primary studies - published RCT

The effect of oxygen on sleep, blood gases, and ventilation in cystic fibrosis.

Code: PM6426355 **Year:** 1984 **Date:** 1984 **Author:** Spier S

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

Randomized cross-over trial, single center.

Participants

10 participants (CF and COPD) initially recruited, 2 participants analyzed separately due to history of snoring. 8 people with CF, mean age 22, 5 males and 3 females, all with severe lung disease. Selected for the study if in stable clinical state and SaO2 less than 92% on random arterial blood gas.

Interventions

Patients were studied on 2 nights, 1 with oxygen and 1 with air at 2 L/min

Outcome measures

Measures of sleep quality, tcPCO2 and SaO2, respiratory events.

Main results

The NLFO had no effect upon sleep quality in our patients. The minimal SaO2 occurred during REM sleep and averaged 79.4%. With NLFO, this improved to 92.7%. The average maximal rise in TcPCO2 was 5.6 mmHg on falling asleep while breathing air; this increased a further 5.1 mmHg with NLFO. Two patients also had obstructive sleep apnea. Their SaO2 improved dramatically with NLFO, with no deterioration of ventilation. In 4 patients, ventilation was measured quantitatively. The only consistent changes during air were an increase in abdominal contribution to tidal volume and a drop in minute ventilation from Stage 3-4 to REM sleep of 26%, almost entirely caused by a drop in breathing frequency. The same changes occurred with NLFO.

Authors' conclusions

NLFO is effective in alleviating the nocturnal hypoxemia of patients with CF with stable COPD and does not cause clinically important hypercapnia.

http://www.mrw.interscience.wiley.com/cochrane/clcentral/articles/937/CN-00451937/frame.html

See also

American Review of Respiratory Disease YR: 1984 VL: 129 DE: RCT NO: 5

Keywords

non pharmacological intervention - devices OR physiotherapy; Oxygen; Ventilators; Sleep Disorders;