primary studies - published RCT

Comparison of DNA-lipid complexes and DNA alone for gene transfer to cystic fibrosis airway epithelia in vivo.

Code: PM9294121 **Year:** 1997 **Date:** 2001 **Author:** Zabner J

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

randomized trial

Participants

8 patients with cystic fibrosis

Interventions

Patients performed two randomly assigned incremental (15 w.min-1) cycle ergometer tests to fatigue. One test involved inhalation of 20 ppm nitric oxide plus compressed air (NO), the other only compressed air (AIR).

Outcome measures

Arterial oxyhemoglobin saturation, oxygen consumption, heart rate, minute ventilation, time to exhaustion, and maximal power output were all recorded.

Main results

There were no significant differences in maximal oxygen consumption, time to exhaustion, or power output between AIR and NO. Nor were there any difference between heart rate and minute ventilation during the two tests. Arterial oxyhemoglobin saturation was not different at rest but was significantly lower in the NO condition at 75 and 100% of maximal oxygen consumption (75% = -1.5 ± 0.3 vs -2.6 ± 0.5%; 100% = -2.8 ± 0.7 vs. -4.7 ± 1.2%, p

Authors' conclusions

While the difference in arterial oxyhemoglobin saturation values at 75 and 100% maximal oxygen consumption were statistically significant, physiologically they had no effect on maximal performance measures. These results suggest that nitric oxide failed to improve exercising arterial oxyhemoglobin saturation and may not have elicited any more detrimental effect on gas transfer than breathing a normal room air mixture.

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See also

J Clin Invest. 1997 Sep 15;100(6):1529-37.

Keywords

exercise; Inhalation OR nebulised; non pharmacological intervention - devices OR physiotherapy; cycle ergometer; Training; Chest physiotherapy; nitric oxide;