(2)=0.157) and%MST distance ($p = 0.045$, np(2)=0.159) significantly improved in the CombG compared with the SG and CG. Although TAS and SOD decreased over time ($p < 0.05$), no significant changes were observed for TAS, TOS, OSI, MDA, SOD, and irisin parameters between the groups after training ($p > 0.05$).

Authors' conclusions

Combining aerobic exercise training with core stabilization applied using telehealth improved exercise capacity more than core stabilitation training only or PA recommendations in children with CF.

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See also

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Keywords

Adult; Child; Adolescent; Caregivers; Home; Home Care Services; non pharmacological intervention - psyco-soc-edu-org; telemedicine; Organization;