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Title: Can we predict successful CPAP treatment in upper airways resistance syndrome?

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Body: Patients with upper airways resistance syndrome (UARS) and excessive daytime sleepiness are offered continuous positive airway pressure (CPAP) in our unit. We assessed effectiveness of this and explored factors that may predict treatment success. Demographics, BMI, Epworth sleepiness score (ESS) and polysomnography data were collected for patients diagnosed with UARS between 1/10/09–1/6/11. Follow-up established current ESS, CPAP treatment compliance and success rates. 82 patients were diagnosed with UARS; 77% male. Mean age was 54 yrs (SD 13), mean BMI 35 (SD 7) and mean initial ESS 12 (SD 5). 34 of 47 patients followed up had been offered CPAP. 50% reported successful treatment. Patients offered CPAP had a higher initial ESS than those not offered (13.3 vs 9.1, p=0.01) and a greater reduction in ESS at follow up (-4.7 vs -0.6, p=0.03). Of 34 patients started on CPAP, 16 (47%) discontinued treatment. 81% of patients who stopped CPAP did so due to discomfort. Baseline ESS was similar in patients who did and didn't continue treatment (p= 0.40). The successful treatment group had higher initial ESS than the unsuccessful group (14.9 vs 11.6, p=0.04). 56% of those with initial ESS ≥10 reported treatment success. 83% patients with ESS <10 reported treatment failure. Pulse transit time arousals per hour, 2% Oxygen Desaturation Index (ODI), 3% ODI, age and BMI did not vary between treatment outcome groups. Our results suggest CPAP is effective in about half of patients with UARS. Baseline ESS was the best predictor of success. Polysomnographic data, BMI and age were not associated with successful CPAP treatment. Conservative measures should be considered in those with less daytime somnolence.