Physiological Responses in OSA Patients to Ramping Exercise After CPAP Treatment.

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(ABSTRACT)

Continuous positive airway pressure (CPAP) is the primary therapy administered for those afflicted with obstructive sleep apnea (OSA). We examined the effects of CPAP therapy on physiological variables during a ramped exercise. The five male, OSA patients had mean values and standard deviations for RDI=60.7±19.1, BMI=29.9±2.9, and age=56±16.1 yr. Subjects were examined before and after 4 wk of CPAP therapy. After 4 wk of CPAP therapy, patient responses to exercise showed a 17.6%, (p<0.05) improvement in rating of perceived exertion (RPE) at identical power outputs (60% of the individual's apparent functional capacity). Statistical significance was not attained (p>0.05) upon analysis of the following parameters at 60% of the individuals maximum workload although there was a trend showing a decrease in these variables: heart rate (6% improvement), VO2 (11.7% improvement) systolic blood pressure (4% improvement), and rate pressure product (8.6% improvement). This data shows that the decrease in RPE during 60% of the individual's maximum predicted HR reserve corresponded with an increase in sleep quality (mean increase of 40%, 3.2 units) as measured by the Pittsburgh Sleep Quality Index before and after 4 wk of CPAP therapy. It was concluded that the improvement in exercise tolerance could be attributed to the subjective feelings of improved sleep quality after 4 wk of CPAP therapy. Key Words: Obstructive sleep apnea---CPAP---exercise---physiological responses.