

## USE OF AUTOLOGICAL PLATE-RICH PLASMA IN TREATMENT OF GONARTHROSIS

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**Abstract:**

Gonarthrosis (GA) is a chronic progressive degenerative joint disease characterized by degradation of articular cartilage followed by changes in the subchondral bone and the development of marginal osteophytes. These changes lead to the loss of cartilage and concomitant damage to other components of the joint (synovium, ligaments). GA was considered for a long time as a disease of articular cartilage, but today there is evidence that, in addition to articular cartilage, other anatomical structures of the joint are also involved in the pathological process: capsule, meniscus, subchondral bone, as well as muscles and ligaments.

**Aim of the study**

Comparative assessment of the clinical efficacy of gonarthrosis treatment with traditional methods and additional inclusion of autologous platelet-derived growth factors (AutoPDGF) in the therapy regimen.

**Material and methods.**

56 patients with deforming osteoarthritis of knee joints were under observation. Patients, using the adaptive randomization method, were divided into two groups. In the first group, treatment consisted of the use of standard regimens according to the recommendations of the European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases. Patients of the second group, in addition to the above schemes, have been carried out the intra-articular injection of platelet-enriched plasma five times in a volume of 2-3 ml with a frequency of once a week. To assess the treatment of gonarthrosis, not only subjective methods (visual analog pain scale and WOMAC index) were used, but also objective, in particular, indicators of synovial fluid. In patients of both groups were taken punctate with 1 ml of synovial fluid before and after treatment. There was conducted a study on viscosity and surface tension.

**Results.**

When making an assessment of the results of treatment with subjective methods, the examined patients showed positive dynamics in the treatment process by both the traditional method and treatment of AutoPDGF. During six weeks of treatment the patients noted the stable reduction of pain at rest (by 90.9% in the first group and 94.6% in the second group) and decrease of WOMAC index (due to «functional insufficiency» by 43.80% and 70.0%). However, starting from the 6<sup>th</sup> week of treatment, the patients of the 1<sup>st</sup> group had an increase of pain at rest (by 33.3%) and when walking on even surface (by 30.0%), whereas in the 2<sup>nd</sup> group the growth of these parameters was 8.9% and 18.1% respectively.

Reduction of pain severity and increased functional capabilities of the affected joint in patients of the second group is due to the improvement of the physical parameters of the synovial fluid of the knee joint. After six weeks of treatment of AutoPDGF the viscosity of synovial fluid increased by 1.6 times and surface tension by 1.25 times.

**Conclusion.**

Inclusion of autologous platelet-derived growth factors in the therapy regimen is clinically more effective than traditional method of treatment.

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