



**RETROSPECTIVE STUDY OF THE COURSE OF ARTICULAR SYNDROME
AND DAMAGED JOINT STRUCTURES IN OSTEOARTHRITIS**

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ANNOTATION

Target of the study: Retrospective assessment of clinical signs and course of the disease in patients with osteoarthritis in the sex ratio. **Materials and Methods:** In this scientific study, a retrospective analysis of 300 patients hospitalized in the City Clinical Hospital No. 3 from 2015 to 2019 was carried out based on medical records, with an emphasis on the analysis of the clinical course and consequences of the disease. **Results:** On the basis of the obtained data on x-ray images, the articular syndrome and joint structure disorders observed in patients with osteoarthritis (OA) were assessed. **Conclusions:** It was noted that in patients with OA, the articular syndrome was different and gender differences were found in the course of the disease.

Keywords

osteoarthritis, joint, x-ray, articular syndrome

Osteoarthritis (OA) is a chronic heterogeneous progressive disease of the joints, characterized by degradation of the extracellular matrix of cartilage with subsequent remodeling of joint tissues and manifested by pain and the development of marginal osteophytes. This leads to impaired functional activity and a decrease in the quality of life of patients. In the structure of joint pathologies, OA accounts for about 80% of cases. Risk factors for the development of OA include female gender, estrogen deficiency during postmenopause, congenital diseases of bones and joints, excess body weight, increased physical activity, joint injuries, etc. The most common location of OA is the knee joints. Osteoarthritis of the knee is especially common among people over 50 years of age. Today, more than 250 million people worldwide suffer from this pathology. Due to the aging population, by 2020 OA may become the fourth leading cause of disability. The metabolism of cartilage in OA changes due to impaired metabolism of proteoglycans, the main substance of cartilage. A characteristic sign of cartilage destruction in OA is the loss of glycosaminoglycans by the matrix: chondroitin

sulfate, keratan sulfate, hyaluronic acid. This leads to cartilage dehydration, disorganization and rupture of collagen fibers.

MATERIALS AND METHODS.In our research, we conducted a retrospective analysis of 300 patients with OA based on medical records, and studied the clinical course of the disease by gender. Also, we analyzed X-ray of 156 patients with OA, with a total mean age of 53.1 ± 11.2 years and an average duration of disease of 4.5 ± 1.9 years.

RESULTS AND THEIR DISCUSSION. In this case, monoosteoarthritis, as shown in Table 1, occurred in the same condition in both sexes. However, oligoosteoarthritis differed almost 1.5 times from men with a predominance in women ($p < 0.05$). In contrast, polyosteoarthritis was 2.5 times more prevalent in men than in women ($p < 0.05$). Alternatively, reactive synovitis in women came with a significant difference ($p < 0.05$).

Table 1

Articular syndrome in patients with OA

Clinic signs	women (n=211)		men(n=89)		P
	Absolute	%	absol ute	%	
Monoosteoarthritis	55	26,1	21	23,6	>0,05
Oligoosteoarthritis	123	58,3	29	32,6	<0,05
Polyosteoarthritis	33	15,6	39	43,8	<0,05
Sinovit	56	26,5	11	12,4	<0,05

Note: p - is the degree of reliability of the statistical results, calculated by the ratio of the sexes.

In turn, differences were also identified when attention was paid to the localization of joint damage in patients with OA. As shown in Figure 1, knee joint damage (gonarthrosis) was almost 2 times more common in women ($p < 0.05$), while pelvic joint damage (coxarthrosis) was more prevalent in men ($p < 0.05$). Alternatively, the functional activity of the joints changed based on the joint injury.

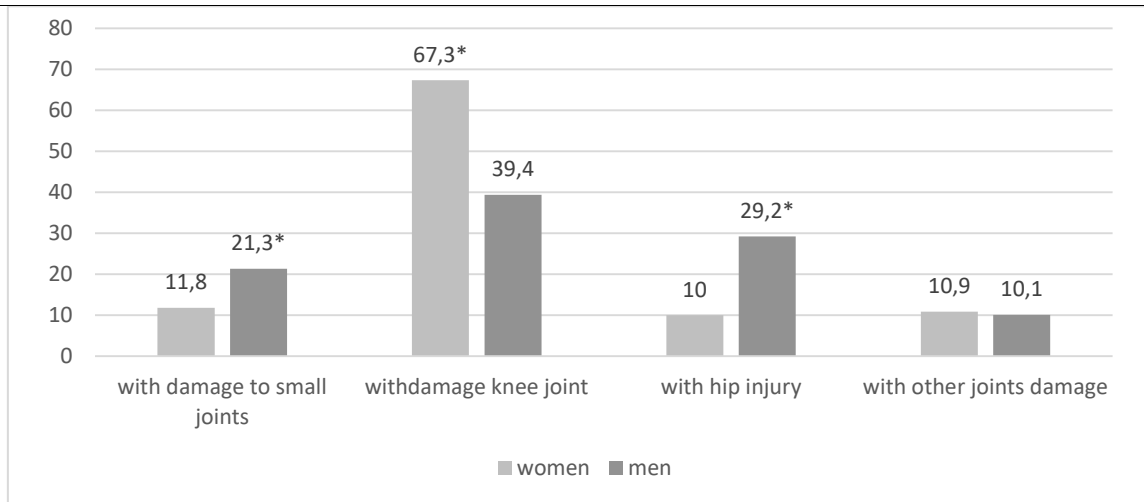


Figure 1. Distribution of joint damage by localization (%) in patients diagnosed with OA; * - the degree of reliability of statistical results, calculated in the ratio of gender.

At the same time, changes in joint function of different functional classes (FC) were observed, as shown in Figure 2, mainly I FC was the most common in both sex groups and no statistically significant difference ($p > 0.05$) was detected between them on the surface of FC II. However, III FC was 2 times more common ($p < 0.05$) in women than in men.

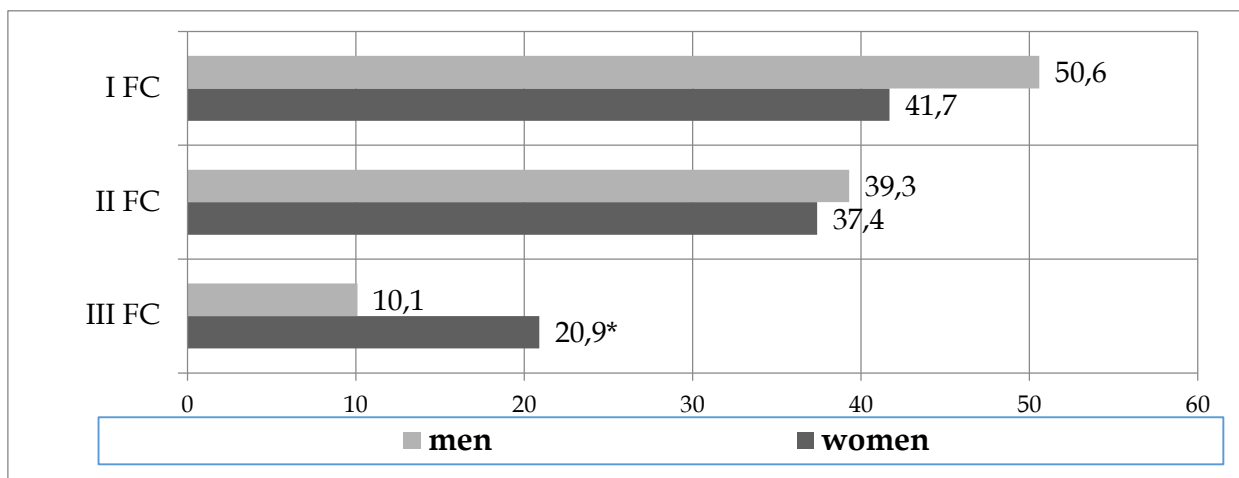


Figure 2. Possibilities of joint activity in patients diagnosed with OA. FC - functional class (%). * - level of reliability of statistical results, calculated in the ratio of gender.

It should be noted that inflammatory markers, as shown in Figure 3, increased the Sedimentation rate of erythrocytes (SRE) and S-reactive protein in 1/2 of women and approximately their titer in 1/3 of men.

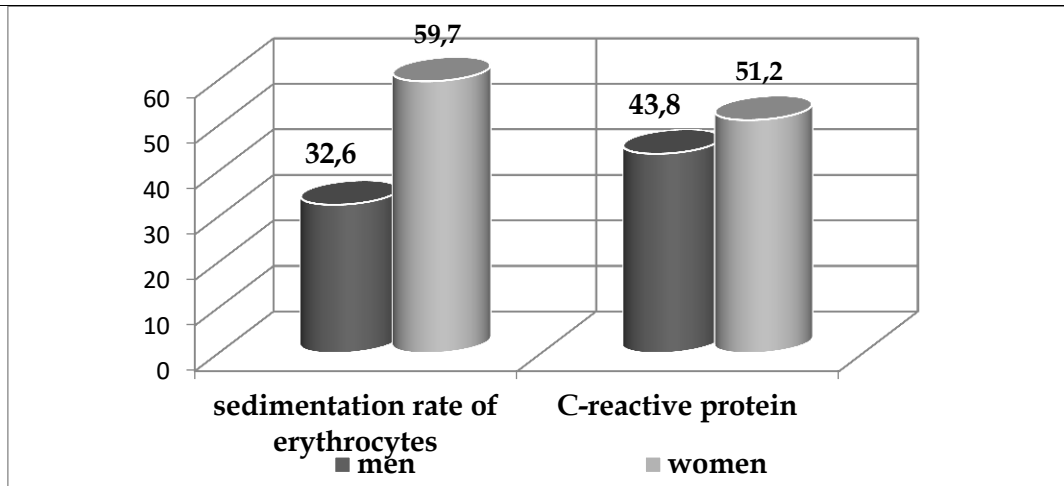


Figure 3. Percentage of patients with increased titers of inflammatory markers in patients diagnosed with OA (%). * - the degree of reliability of statistical results, calculated in the ratio of gender.

It is known that joint diseases, including disorders of the joint structure in OA, are reflected in radiological changes of typical appearance. In addition, the exacerbation of joint syndrome may be associated with dynamic changes in it. In a retrospective analysis, radiographs of 156 patients with OA were studied, with a total mean age of 53.1 ± 11.2 years and an average duration of disease of 4.5 ± 1.9 years. According to the results of the X-ray image analysis, as shown in Figure 4, radiological stage I of OA occurred in 42.6% of men and was reliably differentiated from women ($p < 0.05$). In turn, stage IV was predominant in women ($p < 0.05$) and was detected in 47.1% of patients.

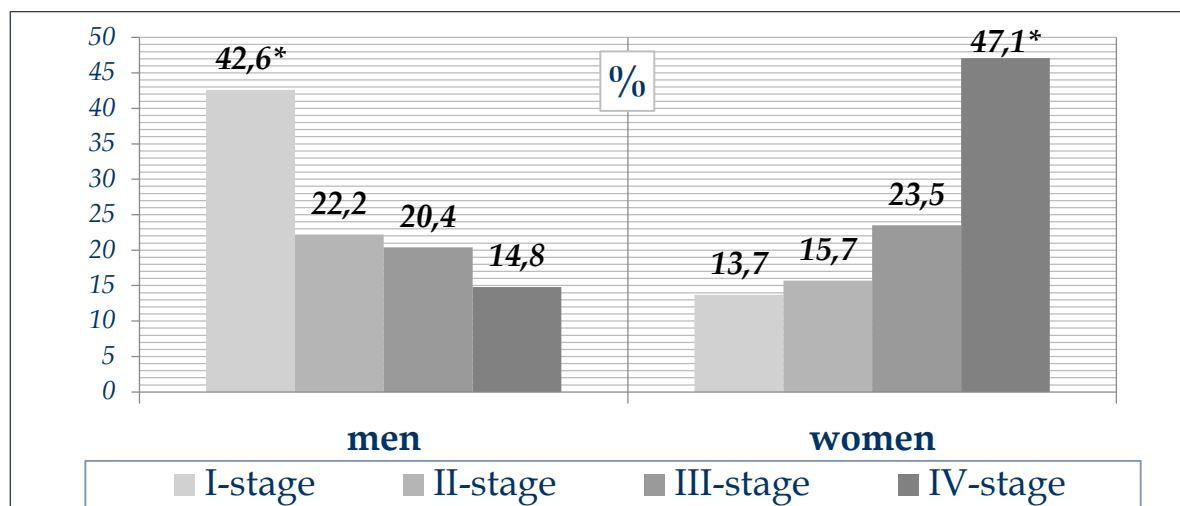


Figure 4. Distribution by radiological stages in patients diagnosed with OA. * - the degree of reliability of statistical results, calculated in the ratio of gender.

It should be noted that the change in the structure of the joints observed in women with OA is more pronounced.

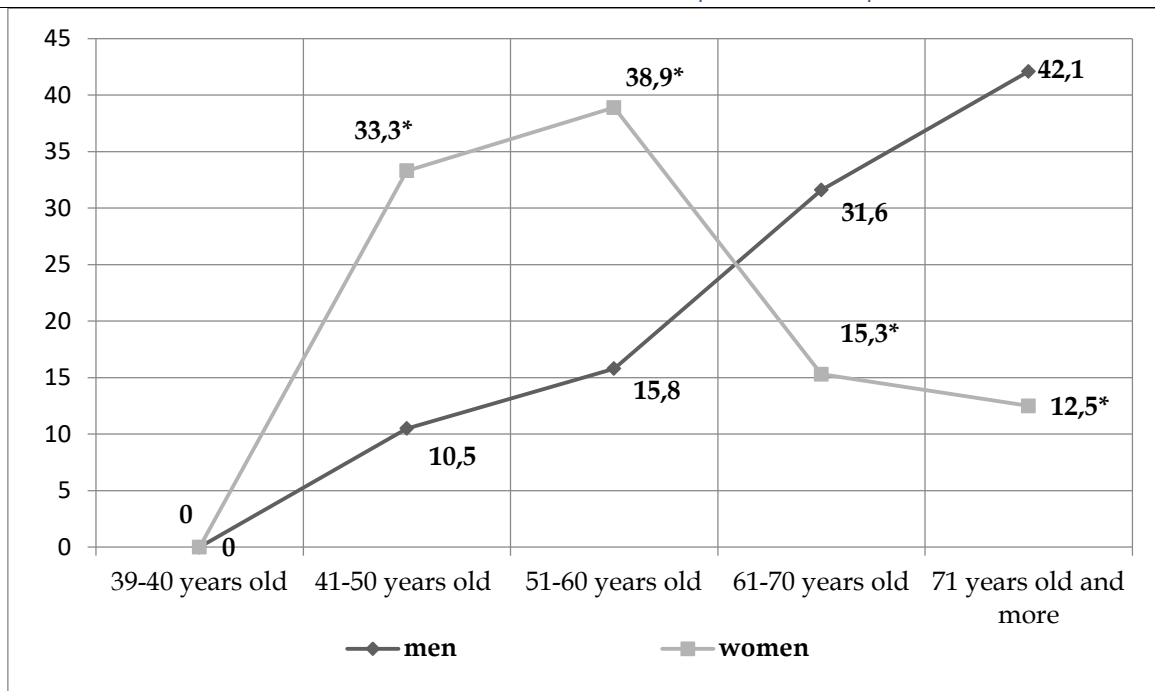


Figure 5. Distribution of radiological stages III-IV in patients diagnosed with OA according to the age of the patient. * - the degree of reliability of statistical results, calculated in the ratio of gender.

It should be noted that in 70.6% of women with OA, stages III-IV of radiological changes were recorded early. At the same time, as shown in Figure 5, 33.3% of cases were in women aged 41-50 years, and 38.9% were in stages III and IV of OA aged 41-50 years. In men, in turn, stage III-IV patients increased inversely with increasing age. It should be noted that due to the lack of timely treatment, the late stages of OA in women are formed early. Hence, the indication for joint arthroplasty in women differs with their early age.

In turn, X-ray imaging of the knee joint (Fig. 6) showed that epiphyseal osteoporosis was formed in 96.8% of cases and cystic symptoms in 21.4% of cases. Narrowing of the joint was detected in 64.7% of patients, and osteosclerosis was found in 56.4% of cases. Osteophytosis was observed in 1/3 of patients. In addition, periostitis occurred in 21.1% of patients.

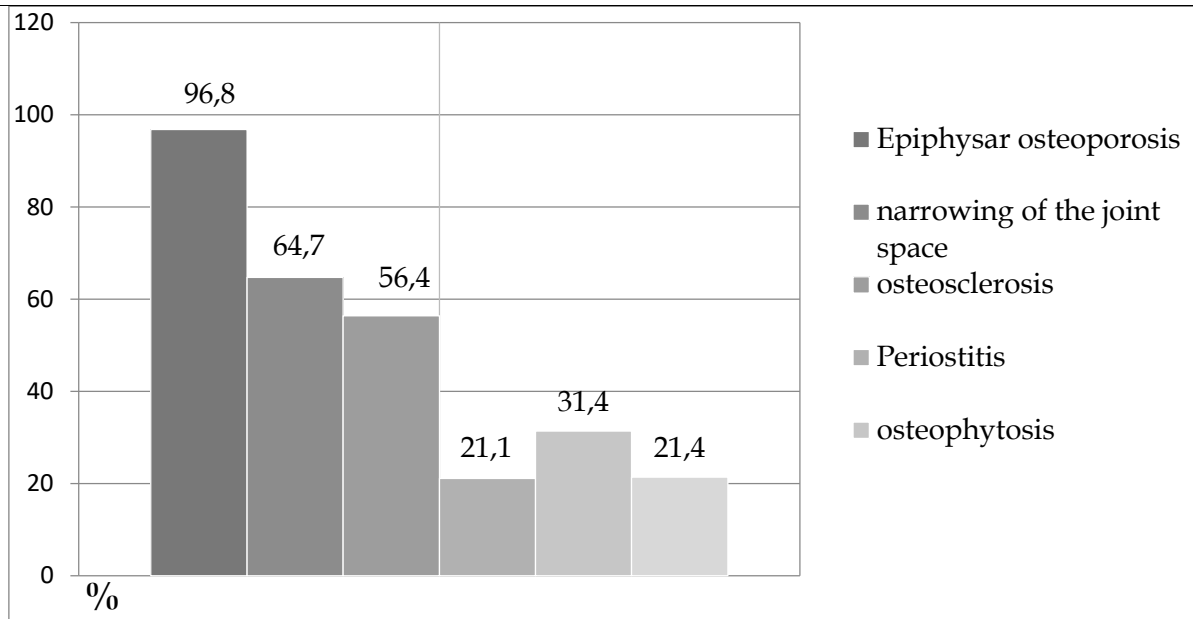


Figure 6. X-ray signs of the knee joint in patients with OA

CONCLUSION.

According to the study, arthritis syndrome in patients with OA varies depending on the localization of the process and the number of affected joints, and changes in joint structure and functional limitations are more pronounced in women than in men, with radiological stages III-IV occurring early in 70.6%.

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