Abstract

Forty women with gonarthrosis were included in this study. The main group consisted of 19 patients having osteoarthritis (OA) with metabolic syndrome (MS), the control group consisted of 21 patients with OA but without MS. It was found that metabolic phenotype of gonarthrosis, i.e. OA with concomitant MS, was different from OA without MS in terms of pain measured with visual analogue scale (VAS) (65 mm in the main group vs 47 mm in control group, р = 0.001) and other OA symptoms in accordance with Knee Osteoarthritis Outcome Scale (KOOS) (43.2 points in the main group vs 76.1 points in the control group, р = 0.001). These main distinguishing features were associated with low quality of life measured with non-specific questionnaire Short Form -36 (SF-36) (30 poines in the main group and 40 points in the control) and clinically significant signs of depression, detected with Patient Health Questionnaire-9 (PHQ-9) (12 points in the main group and 7 points in the control group). The metabolic phenotype of gonarthrosis was characterized with laboratory features of low-grade systemic inflammation as evidenced by increased CRP (11.4 mg/ml in the main group vs 3.2 mg/ml in the control group, р = 0.03), IL-6 (2.6 pg/ml in the main group vs 0.7 pg/ml in the control group, р = 0.001), IL-18 (196.6 pg/ml in the main group vs 61.4 pg/ml in the control group, р = 0.001) in the peripheral blood serum, as well as increase in antibodies against Col2 (27.1 ng/ml in the main vs 5.5 ng/ml in the control group, р = 0.01) , and dyslipidaemia – increase in LDL-cholesterol (5.5 mmol/l in the main group vs 5.9 mmol/l in the control group, р = 0.032) and triglycerides (2.026 mmol/l in the main group and 1.36 mmol/l in the control gropu, р = 0.02 ). In conclusion, MS-associated OA phenotype occurs due to pathogenetic similarities between OA and MS (syntropy) based on systemic low grade inflammation. This OA phenotype is not well studied and needs further research to develop new treatments targeting these two comorbid disorders as a single disease.