SERUM MELATONIN LEVEL DISTURBANCE IS RELATED TO METABOLIC SYNDROME AND SUBCLINICAL ARTERIAL DYSFUNCTION IN SHIFT WORKING HEALTHY MEN
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Background: It has been suggested that shift work may be a risk factor underlying cardiovascular disease. This study was planned to evaluate serum melatonin level related to metabolic syndrome subclinical atherosclerosis in shift working men. Methods: Eighty-six shift working healthy men between 30-55 years old were studied. Anthropometric parameters and fasting blood glucose, lipids, Ox-LDL, morning melatonin and insulin level were measured. Pulse wave analysis was performed via SphygmoCor® to obtain surrogate markers for arterial stiffness. Results: Of the 86 subjects, 19 (21.1%) had metabolic syndrome and Insulin resistance was present in 27(30.7%). Serum melatonin level was significantly lower in subjects with metabolic syndrome than normal cases (61.2 ± 58.9 vs. 136.4 ± 198.6, p = 0.014). In addition, Serum melatonin was different between high / low levels of Framingham’s risk scores (194.6 ± 23.9 vs. 70.8±15.1, p=0.02). Melatonin had inverse correlation with radial and aortic systolic pressures (r = - 0.34, P= 0.005, r = - 0.30, p=0.02, radial and aortic pulse pressures (r = - 0.47, P < 0.0001,r =-0.45,p=0.0001) and cardiac end systolic pressure,(r=-0.25, p=0.03), respectively. Odds ratio of low melatonin level (<50%) for Pulse pressure amplification ≤75% quartile was 3.25(95%CI: 1.14-12.17, P=0.02). Conclusions: Taken together, the inverse relationship of melatonin level and metabolic syndrome and Framingham risk score as well as peripheral and central blood pressure, cardiac end systolic pressure, and its direct relation to pulse pressure amplification highlighted its potential impact on pathogenesis of metabolic syndrome and its impact on arterial remodeling.