RELATIONSHIP GENE POLYMORPHISM LCT, LEVEL OF APELIN AND INDICATORS OF CALCIUM METABOLISM IN PATIENTS WITH OSTEOARTHROSIS AGAINST OBESITY

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Osteoarthritis (OA) – a group of degenerative diseases of the musculoskeletal system, which is about 20% in the structure of morbidity and ranks first among diseases of the joints with the trend of growth in individuals younger than 45 years.

The leading role in the pathogenesis of OA belongs cell activation, which leads to increased destruction and decreased synthesis of cartilage matrix depends on the expression and polymorphism coding genes, including the gene lactase (LCT), which defines the irregularities in the metabolism of calcium.

OA is often associated with obesity – a component of metabolic syndrome, which causes the severity of many diseases and is distributed every year.

Adipose tissue produces more than 50 peptide hormones, the expression of one of them – apelin – modulated inflammatory mediators. Found that level of apelin in serum and synovial fluid (SF) is correlated with the severity of OA, with the level of receptors in chondrocytes apelin significantly higher than in healthy people. These processes are most widespread after the presence of insulin resistance (IR).

The only energy substrate for hondrotsytov exclusively in anaerobic metabolism of glucose nature. Accordingly, insufficient intake of glucose into chondrocytes, including diabetes and metabolic syndrome leads to a reduction in the intensity of synthetic processes and initial degeneration of cartilage. Hyperglycemia polyols way through the activation of glucose metabolism and non-enzymatic glycosylation of proteins can detect lesions periarticular muscles and tissues. Thus, diabetes laid biochemical basis for the formation of an independent clinical picture of joint damage. IR, a key element MS, helping to increase production untreated joints, causing increased formation of oxygen radicals that trigger endothelial dysfunction. According to which where authors have suggested that not only type 2 diabetes affects the development of OA, but OA can be a predictor of type 2 diabetes.

The aim of the study is to improve the diagnosis and prognosis of patients with OA and obesity comprehensive assessment on the basis of clinical and pathogenetic features of flow, level apelinu and calcium metabolism parameters in conjunction with the LCT gene polymorphism and the presence of insulin resistance.

Materials and methods. For the survey selected 49 patients with OA, including 32 patients (study group) with OA combined with obesity, 12 of them in combination with IR, and 17 persons (group) – isolated OA. The control group consisted of 20 people.

Results. The data indicate that:

1. The highest content of apelin (439,7 ± 12,1 pg / ml, p <0,05; r = 0,46). observed in patients with OA, burdened obesity background on IR, analysis apelin content in the blood of patients with OA of obesity and without it found that the figure differed significantly from the control group (p <0.01).

2. LCT gene polymorphism contributes to the development of OA leads to disturbances in the metabolism of calcium due to reduced tolerance to lactose. When analyzing parameters of calcium metabolism based on waist circumference (WC) found that calcium levels in blood serum negatively correlated with the size of WC (r = -0,45, p <0,05).

4. Obesity increases dismetabolic changes in OA joints, increases the severity of this disease, the incidence of complications indicators ultrasonic densitometry in patients with isolated OA was significantly higher than OA against the backdrop of obesity (index of bone strength, respectively – from 81.2 ± 3,1 in I stage to 67,8 ± 3,4% in III stage, and from 72,3 ± 4,5 to 65,7 ± 5,7%, p = 0.05).

Conclusions.

Simultaneous progress of osteoarthritis and obesity comes amid gene polymorphism LCT, which can be considered as predictor formation osteopenic states.

The study will help to further the principles and finding new treatment regimens of severe pathology, will reduce the risk of serious complications OA disability population.