



Mouth breathing compromises adherence to nasal continuous positive airway pressure therapy.

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STUDY OBJECTIVES: Mouth leak compromises nasal continuous positive airway pressure (CPAP) therapy. We hypothesized that patients who breathe mainly through their mouths during sleep, compared to those who breathe mainly through their noses, would have more mouth leak during CPAP and therefore lower adherence to CPAP. **DESIGN:** A case-control study to compare adherence to CPAP at 1 year in mouth breathers (MBs) with nose breathers (NBs). **SETTING:** University teaching hospital with a sleep laboratory. **PATIENTS:** Fifty-one CPAP-naive patients (4 women), with a respiratory disturbance index (RDI) > 15/h. Of the 51 patients, 30 patients breathed through their mouths (mouth breathing > 70% of total sleep time [TST]), and 21 patients breathed through their noses (mouth breathing < 30% of TST). MBs between 30% and 70% of TST were excluded. **INTERVENTIONS:** Overnight polysomnography was performed at baseline, during CPAP titration, and at 3 months. Patients were followed up for 1 year after beginning CPAP. **MEASUREMENTS AND RESULTS:** To measure mouth breathing, nasal and oral thermistors during polysomnography were separated by a 3 x 6-cm silicon transverse diaphragm. RDI decreased from (mean +/- SD) 37.8 +/- 21.5 to 1.8 +/- 2.6/h at 3 months. Throughout the study, adherence to CPAP (mean daily CPAP use in hours) was better in NBs. Most NBs (71%) but only 30% of MBs used CPAP daily for > 4 h at 1-year follow-up. Mouth breathing decreased significantly from 84 +/- 8.9% at baseline to 22 +/- 14.4% at 3 months. **CONCLUSION:** Patients with moderate-to-severe sleep-disordered breathing and a high percentage of mouth breathing during sleep were less adherent to CPAP therapy than patients exhibiting a low percentage of mouth breathing.

PMID: 15486389 [PubMed - indexed for MEDLINE]