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Biomarkers of the cardiometabolic risk and system inflammation in preobese and obese women

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The plasma concentration of high-density lipoprotein cholesterol (HDL-C), triglyceride (TG) and TG/HDL-C ratio as well as proinflammatory factors can identify cardiometabolic risk not only in obese, but in preobese patients. Biomarkers of a system inflammation like C-reactive protein (CRP), interleukin-6 (IL-6), tumor necrosis factor alpha (TNF- α), blood lipids spectrum, waist circumference (WC) were analysed. In this work, we have surveyed 86 women in the middle age of 49.6 ± 2.8 years old, all of the patients were non smokers; 18 patients has overweight (body mass index (BMI) = 28.1 ± 0.3 kg/m²); 25 women has morbid obesity (BMI = 47.4 ± 1.0 kg/m²), 43 women has I-III class of obesity. It is established, that there was an increase in TG concentration up to 1.73 ± 0.23 mmol/l, decrease in HDL-C up to 0.91 ± 0.07 mmol/l, TG/HDL-C ratio = 1.9 and WC = 88.2 ± 2.1 cm in preobese women. This indicates the presence of metabolic syndrome (MetS) in overweight women. Dyslipidemia at women with II and III classes of obesity was characterized by identical expressiveness, but that was significantly ($p < 0.05$) different with morbid obese (MO) women. Concentrations of CRP, IL-6, TNF in women with MO were increased in 3.5; 2.7; 5.4 times ($p < 0.05$) versus the control. There were no differences ($p > 0.05$) in CRP and IL-6 concentrations between MO group and II-III class obesity women. The correlation analysis has shown, that there was a negative correlation of average force in HDL-C/WC: ($r = -0.42$); WC/CRP ($r = +0.57$). This data suggests that preobesity characterizes with MetS and cardiometabolic risk, as well as inflammation. The intensity of inflammation in obese women is similar in morbid obesity and II-III class obesity women.

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