

## OSTEOARTHRITIS: ITS PREVALENCE, RISK FACTORS, CLINICAL MANIFESTATION, DIAGNOSIS AND TREATMENT (LITERATURE REVIEW)

F. Fiksman, O. M. Krekhovska-Lepiavko, B. A. Lokay

*I. Horbachevsky Ternopil National Medical University*

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Osteoarthritis is a degenerative joint disease that affects the cartilage, underlying bone, and synovial fluid. It is a leading cause of disability and chronic pain, affecting approximately 10 % of men and 18 % of women over the age of 60 worldwide . This literature review aims to summarize the current understanding of OA with regards to its prevalence, risk factors, clinical manifestation, diagnosis, and treatment.

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## ОСТЕОАРТРИТ: ЙОГО ПОШИРЕННЯ, ФАКТОРИ РИЗИКУ, КЛІНІЧНІ ПРОЯВИ, ДІАГНОСТИКА ТА ЛІКУВАННЯ (ОГЛЯД ЛІТЕРАТУРИ)

Ф. Фіксман, О. М. Креховська-Лепявко, Б. А. Локай

*Тернопільський національний медичний університет  
імені І. Я. Горбачевського МОЗ України*

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Остеоартрит – дегенеративне захворювання суглобів, при якому уражається хрящова тканина на суглобових поверхнях кісток з наступним ушкодженням усіх тканин, що утворюють суглоб (кісток, зв'язкового апарату, синовіальної оболонки), та яке поступово призводить до незворотних змін у суглобах. Доведено, що дане захворювання є основною причиною інвалідності та появи хронічного болю у близько 10 % чоловіків і 18 % жінок віком понад 60 років у всьому світі. Цей огляд літератури має на меті узагальнити сучасне розуміння остеоартриту, зокрема його поширення, факторів ризику, клінічних проявів, діагностики та лікування.

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**Introduction.** Osteoarthritis (OA) is a common joint disorder that affects millions of people worldwide. It is characterized by progressive loss of articular cartilage, changes in subchondral bone, and alterations in the synovial membrane that can lead to pain, stiffness, and loss of function. The prevalence of OA increases with age and is higher in women than in men [1]. OA is the most common form of arthritis and affects millions of people worldwide. According to the World Health Organization (WHO), OA is one of the top ten causes of disability in high-income countries, affecting over 300 million people globally [2]. The prevalence of OA is known to increase with age, with the highest prevalence occurring in individuals aged 60 years and older.

**The main part.** There are several risk factors for OA, including age, gender, genetics, obesity, joint injury, and occupation. Other factors such as vitamin D deficiency, smoking, and metabolic syndrome may

also contribute to the development of OA [3]. The risk factors for OA can be classified as modifiable and non-modifiable. Non-modifiable risk factors include age, gender, genetics, and previous joint injuries. Modifiable risk factors include obesity, physical inactivity, smoking, and occupation. Studies have shown that individuals who are obese are more likely to develop OA, especially in weight-bearing joints such as the knees and hips [4]. Furthermore, physical inactivity can lead to muscle weakness and joint stiffness, which can increase the risk of OA.

The clinical manifestation of OA includes joint pain, stiffness, and limited mobility. Pain is typically worse after periods of inactivity and can be relieved with movement. The joints affected by OA can be warm and swollen, and a grinding sensation can be felt during movement. As the disease progresses, joint deformity can occur. Clinical manifestations of OA vary depending on the joint affected, but the most common symptoms

include pain, stiffness, and functional impairment. The diagnosis of OA is based on a combination of clinical examination, radiographic findings, and laboratory tests [5].

The diagnosis of OA is based on a combination of clinical examination, medical history, and radiographic findings. The American College of Rheumatology (ACR) has established criteria for the diagnosis of OA, which includes the presence of joint pain, stiffness, and radiographic evidence of joint space narrowing and osteophytes [6].

The treatment of OA includes both non-pharmacological and pharmacological interventions. The goals of treatment for OA include relieving pain, reducing inflammation, and improving joint function. Non-pharmacological interventions such as weight loss, exercise, and physical therapy are recommended as first-line therapy. Pharmacological interventions include non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroids, and disease-modifying anti-rheumatic drugs (DMARDs). In severe cases, joint replacement surgery may be necessary [7].

In recent years, there has been a growing interest in the development of disease-modifying drugs for OA. These agents aim to slow down or even reverse the progression of the disease. Examples of such drugs include hyaluronic acid derivatives and growth factors [8].

The Osteoarthritis Research Society International (OARSI) and the European League Against Rheumatism (EULAR) have developed guidelines for the management of OA. These guidelines provide evidence-based recommendations for the diagnosis and treatment of OA [9, 10].

To assess pain and function in patients with OA, several outcome measures have been developed, such as the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and the OARSI/Outcome Measures in Rheumatology (OMERACT) initiative [11].

The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) is a widely used patient-reported outcome measure for assessing the severity of osteoarthritis (OA) and its impact on daily activities. It was developed in the 1980s by researchers from the University of Western Ontario and McMaster University in Canada.

The WOMAC consists of 24 questions that assess three dimensions of OA: pain, stiffness, and physical function. Each question is scored on a Likert scale from 0 to 4, with higher scores indicating greater severity of symptoms. The pain subscale includes five questions

related to the intensity, frequency, and duration of pain in the affected joint(s). The stiffness subscale includes two questions related to the duration and severity of morning stiffness. The physical function subscale includes 17 questions related to difficulty performing daily activities such as walking, climbing stairs, and getting in and out of a chair.

The WOMAC is a reliable and valid measure of OA severity, with good internal consistency, test-retest reliability, and responsiveness to change over time. It has been translated into many languages and is widely used in clinical trials and research studies to evaluate the efficacy of interventions for OA, including medications, exercise programs, and surgery. The WOMAC is also used in clinical practice to monitor the progression of OA and to assess the effectiveness of treatment.

The Osteoarthritis Research Society International (OARSI) and the Outcome Measures in Rheumatology (OMERACT) initiative are two organizations that work together to develop standardized outcome measures for use in clinical trials and research studies related to osteoarthritis (OA).

OARSI is an international organization that promotes research into the causes and treatment of OA. It was founded in 1991 and has over 1,700 members in more than 50 countries. OARSI is dedicated to advancing the field of OA research and improving the lives of people affected by OA.

OMERACT is an international initiative that aims to develop standardized outcome measures for use in rheumatology research. It was founded in 1992 and brings together researchers, clinicians, patients, and industry representatives to develop consensus-based outcome measures that are scientifically rigorous, feasible to use in clinical trials, and meaningful to patients.

Together, OARSI and OMERACT have developed several outcome measures for use in OA research, including the OARSI/OMERACT OA Trial Outcome Measures Recommendations, which provide guidance on selecting appropriate outcome measures for use in clinical trials of OA interventions. They have also developed specific measures for assessing pain, physical function, quality of life, and imaging outcomes in OA.

The OARSI/OMERACT initiative has been instrumental in advancing the field of OA research by promoting the use of standardized outcome measures, which facilitate

comparisons between studies and help ensure that study results are clinically relevant and meaningful to patients.

Despite the availability of various treatments for OA, many patients continue to experience inadequate pain relief and functional impairment [12], that is why the future investigations of the issue are required.

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