

primary studies - published RCT

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

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### 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  $\approx$  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  $\approx$  90%) and low-level CPAP (4 - 5 cm H2O). Night 3: BVS +/- oxygen (0.7 +/- 0.9 L/min to maintain SaO2  $\approx$  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;