WEB OF SCIENTIST: INTERNATIONAL SCIENTIFIC RESEARCH JOURNAL
ISSN: 2776-0979, Volume 3, Issue 10, Oct., 2022

DIAGNOSTIC CRITERIA OF OSTEARTHROSIS IN PATIENTS OF SENIOR AGE GROUPS

Sh. Sh. Tilloeva
Bukhara State Medical Institute

Rezyume
This article presents the results of the study of the peculiarities of the course and diagnosis of of ostearthrosis (OA) in elderly people. In our work we studied 66 OA patients. Of these, 32 (48.4%) of the patients first fell ill in old age, 20 (30.3 %) of patients became ill for more than 15 years and 15 (21.2 %) of patients younger than 40 years made up a control group.

Keywords: ostearthrosis, elderly age.

Relevance

Osteoarthrosis (OA) is a chronic progressive joint disease characterized by primary degeneration of the articular cartilage, followed by a change in the subchondral bone and the development of marginal osteophytes, accompanied by reactive synovitis. Another name for the disease is widely used - “osteoarthritis” - due to the frequent detection of concomitant signs of inflammation. Osteoarthrosis is the most common joint disease that affects both men and women; more often OA develops in men under the age of 45 years and in women over the age of 55 years. OA is observed in almost every person older than 70years.

OA occur in the cartilage matrix. They lead to the development of progressive erosion of cartilage and the destruction of type II collagen fibers, as well as degradation of proteoglycan macromolecules. At the heart of the violation of cartilage metabolism are quantitative and qualitative changes in proteoglycans - protein-polysaccharide complexes that ensure the stability of the structure of the collagen network, which is the basis of the cartilage matrix. Cartilage damage in OA is the result of increased synthesis and release from chondrocytes of collagenase, stromelysin (metalloprotease), which destroy proteoglycans and the collagen network. The increased synthesis of collagenase and stromelysin in the affected cartilage, which can be genetically determined and controlled by cytokines released from the synovial membrane, leads to further degradation of the cartilage matrix. Joint inflammation is also associated with the level of cytokines, which are often found in the synovial fluid of patients with OA. Cytokines, in particular interleukin-1, stimulate chondrocytes and enhance the synthesis of metalloproteases and serine proteases. In

addition, cytokines can inhibit the synthesis of physiological inhibitors of these enzymes The combination of these factors leads to an increase in the activity of the sum of proteases, which in combination with inhibition of the synthesis of the main elements of the matrix (collagen and proteoglycans) leads to cartilage degeneration and the development of OA. In recent years, the concept of viscoelastic joint protection has been developed: the elastic-viscous properties of synovial fluid depend on the content of hyaluronan in it, which is able to absorb water and retain it. The physiological role of hyaluronan is to provide protection, lubrication and mechanical stabilization of the collagen network and cells in tissues and on the surface of the joint. With OA in the joint, rheological homeostasis is violated, which is associated with the viscoelastic properties of the joint medium and provides conditions for its normal functioning. Morphologically, in OA, cartilage from strong, elastic, blue becomes dry, yellow, dull, with a rough surface. At the early stage of OA, in the places of maximum load, local zones of softening of the cartilage are formed, at later stages fragmentation, vertical cracks are found in it

In some places, cartilage calcifies. Cartilage cracking leads to ulceration with exposure of the underlying bone and separation of fragments that enter the joint cavity as detritus. With a thinned cartilage, the distribution of pressure between the articular surfaces becomes uneven. This leads to local overloads, an increase in friction between the articular surfaces.

According to modern concepts, osteoarthrosis (OA) is a heterogeneous group of diseases of various etiologies with similar biological, morphological and clinical manifestations, in which all joint structures are involved in the pathological process: cartilage, subchondral bone, ligaments, articular capsule, synovial membrane and periarticular muscles [8]

The frequency of osteoarthritis in families of patients is 2 times higher than in the whole population, and the risk of developing the disease in individuals with congenital defects of the musculoskeletal system is increased by 7.7 times, and in individuals with overweight - 2 times. In addition, osteoarthritis is one of the main causes of premature disability and disability, second only to coronary heart disease [7].

Deforming arthrosis dominates among joint diseases; it accounts for up to 80% of all articular pathology and more than 50% of rheumatic diseases. In the first place in the frequency of damage is the hip joint - 42.7% [9]. Coxarthrosis is a common joint disease that affects about 80% of the Russian population aged 50-60. Hip osteoarthritis usually develops after forty years equally often in men and women. The detection of this disease at the initial stage is 33.7%, at the progressive - 66.3%,

however, as a rule, the first symptoms of osteoarthritis are noted much earlier than its clinical manifestations. According to the literature in recent years, not only an increase in the pathology of the hip joint, but also its rejuvenation (from 25–45 years) was noted, moreover, an increase in the progressing stages already registered at this age [14]. Coxarthrosis in 60% of cases leads to reduced performance and in 11.5% to disability. The above indicates the high medical and socio-economic significance of the problem of prevention and treatment of this disease, which not only significantly worsens the quality of life of the patient, but also leads to large socio-economic costs [5]. Osteoarthrosis (OA) is the most common form of joint damage and occupies a leading position among all diseases of the musculoskeletal system [Balabanova R.M., 2012]. As the population ages, the prevalence of the disease also increases. According to official statistics, from 2000 to 2010 in the Russian Federation the number of patients with OA has more than doubled.

Each year, more than 600 thousand patients are diagnosed with OA for the first time, but even these data do not reflect the true prevalence of the disease, since not all patients turn to medical institutions for help. In a recent epidemiological study, it was shown that in Russia OA of the knee and (or) hip joints affects 13% of the population [Galushko EA, 2011]. Moreover, OA is one of the main causes of chronic pain and disability, especially in the elderly. There are known risk factors for the development of OA, which include age, female gender, overweight, and genetic predisposition. However, given the very high prevalence of OA, it is of particular interest to study the risk factors (RF) of OA progression in the early stages in order to predict the course of the disease and identify groups of patients with faster disease progression for prophylactic and adequate therapeutic measures A 2010 meta-analysis of 85 studies showed that the main risk factors for the progression of OA of the knee joints are obesity, the simultaneous presence of OA of the joints of the hands, a history of joint injuries, female gender and advanced age [Blagojevic M. et al., 2010]. Similar results were obtained in another meta-analysis, which included 36 studies involving more than 1000 patients with gonarthrosis [Belo J.N. et al., 2007]. In addition to the above, the authors attributed to the factors of progression and the presence of deformities of the knee joints. Several domestic and foreign studies have demonstrated that the presence of synovitis of the knee joints correlates with increased degradation of articular cartilage [I. Bukina, 2004, Conaghan P. G. et. al., 2010, Krasnokutsky S. et. al., 2011], but there are also opposite data [Hill C. L. et. al., 2007].The presence of bone marrow edema (OCM), according to several studies, is associated with rapid cartilage loss [Felson D. T. et. al., 2003, Pelletier J. P. et. al., 2007], but it is suggested that the presence of an OKM cannot be used to judge the progression of OA, since this

is not a permanent sign [Felson D. T. et. al., 2012, Garnero P. et. al., 2005,RoemerF.W.et.al.,2009].

In addition, there is no consensus on the relationship between the bone mineral density (BMD) of the axial skeleton and subchondral bone with the progression of gonarthrosis [Abdin-Mohamed M. etal., 2009, Bruyere O. et. al., 2003]. The pathological changes observed in OA include degradation of the articular cartilage, thickening of the subchondral bone, the formation of osteophytes (OF), inflammation of the synovial membrane, damage to ligaments, menisci, and the joint capsule, which progress over time, leading to chronic pain, stiffness, deformation, and limitation physical function. To identify structural changes in the joint, such traditional research methods as ultrasound (ultrasound) and radiographic are used. Magnetic resonance imaging (MRI) and X-ray densitometry of the subchondral bone are increasingly used to diagnose the disease. Each of the diagnostic methods complements each other. However, there are few works on the use of individual instrumental studies to identify risk factors for the progression of gonarthrosis.

Purpose of Research

The main goal of the work was to study the peculiarities of the course and diagnosis of OA in elderly people.

25 (44.6%) patients first fell ill in the elderly, 16 (28.5%) patients fell ill with experience more than 15 years and 15 (26.7%) patients younger than 45 years made up a control group.

Materials and Methods of Research

In this study 66 OA patients were studied. Of these, 25 (44.6%) of the patients first fell ill in old age, 16 (28.5%) of patients became ill for more than 15 years and 15 (26.7%) of patients younger than 45 years made up a control group. Of the total number of OA patients newly diagnosed in the elderly, 14 (21.2%), 52 (78.8%), the ratio of males and females was 1: 4.

At the age of over 60 years there were 38 (57.5%) patients. Among the OA patients we examined, 68.5% had a disease duration of up to 6 years, which allowed us to carefully analyze the dynamics of clinical manifestations and the cause of their progression from the very beginning of the disease. Based on the studies carried out,:

1. The nature of the current of the OA according to G.P. Matveikova and V.E. Yagur.
2. The degree of OA activity according to the criteria of V. Otto and M.G. Astapenko.
3. Degree of functional insufficiency of the joints.
4. Radiographic stage of OA according to the criteria of O. Steinbroke.

5. The presence of extra-articular manifestations of the disease.

Results and Discussion

As a result of the conducted studies, it was established that the clinical features of the course of OA, which began in the elderly, is a frequent defeat at the beginning of the disease of large and medium joints (63.6%), in contrast to the classical variant of OA. In 52.2% of cases, OA in the elderly began acutely or subacute with an increase in the sign of inflammation of the joints. Depending on the presence of rheumatoid factor in the blood serum, they are divided into two groups: at a titer of 1:32 and above, OA was assessed as seropositive, and at titers below 1:32 as seronegative. 67% of the patients we examined had a seropositive OA. A study of the clinical picture of the disease showed that in 89% of OA patients that began in old age, there were II and III activity of the inflammatory process. X-ray manifestations of the I stage were detected in 2.5% of patients, stage II was detected in 55.5%, stage III was detected in 31.4%, stage IV was detected in 10.6% of patients. With rheumatoid arthritis, the loss of professional capacity for work and disability contributes to the development of severe joint failure (FNS), the cause is the progression of bone destruction. FNS I degree was observed in 20.4% of patients, grade II in 53%, grade III in 28.9% of patients.

The study of the joint syndrome showed that in OA patients there were significantly high indices of the Richie index of 19.1 ± 1.1 points, the number of inflamed joints was 5.1 ± 3.1, the pain at rest was VAS 42.1 ± 18.3, pain at motion- YOUR 65,7 ± 18,5, pain at palpation-VASH 39,4 ± 19,7. The duration of morning stiffness in elderly OA patients was significantly less than $p < 0.005$ than in the control group. In the elderly at the beginning of the disease, an important diagnostic sign "morning stiffness" manifests itself after 3-4 months and even a year from the onset of the disease. In elderly people with OA other than articular manifestations occurs, also with the defeat of internal organs. In 35 (53%) patients visceral lesions were diagnosed, manifested as vasculitis 15 (22.7%), Raynaud's syndrome in 5 (7.5%), rheumatoid nodules - 7 (10.6%) and in 4 (6%) patients other manifestations of the disease. The peculiarities of the clinical course of the OA, in old age, are frequent lesions of large and medium joints, acute and subacute onset of the disease, high activity of the inflammatory process, pronounced articular syndrome, rapid formation of bone-grasping destruction, severe limitation of motor activity, leading to early disability and invalidity, involvement in the pathological process of internal organs.

Conclusions

Ostearthrosis in the elderly is particularly affected by large and medium joints that perform basic musculoskeletal function, which leads to limiting physical activity of patients and contributes to the development of disability and the rapid development of trophic disorders in many patients. The pronounced activity of the inflammatory process, the rapid development of bone-cartilage destruction, the low efficacy of NSAIDs make it necessary to prescribe elderly patients with OA at early stages of glucocorticosteroid disease, not only intraarticular, but also in small doses.

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