EFFECTIVENESS OF ADAPTIVE SERVO VENTILATION IN THE TREATMENT OF CENTRAL SLEEP APNEA

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Background Adaptive Servo Ventilation (ASV) was developed to treat Central Sleep Apnea in patients with heart failure, which is usually associated with a low or normal PaCO2. The aim of ASV is to stabilise rather than increase overall ventilation. Evidence is limited regarding the use of ASV not only in heart failure patients but central sleep apnea of other aetiologies. The current study therefore explored this therapy in a regional sleep centre in the UK.

Method A retrospective review of the outcomes of 42 patients who were treated with ASV between January 2012 and December 2013, either following conventional positive airway pressure (PAP) or as an initial therapy. Measurements included the Apnea Hypopnea Index (AHI), compliance (measured by hours of machine use/night) and subjective sleep quality, pre and post ASV.

Results All patients demonstrated evidence of central sleep apnea with a reduced or normal transcutaneous CO2 during daytime spontaneous ventilation. Seven patients (16%) met the criteria for complex sleep apnea. 16 (38%) had evidence of heart failure whilst opioids were in use in six patients (14%). The majority of patients, (n = 36, 86%), were on PAP prior to ASV (mean duration 2.4 years), 22 patients (53%) were on Bi-level and 14 (33%) were on CPAP. Six patients (14%) had ASV as an initial therapy. The mean AHI improved from 31.7/h (range 2–84/h) to 5.1/h (Range 0–50/h) with ASV (Figure 1). Compliance improved from 5.2 h/night to 6.4 h/night with ASV. 22 patients (52%) reported a subjective improvement in their sleep quality using ASV.

Conclusion ASV appeared superior to traditional PAP in improving AHI, compliance and sleep quality for patients with central sleep apnea of various aetiologies.

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