Beneficial Effect of Continuous Positive Airway Pressure Therapy on Drug Resistant Hypertriglyceridemia in a Patient with Obstructive Sleep Apnea

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Introductions:

Obstructive sleep apnea (OSA) is frequently associated with hypertension and obesity, and it is considered a major risk factor for cardiovascular and cerebrovascular diseases (1,2). Continuous positive airway pressure (CPAP) is the most common therapeutic approach to treat OSA, although firm results have not yet been achieved on its real usefulness to reduce the risk of all OSA-related pathological conditions. We report a case of OSA associated to hypertriglyceridemia resistant to conventional drugs, showing a good response to CPAP therapy.

Materials\ Methods:

A 35 year old man came to our attention because of snoring and daytime sleepiness. He was obese with a body mass index of 36 Kg/m2 and blood pressure of 150/90 mmHg. Blood analyses showed over the last 3 years an hypertriglyceridemia ranging from 244 to 315 mg/dL, resistant to various diets and to different drugs including HMG CoA reductase, fibrates and statins.

Polysomnography, performed through Alice PDX (Fig.1 a,b), showed an apnea-hypopnea index (AHI) of 66,7 times/hour with an average oxygen saturation of 91% was found. Time with oxygen saturation lower than 90% was 75.2 minutes, and his lowest oxygen saturation was 83%. A diagnosis of OSA(Fig.2 a,b) was made and CPAP therapy was started. The patient was able to use CPAP machine throughout the night with 90% of CPAP pressure of 11 cm H2O and the average AHI was less than 8 times/hour.

Fig.1: a) Alice PDX portable sleep diagnostic system;
b) CPAP machine.

Results:

At the successive one-month follow-up, the patient showed a reduction of blood triglyceride levels (from 262 to 212 mg/dL, 19%). After 6 months of therapy a further decrease was observed with triglyceride values of 158 mg/dL. His blood pressure was also under a better control, oscillating from 140 to 130 (max) and from 60 to 80 (min) mmHg.

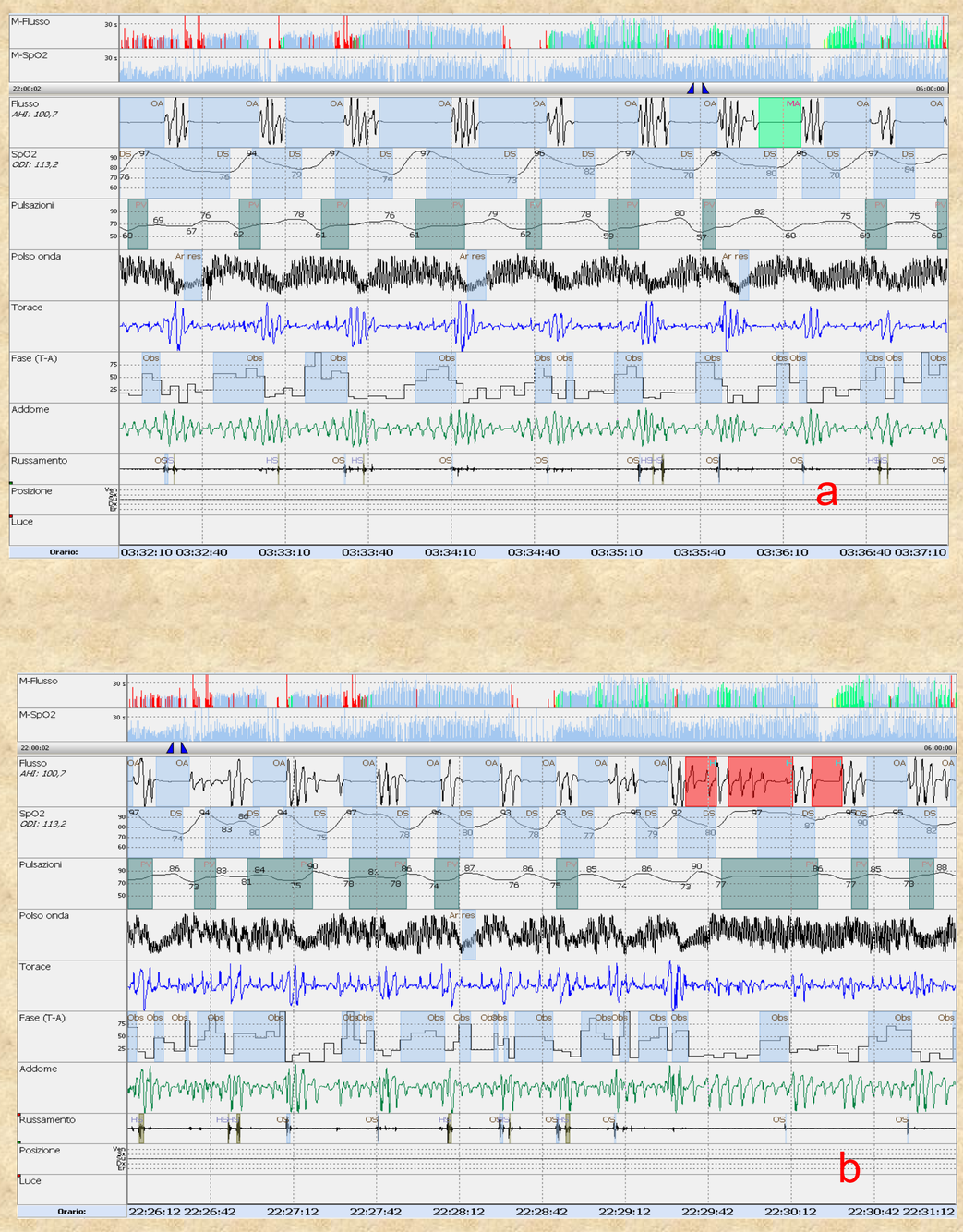

Fig.2: a) b) Polysomnography traces show the Obstructive Sleep Apnea in this patient

Conclusions:

CPAP is considered a first-line therapy to treat OSA patients. In a recent meta-analysis performed on 29 studies including 1,958 subjects (2), treatment with CPAP has been seen to improve dyslipidemia with decrease in total cholesterol and LDL and increase in HDL without any change in triglyceride levels.
Our case report is in agreement with the observation of another study (3) including only 74 OSA patients with mean age of 72.81, in which a statistically significant reduction of triglycerides has been observed following a six-month treatment with CPAP. In summary, CPAP-related normalization of drug-resistant hypertriglyceridemia, although unusual, should be considered as an additional possible favorable effect of CPAP therapy.

References:

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