primary studies - published RCT

Low-flow oxygen and bilevel ventilatory support: effects on ventilation during sleep in cystic fibrosis.

Code: PM11208637 **Year:** 2001 **Date:** 2001 **Author:** Milross MA

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

Randomised, cross-over trial.

Participants

13 participants with CF with severe lung disease. Mean (SD) age 26 (5.9) years. Mean (SD) FEV1 % predicted, 31.7(10.6); awake PaO2 range 53-77 mmHg; PaCO2 â‰¥ 45 mmHg; mean (SD) BMI 20 (3) kgm2.

Interventions

Order of intervention randomised. Night 1: Room air and low-level CPAP (4 - 5 cm H2O). Night 2: Oxygen (1.4 +/- 0.9L/min to maintain SaO2 â‰¥ 90%) and low-level CPAP (4 - 5 cm H2O). Night 3: BVS +/- oxygen (0.7+/-0.9 L/min to maintain SaO2 â‰¥ 90%). 3 nights within a 1-week period. Time between nights unclear.

Outcome measures

VI, VT; RR; respiratory disturbance indices; SaO2 TcCO2.

Main results

During RA and LFO2 studies, patients wore a nasal mask with a baseline continuous positive airway pressure (CPAP) of 4 to 5 cm H2O. Minute ventilation (V I) was measured using a pneumotachograph in the circuit and was not different between wake and non-rapid eye movement (NREM) sleep on any night. However, V I was reduced on the RA and LFO2 nights from awake to rapid eye movement (REM) (p

Authors' conclusions

BVS leads to improvements in alveolar ventilation during sleep in this patient group.

http://ajrccm.atsjournals.org/content/163/1/129.full.pdf+html

See also

Am J Respir Crit Care Med. 2001 Jan;163(1):129-34.

Keywords

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