Abstract


Oxidative stress and obstructive sleep apnoea syndrome.

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BACKGROUND: Even though oxidative stress has been proposed as an underlying mechanism for the symptoms in patients with obstructive sleep apnoea syndrome (OSAS), little information is available on the effects of anti-oxidant treatment on their improvement.

OBJECTIVES: To observe the effects of anti-oxidant treatment on polysomnographic parameters and oxidative stress markers in OSAS patients.

METHODS: Polysomnography (PSG) was performed on 20 male patients. They were administered continuous positive airway pressure (CPAP) therapy for two nights followed by oral intake of vitamin C (100 mg BD) [DOSAGE ERROR CORRECTED] and vitamin E (400 IU BD) for 45 days and a repeat PSG was done. Ten healthy normal subjects underwent the same protocol excepting the CPAP therapy.

RESULTS: In OSAS patients, plasma lipid peroxidation increased significantly and whole blood reduced glutathione decreased significantly. The CPAP therapy as well as anti-oxidant treatment reduced the lipid peroxidation and restored the reduced glutathione concentrations. After anti-oxidant intake, OSAS patients slept better with decrease in Epworth sleepiness score and the number of apnoeic episodes. They spent more time in stages 3 and 4 of sleep. The optimum pressure of CPAP device was significantly lowered also.

CONCLUSIONS: Oxidative stress contributes to sleep behaviour in OSAS patients, and anti-oxidant intake improves the quality of sleep in them.

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