



Epidemiological and Etiopathological Characteristics of Osteoarthritis, Clinical Course

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Annotation. Epidemiological and etiological features of osteoarthritis and literature on the clinical course of the disease were reviewed in the article. According to the information in the literature, it is necessary to study the development of complex treatment methods with an individual approach, depending on the etiological factors and pathogenetic mechanisms that cause osteoarthritis.

Key words: osteoarthritis, synovial shell, hip joint, knee joint, rehabilitation, osteophytes, joint, disability.

Relevance. Osteoarthritis of the joint is a common form of joint pathology, which accounts for 60-70% of all rheumatic diseases. As a person ages, the incidence of OA increases significantly. Thus, osteoarthritis occurs in only 3-5% of patients under the age of 45, in 30% between the ages of 45 and 64, and in 60-70% of patients over the age of 65. Arthrosis of the knee joints is most common in 10% of the population over 55 years of age, and in 25% of cases there are clear signs of functional activity. The basis of the disease is damage to all the components of the joint: cartilage, subchondral bone, synovial shell, ligaments, periarticular muscles, and it is manifested by pain and limitation of movements in the joint [8,20,9].

Incidence and prevalence of osteoarthritis is increasing rapidly because of population aging and increased life expectancy. However, the current treatment offered by clinicians to patients with osteoarthritis is limited to symptom management (Correa and Lietman 2017; DeRogatis et al. 2019), which cannot stop the progression of the condition [2, 13, 18].

Literature data shows that osteoarthritis is the most common pathology among joint diseases. This disease affects 10 to 16% of the world's population, and is observed in almost every person over 70 years old [1, 9, 11].

In the Russian Federation, osteoarthritis of the hip joint ranks second in terms of morbidity in the general structure of joint diseases, after gonarthrosis, and first in terms of duration of temporary and permanent disability. The share of disabled people due to osteoarthritis of the hip joint is 20-30% of the number of disabled people according to orthopedic pathology (Zakharchenko A.A. 2020).

Osteoarthritis is chronic developed going joint disease is a joint uncle's primary degeneration, subchondral of the bone change with is described and edged of osteophytes development and reactive synovial inflammation with will pass This pathology is locomotor functional capacity of the system to the violation take will come and big medical and social from problems is considered.

Flammable cytokines, metalloproteinases, cell aging, estrogen and biomechanical balance violation of osteoarthritis in development plays an important role (Wang eat al. 2017; Mehana eat al. 2019; McCulloch eat al. 2017; Watt 2016) and this hearth uncle deficiency, osteophyte formation to be, of bones subchondral again structure and in the joints such as synovial hyperplasia one row important pathological to changes



take coming can (Charlier et al. 2019), but the pathogenesis of osteoarthritis yet to improve has a need. Last in years conducted studies that's it showed that with estrogen depends on estrogen in the receptor (ERR) family depends on receptors α (ERR α) and γ (ERR γ) in the pathogenesis of OA play an important role can. In this article the authors last research to the results based on molecular level between ERR and OA relationships regularly respectively light up [3, 12, 16].

development of OA not only chondrocytes and osteocytes but fat tissues (adipocytes) and bone tissue (osteoblasts) cells by work issued to inflammation against intermediaries and cytokines plays the main role. Chronic inflammation process, own in turn, of the joint all cells in tissues (chondrocytes, osteocytes, osteoblasts) structures of metabolism to change and tissue anabolic and catabolic of processes of the other advantage looking to disproportion, this while the end consequence of the disease development take will come.

Osteocytes and of chondrocytes onset of aging OA and development take coming important vital of the factors is one Advanced OA people in chondrocytes ERR α expression is broken and this age has passed It is becoming more and more common ERR α cell of aging important regulator to be possible shows and with that of chondrocytes to old age effect does (Huang et al. 2017).

The last one to information according to arthrosis internal and external of reasons complicated from the effect come coming out multifactorial diseases group as classified. In 2017 clinical guidelines so called: "Osteoarthritis (OA) (international to classification according to, osteoarthritis) to biological, morphological, clinical appearance have has been of different etiologies of diseases heterogeneous group is a joint all structural parts, first next, as well subchondral bone, synovial membrane, tendons, capsule, periarticular muscles damage is based".

A study in nature information this the disease unfit for work, early disability, this e.g of patient's life quality significant level deterioration take coming as one of the main reasons. Deformable arthrosis of the joints due to the deterioration of the quality of life of patients to regular work is a significant socio-economic problem due to disability and persistent pain [5, 14].

Pathological of the process development inclined has been factors between obesity separately place holds - this not only of the disease to the beginning, but his more heavier to the forms to pass too help gives. Degenerative of the process in passing three main joint available: trauma, inflammation, dysplasia. The last one two factor to the trait of genetic genesis have and they are a joint and bone tissues born features with dependent - autoimmune biomechanical disorders of processes (rheumatoid arthritis). Contagious including diseases, to himself special to the feature have (gonorrhea, syphilis) rarely cases in the joint inflammation of the reaction reason to be can.

Depending on the etiology, there are two main types of OA: primary, the cause of which cannot be determined, and secondary, which develops as a result of accompanying diseases.

In the course of the development of degenerative joint disease, the following causative factors of the disease are distinguished:

- hereditary predisposition - the following conditions: congenital dysplasia of bone and joint tissue; violation of the formation of collagen of the second type;
- rheumatoid arthritis.
- old age or old age;
- more women;
- overweight;
- excessive physical or psychoemotional stress;
- trauma.
- diseases of the endocrine system with mineral imbalance in the body;
- the functional state of the female reproductive system, which is accompanied by hypoestrogenia and a decrease in bone tissue density in the postmenopausal period;



- avitaminosis, lack of vitamin D and trace elements in the diet;
- inflammatory processes in the joint associated with hypothermia, injuries, surgical interventions;
- dangerous factors associated with the profession - in this case, excessive strain of the joint apparatus;
- degenerative-necrotic processes: Koenig's disease, aseptic necrosis of the femoral head;
- muscle weakness and incorrect movement axis of the joint;
- excessive joint mobility (hypermobility).

In OA, the pathological process affects the entire volume of joint and bone tissue in the form of both morphological and molecular changes at the cellular level, which leads to thinning of the cartilage matrix, disruption of the fiber structure, and the appearance of surface erosions. As a result of the disease, the thickening of the cortical bone layer and the formation of cysts can lead to the development of osteosclerosis [10, 15, 17].

According to one of the last large-scale studies on the epidemiology of OA in Europe (Zoetermeer Community Survey), the prevalence of gonarthrosis according to radiographic data is 22,800/100,000 in women over 45 years of age and 14,100/100,000 in men [4]. Radiographic signs of OA are more common than clinical signs, and the prevalence of knee OA has been reported to increase significantly as people age.

Regardless of its etiology, osteoarthritis is characterized by a gradual course. At the initial stage of the disease, morphological joint disorders are not observed, but there are changes in the composition of the synovial fluid, which leads to a decrease in tissue trophism and is the basis for the further development of the degenerative inflammatory process. These changes in the initial stage of the disease can cause pain, even if there is no excessive load on the joints. The second stage is characterized by a morphological change in the integrity of the tissues - meniscus breakdown and thinning of the meniscal layer occur, as a result of which osteophytes appear compensatory in response to stress. The third stage is characterized by the most severe course of OA, in which there is a permanent, irreversible deformation of the supporting joint part, which changes the bone axes of the muscles. Contractures are observed that limit the natural range of motion of the joints, muscle attachment points change, which leads to incomplete contraction of the muscles.

Osteoarthritis of bones and joints is widespread, often chronic, painful, limiting physical activity of patients, causing temporary or permanent disability, and having a heavy economic and psychological impact on patients.

Considers changes in the femoral head in the early stages of Legg-Calve-Perthes disease and early aseptic necrosis. Many studies associate the disease process with the combined effects of genetic predisposition, increased leptin levels, changes in mesenchymal stem cell differentiation, factor V mutation of the hemostasis system, and other changes.

The authors studied the state of the hip joint in patients with Legg-Calve-Perthes disease and aseptic necrosis of the femoral head using magnetic resonance imaging (MRI) in the terminal stages of the disease and in the formation of the symptom complex of arthrosis. A single-center retrospective study using magnetic resonance imaging (MRI) included 15 patients with aseptic necrosis of the femoral head and Legg-Calve-Perthes disease. The study group of patients was dominated by patients with III-IV stages of the disease. In five patients in the third-fourth stage of the disease, as a result of the displacement of the head of the femur, complete horizontalization of the labrum was observed. In seven patients, the horizontal position was less defined and the angle of the labrum falling on the talus was between 5 and 10°. The study of Togay acetabular-head index showed that in 9 out of 13 patients its value is less than 75-77%. In the III-IV stage of the disease, the shape of the head of the femur, its displacement to the side, was more pronounced. In Legg-Calve-Perthes disease and aseptic necrosis of the femoral head, complex pathological changes in the hip-femoral joint, especially in children, are completely determined by the MRI examination method, which allows assessing the condition of the femoral head, all soft tissues and the ankle. One of the most important indicators is the lateralization of the articular lip, which reflects the level of mechanical tension in it as a result of the displacement of the femoral head [6, 7, 9].



Thus, the degenerative process that begins in the joint area affects the entire volume of the tissues of the arms and legs, which leads to irreversible neurotrophic disorders.

It is necessary to develop methods for complex rehabilitation of patients with degenerative-dystrophic and inflammatory diseases of the joints, especially osteoarthritis, depending on the pathogenetic joint, so that the given treatments will be significantly effective. As a result, the quality of life of patients improves and disability is prevented.

References

1. Алексеева Н.В., Основина И.П., Владимирова Е.Л., Иванов А.В. Обоснование возможности применения магнитофореза при патологии суставов. //Вопросы курортологии, физиотерапии и лечебной физической культуры. Москва: Медиа Сфера, 2018, № 3, С. 49–56
2. Ашурова Н.А., Туксанова З.И. Сочетанное применение лекарственных трав с химиотерапевтическим средством доксорубицин // Биология и интегративная медицина - 8 (2019) 36.
3. Ашурова Н. А., Туксанова З. И., Тиллаева Ш. Ш. Сравнительная характеристика частоты патологии ЛОР органов среди детей школьного возраста //Педиатрический вестник Южного Урала. – 2015. – №. 1. – С. 27-28.
4. Бадюкин В.В. Остеоартроз коленного сустава: клиника, диагностика, лечение // Современная ревматология. – 2013. №3 (13). С. 70-75.
5. Галушко Е.А., Насонов Е.Л. Распространенность ревматических заболеваний в России // Альманах клинической медицины. – 2018. – Т. 46, №. 1. – С. 32-39.
6. Дьячкова Г. В. и др. Болезнь Легга-Кальве-Пертеса и асептический некроз головки бедренной кости: МРТ-семиотика терминальных стадий заболевания с исходом в деформирующий артроз //Гений ортопедии. – 2020. – Т. 26. – №. 3. – С. 370-375.
7. Кароматов И. Д., Ашурова Н. А., Туксанова З. И. Мёд-пищевое, лечебно профилактическое средство //Биология и интегративная медицина. – 2018. – №. 2. – С. 132-163.
8. Мазуров В.И., Трофимова А.С., Трофимов Е.А. Факторы риска и некоторые аспекты патогенеза остеоартрита // Вестник Северо-Западного государственного медицинского университета им. И.И. Мечникова. -2016. Т. 8, № 2. - С. 116-124.
9. Мухамадиева Н. Б., Туксанова З. И. Влияние течения инфаркта миокарда на развитие депрессивных расстройств //Молодой ученый. – 2015. – №. 11. – С. 681-683.
10. Нурбоев Ф. Э., Туксанова З. И. Остеоартрознинг тарқалиш сабаблари, ривожланиш механизми, кечиш хусусиятларининг ўзига хослиги //Тиббиётда янги кун. Илмий журнал – 2020 - №2 (30) - 485-488 б.
11. Туксанова Зебинисо Изатуллаевна Гранат и перспективы его применения при заболеваниях костей и суставов // Биология и интегративная медицина. 2022. №3 (56). С. 146-166.
12. Ismoilova, M. Yu., Tuksanova Z. I. To the issue of development of cardiovascular diseases at athletes World Journal of Pharmaceutical Research - Volume 9 (2020): 331.
13. Kayumov, Kholmurod Naimovich, Zebiniso Izatulloyevna Tuksanova, and Miyassar Babakulovna Djaborova. Application of traditional medicine methods in the primary section of the health system condition. *Journal of Natural Remedies* 22.1 (2) (2021): 49-53.
14. Kayumov K. N., Tuksanova Z. I., Djaborova M. B. Indicators of reproductive functions in women fertile age //湖南大学学报 (自然科学版). – 2021. – Т. 48. – №. 8.
15. Kholmurod Naimovich Kayumov, Zebiniso Izatulloyevna Tuksanova, Mushtari Yusupovna Ismoilova 2021. Medical and Social Aspects of the Lifestyle and Conditions of Women of Reproductive Age. *Annals of the Romanian Society for Cell Biology*. (Mar. 2021), 5205–5209.



16. Tang J, Liu T, Wen X, Zhou Z, Yan J, Gao J, Zuo J. Estrogen-related receptors: novel potential regulators of osteoarthritis pathogenesis. //Mol Med. 2021 Jan 15;27(1):5.
17. Tuksanova Z.I. Analysis of clinical signs of a patient's osteoarthrosis //World Bulletin of Public Health. – 2022. – T. 16. – C. 146-150.
18. Tuksanova Z.I. Complex rehabilitation methods depending on the pathogenetic link of osteoarthritis // Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali. – 2022. – C. 484-487.
19. Tuksanova Z. I., Nurboyev F. E., Ismoilova M. Y., Djabbarova M.B. Development of differentiated approaches to the complex treatment of osteoarthritis // Psychology and education. – 2021. – T. 2. – C. 5002-5005.
20. Tuksanova Zebiniso Izatulloevna. Methods of complex rehabilitation of patients with osteoarthritis (review of literature) //World Bulletin of Public Health – 2022. Volume-17, 115-122.

