International Conference "ADVANCES IN PNEUMOLOGY"
Poznań, 6 – 7 June, 2008

OXIDATIVE STRESS MARKERS IN THE BLOOD OF PERSONS WITH DIFFERENT STAGES OF OBSTRUCTIVE SLEEP APNEA SYNDROME

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The pathobiochemistry of the relationships between obstructive sleep apnea syndrome and cardiovascular risk factors is still discussed. The aim of the study was to determine some biochemical factors reflecting oxidant-antioxidant balance in the blood of OSA patients in different stages of disease. **Methods:** White non-smoking Caucasians suspected of OSA underwent biochemical and somnographic examinations. Persons aged 35-65 with body mass index (BMI) 25.0-40.0 were included in the study. A PolyMesam device was used to establish the severity of apnea episodes. The results of apnea/hypopnea index (AHI) allowed to divide patients into groups: OSA1 with AHI 5-15 (n=22); OSA2 with AHI 16-30 (n=20); OSA3 with AHI≥31 (n=19). The control (C) group was composed of age, BMI–matched persons with no OSA suspicion (n=21). Glycemia during oral glucose tolerance test, OGTT (G0 min and G120 min .), plasma lipid profile (T-C, HDL-C, LDL-C, TG), and uric acid were estimated among routine parameters. Plasma total antioxidant status, TAS (Randox, StatfaxTM 1904 Plus), activity of erythrocyte Cu, Zn- superoxide dysmutase, SOD (Randox, StatfaxTM 1904 Plus), plasma lipid peroxidation products measured as a concentration of thiobarbituric acid reacting substances, and TBARS (Yagi method, Specord M40) were determined. Statistical analysis was performed using STATISTICA 5.0 for Windows. Data included are shown as means ±SD. **Results:** 1.Compared with the control group, OSA patients presented lower activities of SOD (C: 1681±391; OSA1:1213±328; OSA2: 998±385; OSA3: 983±386 U/g HGB) and lower concentrations of TAS (C: 1.55±0.23; OSA1: 1.27±0.27; OSA2: 1.17±0.30; OSA3: 1.27±0.30 mmol/l) as well as increased concentrations of TBARS. 2. Control subjects presented the positive correlations: TAS&SOD and negative TAS&TBARS and SOD&TBARS. In OSA1 group only the positive correlations: TAS&SOD and negative TAS&TBARS and SOD&TBARS were calculated and additionally the positive TBARS&G0min, TBARS&G120min and the negative correlations: SOD& G120min. **Conclusion**: More severe stages of OSA seem to be related to a profound oxidative-antioxidant imbalance.