

Modern Views on the Diagnosis and Assessment of the Quality of Life of Patients with Osteoarthritis of the Hand Joints

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Annotation: Osteoarthritis of the hand-paw joints (OA) is a social problem due to its prevalence among people of working age. According to various studies, the prevalence of the disease is from 6.8 to 51%. The triad of main clinical signs: pain and numbness in the joints of the fingers, various degrees of functional disorders and deformation of the fingers. Despite the similarity of clinical signs, the severity of the disease differs due to damage to the subchondral part of the bone, synovial layer, ligaments, capsule and periarticular muscles. We examined 54 women aged 45-75 years with symptomatic OA of the hand joints, counted the number of painful and deformed joints, evaluated pain according to VASH, ultrasound and X-ray examination we spent The control group consisted of 20 women of the same age without OA of the wrist joints. Comparing the results of echography in two groups, it was found that the number of joints with osteophytes, synovitis, erosion, synovial hypertrophy and effusion was significantly higher in the main group than in the control group.

Keywords: osteoarthrosis, erosion, osteophytes, synovitis, hypertrophy of the synovial membrane.

Osteoarthritis (OA) is one of the most common diseases of the musculoskeletal system. This is a heterogeneous group of diseases of different etiologies, but the morphological, biological, clinical manifestations and results are similar, damage to all joint structures (bursa, subchondral bone, synovial membrane, ligaments, capsule, periarticular muscles) is characterized by [7]. Osteoarthritis is one of the most common diseases in many populations of the globe. Osteoarthritis is being interpreted as an epidemic of the 21st century, which can be explained by the prevalence of the disease and its increasing number. In Europe and the USA, OA accounts for 70% of all rheumatic diseases [7]. The US Centers for Disease Control and Prevention predicts that the number of patients with OA will double in the coming years.[11] . There are about 15 million people in Russia, and more than 20 million Americans in the United States Suffering from OA. In recent years, the incidence of OA has increased by 35% [3].

The number of patients with OA is constantly increasing, which is associated with the increase in the life expectancy of the population and the accumulation of risk factors for the disease. B utun is a common joint disease in many populations worldwide and can develop at any age, with an average onset of 40 years [6]. The disease is diagnosed in 50% of cases in people over 65 years of age, and in 80% of cases in people over 75 years of age. Despite the fact that there is currently no generally accepted classification of OA of the hand-paw joints, a number of authors have identified several variants, namely: erosive OA, 1 finger joint OA, interdigital joint OA and widespread OA affecting all joints of the hand (generalized form) [2]. Often, these types are so different from each other that the question remains whether they are variants of a single disease or distinct phenotypes with unique pathophysiological mechanisms of development, risk factors, and clinical outcomes [3,6].

The final answer to this question has not been received, despite its active study and existing international recommendations [9]. Erosive or inflammatory OA appears to be the most severe option at present. For the first time, the existence of “a chronic inflammatory form of OA that affects the proximal and distal joints of the fingers and quickly leads to significant deformation” was introduced by Crane VS in 1961, and the term “inflammatory OA” was introduced by Ehrlich GE. In 1972, to emphasize the presence of signs of active inflammation in the joints of the hands [7,8]. Later, the term “erosive OA” appeared, reflecting the presence of specific radiological changes [8]. EULAR guidelines define erosive OA as “inflammation that affects the interdigital joints and occurs suddenly, with the development of significant hand dysfunction, swelling, erythema, paresthesia, mild elevation of C-reactive protein.” defines a type of OA characterized by inflammatory symptoms.

X-rays of the hands in this form of OA reveal characteristic central erosions with fragmentation of the subchondral bone and the formation of a “grain wing” or “sawtooth” deformity [5,8]. Later, ankylosis or pseudo-expansion of the joint space develops [3]. Regenerative processes often lead to the formation of a new but irregular subchondral plate and the development of osteophytes, which gradually hide the presence of erosion [5]. The prevalence of erosive OA is low. According to the Framingham study, it is 3.3% in men and 9.9% in women [4]. Similar figures were obtained by Kwok et al. - from 2.8% in the general population to 10.2% in patients with symptomatic OA [8]. A significantly lower prevalence was shown in the work of Marshall et al. - only 1% among people in nursing homes [9]. However, erosive OA has an unfavorable clinical and radiological outcome compared to the non-erosive variant [3,12].

The purpose of the study: to study the diagnosis and course of various variants of osteoarthritis of the wrist joints, to assess the quality of life of patients.

Materials and research methods. 54 women with wrist OA were followed. Criteria for inclusion of patients in the study: women aged 45-75 years. The average age at the time of the study was 62.3 ± 10.8 years, the duration of the disease was 5.7 ± 4.6 years. The comparison group consisted of 45 women aged 58.6 ± 11.2 years without criteria for OA of the wrist joints. The main group and the comparison group did not differ significantly in body mass index (BMI), time of onset of menopause, and prevalence of concomitant pathology. According to the results of the study, all patients of the main group were divided into OA variants of the wrist joints. 15 of 54 women (28%) were classified as erosive subtype, 18 (34%) as OA of interphalangeal joints, 19 (37%) as general form and only 1 (1%) as OA of joints 1st finger. All subjects underwent general clinical and biochemical examinations, evaluation of GHS pain symptoms, and X-ray and ultrasound examination of the joints of the hands.

Research results. According to the GH scale, the average pain level of hand joints in patients with OA is 45.5 (30; 57.5) mm, and the most painful joint is 62 (49;78.5). The corresponding rates in the comparison group were 0 (0; 12), $p < 0.01$ and 0 (0; 15), $p < 0.001$. When dividing patients according to disease variants, it was found that OA of the joints often included young women with a shorter history and a minimal number of joints, while the erosive and generalized variants were more common with age. Characterized by greater and longer duration of the disease. X-rays of hands performed in the main group of patients revealed significant changes in the group of patients with OA in general: thus, osteophytes in 40.9% of the examined joints and narrowing of the joints - 54.5% at Erosion was found in the least cases in women with OA - only in 28%. Ultrasound examination of the wrists was performed in both study groups. The frequency of all echographic changes was statistically higher in the main group; erosion and increased blood flow in the synovium were found only in women with OA, which allows us to consider them as absolute signs of the presence of a clinically significant disease. At the same time, the relatively high frequency of detection of osteophytes in the joints of people without symptoms of the disease indicates the existence of the concept of “ultrasound” OA, which does not have a clear clinical picture, but is characterized by certain ultrasound changes. Compared to standard radiography of the hands, echography revealed more changed joints: this applies to the detection of osteophytes and erosions, which, in our opinion, can be used in the early and differential diagnosis of diseases, if not significant. As the age of the patients increased, all ultrasound signs of the disease were detected more often, but the difference was statistically significant only for

the number of osteophytes. A person's quality of life is a generalized characteristic of his physical, mental, emotional and social activity based on his subjective impression. The medical meaning of the term quality of life is always related to health. In the study of the quality of life of OA patients, a widely used questionnaire - Short Form Medical Outcomes Study (SF-36) was used to evaluate this indicator.

Conclusion: Patients with different variants of OA of the hand-paw joints represent a heterogeneous group of patients: erosive and diffuse OA variants, isolated OA of the interphalangeal joints, joint pain and deformity it is distinguished by having significantly higher indicators compared to the number of joints. The ultrasound method is a safe, convenient and inexpensive method for diagnosing diseases of the musculoskeletal system. Ultrasound examination is a promising method for the diagnosis of OA of the joints of the hands. The quality of life of patients with OA of the hand-paw joints is reduced and is related to the form of the disease: the maximum decrease in pain and functional deficit corresponds to the form of erosive OA. The level of aesthetic discomfort in patients with OA has a significant impact on the quality of life, and is at a maximum level in the diffuse form of the disease and in young women. In addition, this indicator has a positive correlation with radiological and UTT results, and no correlation was found in social factors.

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