

RETROSPECTIVE ASSESSMENT OF JOINT SYNDROME AND JOINT STRUCTURE DISORDERS IN OSTEOARTHRITIS

Sagdiyana Buranova¹, Khalmurad Akhmedov², Ikhtiyor Turaev³

1 Assistant of Department of Internal diseases №3,
Tashkent Medical Academy, Tashkent, Uzbekistan
E-mail: sagdiana87@mail.ru

2 Professor, Head of the Department of Internal diseases №3,
Tashkent Medical Academy, Tashkent, Uzbekistan

3 Assistant of Department of Internal diseases №3,
Tashkent Medical Academy, Tashkent, Uzbekistan

ABSTRACT

The purpose of the study: Retrospective assessment of clinical signs and course of the disease in patients with osteoarthritis in the ratio of gender.

This research study conducted a retrospective analysis of 300 patients hospitalized at the City Clinical Hospital No.3 from 2015 to 2019 on the basis of medical records and emphasized the analysis of the clinical course and consequences of the disease. On the basis of the obtained documents, the joint syndrome and disorders of the joint structure observed in patients with osteoarthritis (OA) were assessed by radiological images. It was noted that in patients with OA, joint syndrome was different and gender differences were identified.

Key words: osteoarthritis, joint, radiological images, X-ray.

INTRODUCTION

Today, many researchers describe the pathogenesis of osteoarthritis (OA) as a disease with a predominance of degenerative-destructive processes in the connective tissue of the joint, as well as other structures (subchondral bone, synovial membrane, muscle lengths) and polyetiologically. In modern rheumatology, there is a sufficient understanding of the prevention of possible consequences and complications in OA through the use of early and rational non-pharmacological and pharmacological measures [1,4]. In addition, the treatments achieved allow the patient to reduce chronic pain syndrome, synovitis, joint

deformities and disfigurements, reduce the need for endoprosthesis practice, psychiatric and sleep disorders, coordinate depression, and improve patient quality of life. However, at the same time, the increasing incidence and prevalence of OA in the population, its predisposition to chronic disease, the persistence of problems such as irreversible joint disorders and the formation of ankylosis, determine not only the medical but also the socio-economic significance of the disease. One of the non-modifiable risk factors for the development of osteoarthritis is the gender of the patient [2,5]. On this account, the opinions of scientists are ambiguous. Some researchers argue that women not only suffer from OA more often, but may also have more severe forms of it. Being female increases the risk of knee and hand OA [3]. At the same time, men are more likely to suffer from OA of the hip joints. Other authors argue that OA of the hip joint progresses more intensively in women in the absence of a gender effect on the course and risk of developing OA of the knee and joints of the hands [6]. According to the General Practice Research Database, in 2005 in the UK, the risk of total hip and knee replacement at the age of 50 for women was higher than for men: 11.6 and 10.8%, respectively; 7.1 and 8.1%. Russian reviews present data showing the absence of significant gender differences in the development of OA of the hip joint [7].

MATERIALS AND RESEARCH 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. In addition, 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 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 ($p < 0.05$).

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.

Table 1

Clinic signs	Articular syndrome in patients with OA				P
	women (n=211)		men(n=89)		
	Absolute	%	absolute	%	
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.

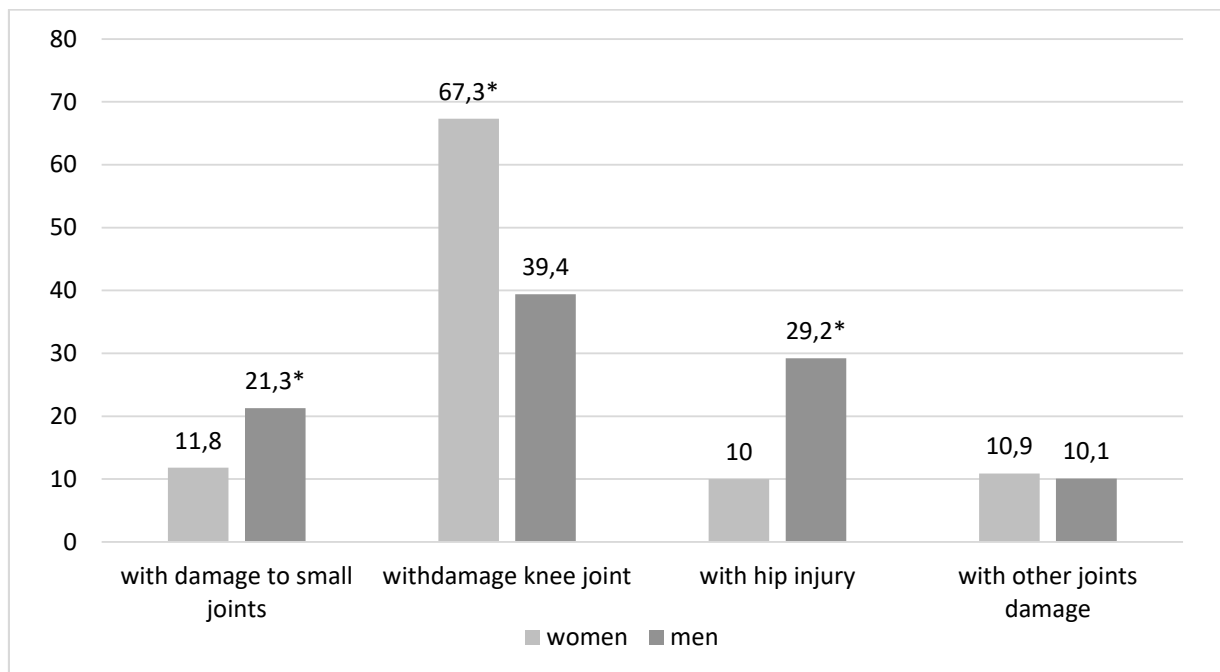


Figure 1. Distribution of joint damage by localization (%) in patients diagnosed with OA; * - the degree of reliability of statistical results, calculated in the ratio of gender.

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.

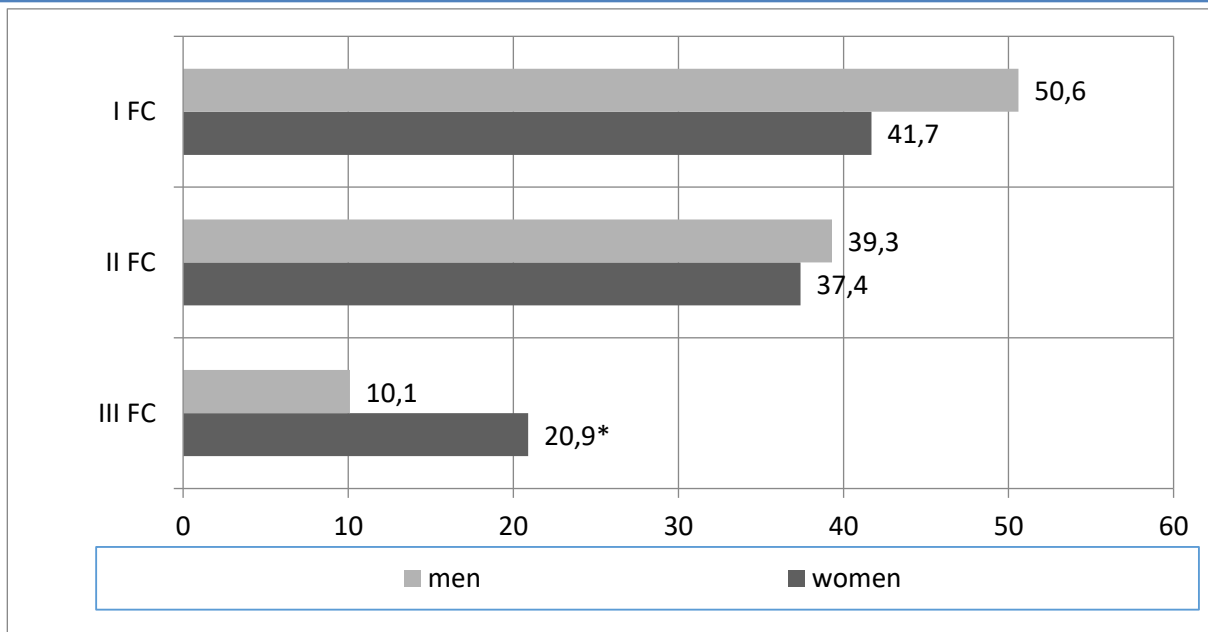


Figure 2. Possibilities of joint activity in patients diagnosed with OA. FC – functional class (%). * - level of reliability of statistical results, calculated in the ratio of gender.

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.

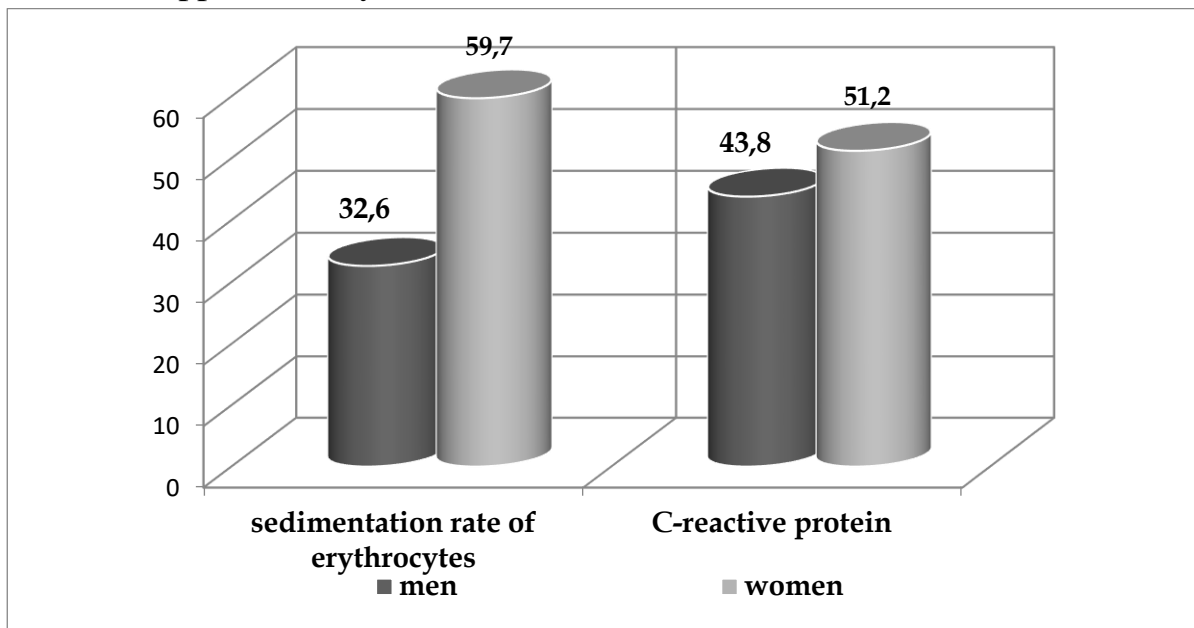


Figure 3. Percentage of patients with increased titers of inflammatory markers in patients diagnosed with OA (%). * - the degree of reliability of statistical results, calculated in the ratio of gender.

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.

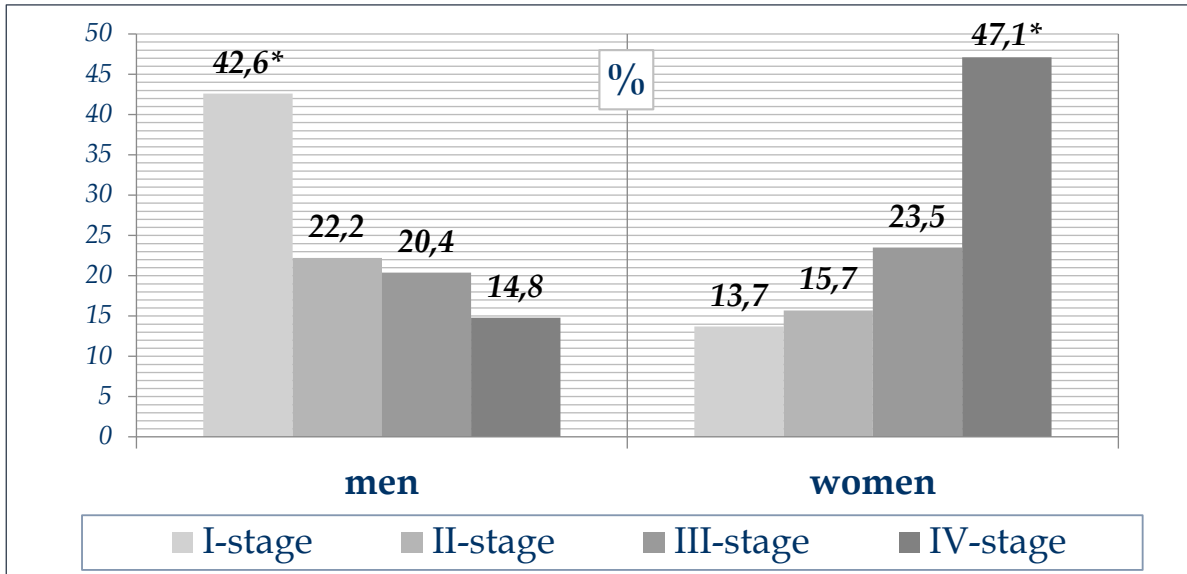


Figure 4. Distribution by radiological stages in patients diagnosed with OA. * - the degree of reliability of statistical results, calculated in the ratio of gender.

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

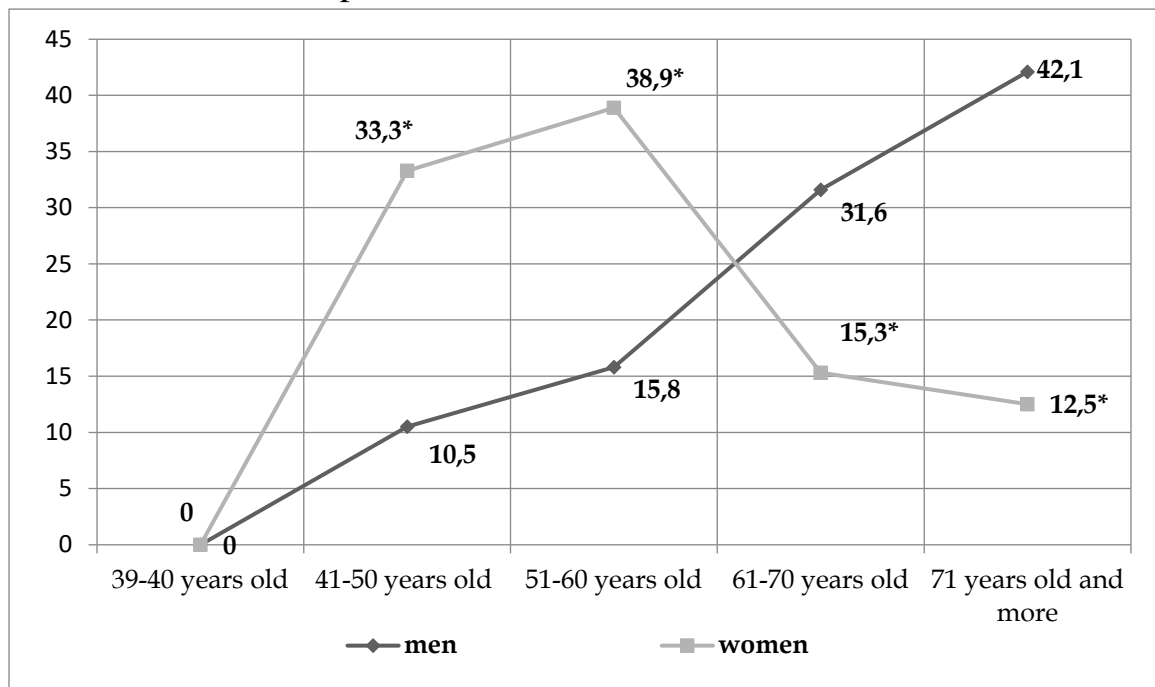


Figure 5. Distribution of radiological stages III-IV in patients diagnosed with OA according to the age of the patient. * - the degree of reliability of statistical results, calculated in the ratio of gender.

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.

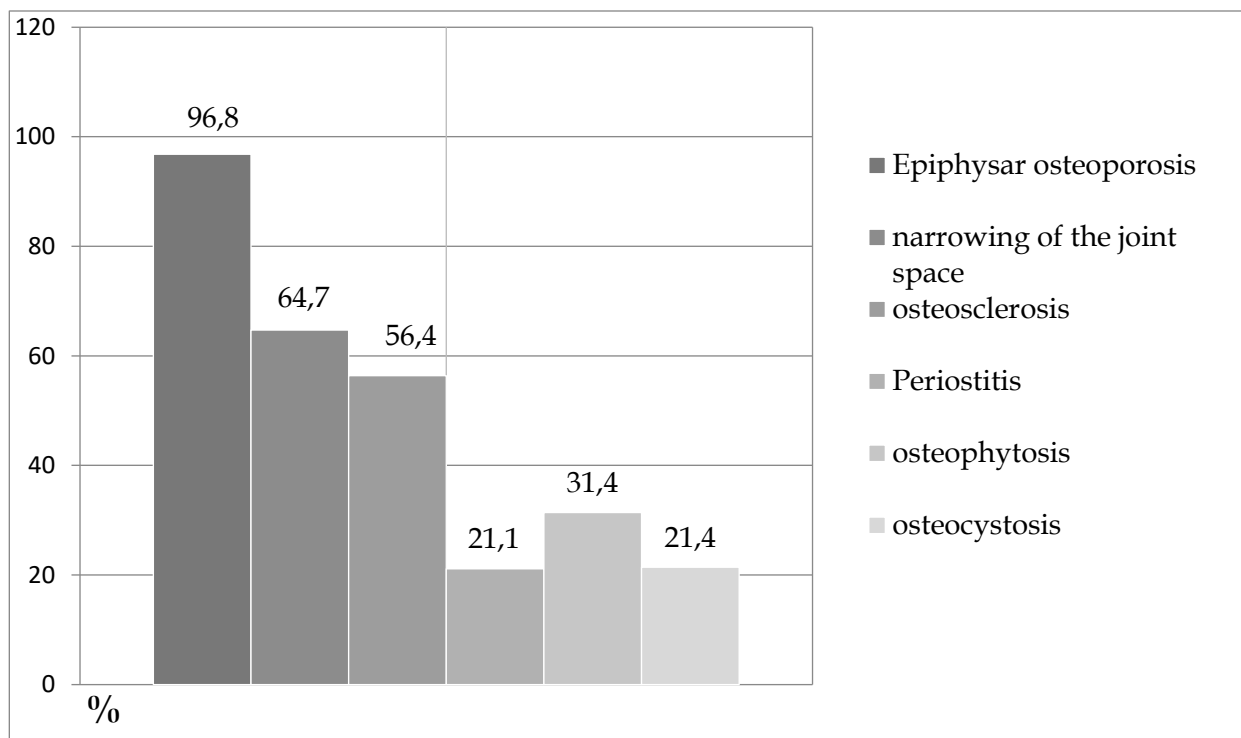


Figure 6. X-ray signs of the knee joint in patients with OA

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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