
primary studies - published RCT

Effects of hyperoxia on oxygen uptake kinetics in cystic fibrosis patients as determined by pseudo-random binary sequence exercise.

Code: PM10029341

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

RCT

Participants

9 CF patients and 13 healthy controls (HC)

Interventions

they exercised while breathing humidified and heated air with a fractional concentration of oxygen in inspired air (F(I)O₂) of either 0.21 or 0.40.

Outcome measures

VO₂ kinetics

Main results

With a F(I)O₂ of 0.21 the respiratory exchange ratio (R) was higher in CF than in HC both at rest (0.91 vs 0.81) and during exercise (0.97 vs 0.89). Oxygen saturation (SO₂) was slightly lower in CF, but remained above 90% during exercise (92.7% vs 95.2%). Spectrum analysis revealed that in CF, the amplitude ratio (AR) between VO₂ and exercise intensity was lower over a wide frequency range (P

Authors' conclusions

In CF patients low AR and PS would indicate an attenuated VO₂ response attributable to an impaired oxygen utilization in the muscles because the oxygen supplement normalised SO₂ but failed to improve R and VO₂ kinetics.

<http://dx.doi.org/10.1007/s004210050494>

See also

Eur J Appl Physiol Occup Physiol. 1999 Jan;79(2):192-6.

Keywords

Adolescent; Adult; Child; exercise; non pharmacological intervention - devices OR physiotherapy; Oxygen; Chest physiotherapy;