primary studies - published RCT

Inspiratory flow rate and dynamic lung function in cystic fibrosis and chronic obstructive lung diseases.

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

RCT. Parallel design.

Participants

66 children with CF: aerobic training male: female 9:13; resistance training male: female 10:12; control male: female 9:13. Group demographics: mean (SD) age 13.2 years (2.0 years) for aerobic training. Mean (SD) age 13.1 years (2.1 years) for resistance training group. Mean (SD) age 13.2 years (2.0 years) for control group. No dropouts.

Interventions

Short-term aerobic and anaerobic study. Comparison of aerobic exercise (30 minutes supervised training 5 times per week) versus resistance training (30 minutes supervised training 5 times per week) versus no specific training during hospital admission (mean duration 18.7 days, range 14 - 36 day

Outcome measures

Included in this study were: VO2, peak, VE, VCO2; peak HR; quality of life; FEV1, FVC; weight; lower limb strength; and fat-free mass.

Main results

There were no significant differences between the three groups in terms of disease severity, and length of stay in hospital. Subjects in all three groups received intravenous antibiotics and nutritional supplementation as determined by the physician. Children randomized to the aerobic training group participated in aerobic activities for five sessions, each of 30-min duration, a week. The children randomized to the resistance training group exercised both upper and lower limbs against a graded resistance machine. Subjects in the control group received standard chest physiotherapy. Our study demonstrated that children who received aerobic training had significantly better peak aerobic capacity, activity levels, and quality of life than children who received the resistance training program. Children who received resistance training had better weight gain (total mass, as well as fat-free mass), lung function, and leg strength than children who received aerobic training.

Authors' conclusions

A combination of aerobic and resistance training may be the best training program, and future studies to assess optimal training programs for CF patients are indicated.

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See also

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Keywords

Adolescent; Child; exercise; non pharmacological intervention - devices OR physiotherapy; training;