EFFICACY OF NONINVASIVE MECHANICAL VENTILATION AT HOME IN OBESE PATIENTS WITH CHRONIC RESPIRATORY INSUFFICIENCY

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Introduction and Aim:. Chronic respiratory insufficiency develops in a minority of obese patients, usually as a consequence of chronic alveolar hypoventilation. One of the options of the treatment of such patients is noninvasive mechanical ventilation (NIMV) at home with or without additional oxygen. The aim of this study was to evaluate the effectiveness of NIMV in obese patients with chronic alveolar hypoventilation. **Material and Methods:** Material of the study consisted of 34 obese patients (BMI 47,35,2 ± 7.9 kg/m2) with chronic respiratory insufficiency (paO2 48±7 mmHg, PaCO2 65±16 mmHg), who where hypoxemic despite optimal therapy, including oxygen therapy, CPAP or BPAP. Ventilation parameters were determined during polysomnography. Most of the subjects received NIMV via a Trilogy ventilator in mode PS-S/T-AVAPS. The settings of NIMV were: IPAP 19±4 cmH2O, EPAP 8,5±3 cmH2O, inspiratory time 1,5±0,5 sec, supplemental oxygen 2,6±0,9 l/min. **Results:** We diagnosed COPD with OSA (overlap syndrome) in 13 patients, obesity-hypoventilation syndrome in 21 patients and 14 of them had coexisting obstructive sleep apnea syndrome (OSA). We observed increase of mean SaO2 during sleep in all patients treated by NIMV and it was greater in patietnts with obesity-hypoventilation syndrome (92.6 ± 1.4%) than in patients with overlap syndrome (90.4 ± 1.8%, p = 0.05). There was a significant improvement of diurnal PaO2 and PaCO2 few days after the beginning of NIMV (PaO2 mean increase - 16 mmHg, PaCO2 mean decrease - 7 mmHg on 3-5 day of NIMV) and after 1 one year of home NIMV (PaO2 mean increase - 14 mmHg, PaCO2 mean decrease - 18 mmHg). During the observation period, lasting from three months to three years, two patients died (one patient with overlap syndrome and one with obesity-hypoventilation syndrome coexisting with OSA) and one patient stopped treatment because of lack of tolerance. **Conclusions:** Obese patients with chronic respiratory failure requiring NIMV during sleep are mostly patients with obesity-hypoventilation syndrome and rarely, patients with overlap syndrome. In such a patients NIMV is an effective and well tolerated treatment resulting in rapid relief of respiratory disorders during sleep especially in patients without coexisting COPD and gradual improvement of gas exchange during the day.