

Hip and Knee Osteoarthritis: An Overview

Kalça ve Diz Osteoartriti: Genel Bir Bakış

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ABSTRACT

Osteoarthritis (OA) is currently the most common musculoskeletal disease causing significant pain, disability and socioeconomic costs worldwide. It primarily affects weight-bearing joints such as the knees and hips. It is the leading cause of disability in older adults causes pain, loss of function and impaired quality of life. The etiopathology of OA is complex and multifactorial with genetic, biological and biomechanical components. OA was previously thought to be simply a "wear and tear" disease predominantly associated with aging, and mechanically driven. However, it is now known that it is a much more complex process including mechanic, inflammatory and metabolic factors. Most clinical studies of hip and knee OA have focused primarily on improvement in pain and joint function. Current treatment methods do not seem to be sufficient to stop the course of OA, and functional outcomes may be poor in despite of all treatment modalities. The focus is so now on disease prevention and early OA treatment.

Key Words: Hip, Knee ,Osteoarthritis

ÖZ

Osteoartrit (OA) şu anda dünya çapında önemli bir ağrı, sakatlık ve sosyoekonomik maliyete neden olan en yaygın kas-iskelet hastalığıdır. Öncelikle dizler ve kalçalar gibi ağırlık taşıyan eklemleri etkiler. Yaşlı erişkinlerde önde gelen sakatlık nedenidir ve ağrıya, işlev kaybına ve yaşam kalitesinin düşmesine neden olur. OA etyopatolojisi, genetik, biyolojik ve biyomekanik bileşenlerle karmaşık ve çok faktörlüdür. OA önceleri ağırlıklı olarak yaşlanmayla ilişkili ve mekanik olarak yönlendirilen basitçe bir "aşınma ve yıpranma" hastalığı olduğu düşünülüyordu. Ancak inflamatuvar ve metabolik faktörlerden oluşan çok daha karmaşık bir süreç olduğu artık bilinmektedir. Kalça ve Diz OA'sı ile ilgili çoğu klinik çalışma, esas olarak ağrı ve eklem fonksiyonundaki iyileşmeye odaklanmıştır. Mevcut tedavi yöntemleri OA gidişatını durdurmakta yeterli gözükmemektedir ve tedaviye rağmen fonksiyonel sonuçlar kötü olabilmektedir. Dolayısıyla artık, hastalığı önleme ve erken osteoartrit tedavisine odaklanılmaktadır.

Anahtar kelimeler: Kalça, Diz, Osteoartrit

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Osteoarthritis (OA) is currently the most common musculoskeletal disease causing significant pain, disability and socioeconomic costs worldwide. It primarily affects weight-bearing joints such as the knees and hips. It is the leading cause of disability in older adults causes pain, loss of function and impaired quality of life [1-3]. Pathologically; osteoarthritis (OA) is a progressive, degenerative disease characterized by focal deterioration of synovial and articular cartilage, cyst, sclerosis, osteophyte formation in subchondral bone, and alterations in all involved joint structures [4,5]. Chronic overload and impaired biomechanics of the joint lead to destructive modifications in synovial tissue, subchondral bone metabolism and articular cartilage. This causes clinical pain, stiffness, swelling, loss of motion, and functional disability in the affected joint [2,6]. <

The etiopathology of OA is complex and multifactorial with genetic, biological and biomechanical components. OA was previously thought to be simply a "wear and tear" disease predominantly associated with aging, and mechanically driven. However, it is now known that it is a much more complex process including mechanic, inflammatory and metabolic factors. More recent investigations have identified numerous other factors and pathogenesis that contribute to the onset of OA [1,2].

In the pathogenesis of OA; synovial fluid analyzes have shown that proteolytic enzymes, reactive oxygen radicals and lipid peroxidation have harmful potentials [4,7]. In addition, increases in proinflammatory cytokines, particularly IL-1, TNF, and IL-6, have been shown to play a significant

role in the synovial fluid and synovial membrane [8]. There are many modifiable and non-modifiable risk factors for OA like: genetic predisposition, age, obesity, metabolic syndrome, previous joint injuries, lifestyle factors, and female gender [2]. Injuries involving the joint, such as anterior cruciate ligament and meniscus injuries, may contribute to the development of OA [9,10].

The goal of the treatment of OA is to prevent damage to cartilage and other structures, to reduce pain, to preserve existing joint range of motion, and to reduce secondary functional failures [4,11]. For this purpose, lifestyle modifications, analgesics, nonsteroidal anti-inflammatory drugs, physical therapy agents and various intra-articular injections were defined, and surgical interventions were recommended for patients who did not benefit from these treatments. These treatment options can be applied alone or in combinations, and guidelines have been advanced in this regard [2,4,11]. Intra-articular injections are often glucocorticoids (GC) and hyaluronic acid (HA). Clinical experience has shown that GCs are very useful in the treatment of OA exacerbations, but they do not alter the underlying process and may have some side effects [4,5]. Intra-articular HA injection; by normalizing the elasticity and viscosity of the synovial fluid, it can contribute to tissue regeneration while improving its protection, lubrication and shock-absorbing effects. Therefore, it is effective in reducing pain and improving joint function [4,5,11]. Tenoxicam has been indicated as another cost-effective intra-articular injection treatment option [11].

Some treatments can be combined. It has been reported that arthroscopic debridement is beneficial in cases with knee OA in appropriate indications. Furthermore intra-articular HA applications can improve the effectiveness of treatment, and oral vitamin E combinations may be beneficial in relieving symptoms [4]. However, it is stated that low and high molecular weight HA preparations are not superior to each other in decreasing the symptoms of OA [12]. Total or unicompartmental knee replacement surgeries are successful treatment methods for pain relief, especially for patients with severe knee pain and advanced joint degeneration and destruction who do not respond to conservative treatments [13]. On the other hand, many new treatments such as nerve blockage, mesenchymal stem cell injections and platelet-rich plasma

injections are under investigation [2,5].

Most clinical studies of hip and knee OA have focused primarily on improvement in pain and joint function. Current treatment methods do not seem to be sufficient to stop the course of OA, and functional outcomes may be poor in despite of all treatment modalities. The focus is so now on disease prevention and early OA treatment. There is currently an unmet demand for further research into the pathogenesis of OA as well as its course and treatment. However, advances in both imaging and biochemical markers offer potential outcome measures for diagnosis and new treatments [1,3].

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