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Title: Obstructive sleep apnea syndrome as factor of arrhythmic syndrome emergence and increase of cardiovascular risk in patients with COPD

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Body: Purpose: to define the correlation between degree of cardiovascular risk, obstructive sleep apnea syndrome (OSAS), and frequency of arrhythmias in patients with chronic obstructive pulmonary diseases (COPD). Design: were examined 42 patients in the age of $57,63 \pm 2,78$ years with COPD stage II (83%) and stage III (17%) (GOLD 2011). Duration of disease was 11-23 years. 64% of patients were smoking, index of smoking - $15,3 \pm 0,52$ pack-years. Control group included 15 practically healthy persons. Basic therapy was held according to GOLD 2011. Methods: Holter monitor test with spectral analysis of heart rhythm variability, rheopneumography with definition of apnoea/hypopnoea index (AHI), six-minute walk test (6MWT), calculation of cardiovascular risk according to the scale SCORE. Results: 69% of patients had OSAS of mild and 24% - of moderate stage ($p < 0,05$). Patients had from 163 to 2282 cases of cardiac rhythm disturbances within 24 hours: 54% - atrioventricular, 46% - ventricular extrasystoles. 62% of patients had ventricular late potentials. Were revealed correlations between AHI and 6MWT ($r = -0,5684; p < 0,05$); Valt ($r = 0,7884; p < 0,05$); RMS40 ($r = -0,46; p < 0,05$), LAS40 ($r = 0,72; p < 0,05$); rMSSD ($r = 0,6715; p < 0,05$), HFn.n. ($r = 0,81; p < 0,05$), cardiovascular risk ($r = 0,7618; p < 0,05$). Patients had evidently increased risk for fatal complications according to the scale SCORE ($r = 0,7853; p < 0,05$): high risk level in 12,6% and very high ten years' risk in 71% of cases. Conclusions: 93% of patients with COPD had OSAS, evidently increased risk for life threatening arrhythmias and fatal complications.