



# Recent Developments in Osteoarthritis due to Pharmacological Intervention

Cherie Melaku\*

Department of Pharmacy and Medicine, Wollo University, Dessie, Ethiopia

## DESCRIPTION

Osteoarthritis (OA) is a painful degenerative chronic joint disease that primarily affects older people and impairs movement. As the world's population decreases and obesity rates rise, OA will probably become a major contributor to older impairment. The genesis of OA is currently poorly understood, despite the fact that numerous risk factors, including aberrant joint biomechanics, bone-mass index, joint damage, and genetic variants, have been linked to its development. According to traditional view, mechanical imbalance was the only factor in cartilage degeneration. According to mounting evidence, OA is a complicated disorder whose pathophysiology likely involves involvement of the entire joint, including cartilage, sub chondral bone, and synovium, with matrix proteases' degradation of cartilage playing a key role. In general, catabolic and anabolic events must balance out for OA to develop. Biologic drugs have gained in popularity in recent years due to their ability to either target specific catabolic events, like inflammation or matrix degradation, or to stimulate anabolic events, like anti-inflammation or chondrogenesis. According to their stage of disease progression, OA patients are managed clinically. There is still no specific intervention for the treatment of OA because the pathophysiology is complex. In order to maintain joint function and reduce pain and stiffness, OA management primarily focuses on these two objectives. Non pharmacological therapies, pharmacological interventions, and surgical interventions make up the three categories of OA treatment methods. When necessary, a mix of non-pharmacological, pharmaceutical, and surgical therapies is advised by current consensus guidelines. The majority of OA patients can be successfully managed with a mix of non-pharmacological and pharmaceutical therapies. To restore function, surgical methods to treat cartilage lesions or even

replace the joint should be taken into consideration in the latter stages.

The two main non pharmacological therapies are dietary changes and physical therapy. Controlling body weight in obese persons relieves symptoms and lowers the possibility of developing symptoms of OA. Exercise helps to preserve stability by strengthening the muscles around the joints. Physical therapy helps to increase mobility and relieve symptoms. Examples include Extracorporeal Shock Wave Therapy (ESWT), acupuncture, and pulsed electromagnetic fields. As nutritional supplements, people have utilized glucosamine and chondroitin sulphate. For many people who develop symptomatic OA, non-pharmacological therapies might not be enough. Acetaminophen and non-steroidal anti-inflammatory medications, in particular, are important pharmaceuticals for symptom control. For the treatment of OA, other medications such duloxetine, opioids, intra-articular steroids, and visco supplement injections are also permitted. These medications might work well to reduce discomfort. Regarding their adverse effects, there have been numerous safety concerns expressed.

The degenerative process of OA has been demonstrated to be regulated in diverse ways by DNA, RNA, and protein. Some of those are anticipated to be turned into OA therapy and diagnosis targets. Biologic drugs often have one of two effects, either catabolic or anabolic, which can worsen or stop the onset or progression of OA. The main catabolic effects are the induction of cell death, the recruitment of inflammatory cells, the inhibition of chondrocyte growth, and the acceleration of matrix decomposition. The anabolic effect, on the other hand, primarily works to increase the expression of ECM, enhance the proliferation of chondrocytes, block chondrocyte death, and decrease the expression of inflammatory factors.

**Correspondence to:** Cherie Melaku, Department of Pharmacy and Medicine, Wollo University, Dessie, Ethiopia, E-mail: melaku@gmail.com

**Received:** 04-Jul-2022, Manuscript No. CPECR-22-17675; **Editor assigned:** 08-Jul-2022, Pre QC No. CPECR-22-17675 (PQ); **Reviewed:** 22-Jul-2022, QC No CPECR-22-17675; **Revised:** 29-Jul-2022, Manuscript No. CPECR-22-17675 (R); **Published:** 08-Aug-2022, DOI: 10.35248/2161-1459.22.12.321.

**Citation:** Melaku C (2022) Recent Developments in Osteoarthritis due to Pharmacological Intervention. J Clin Exp Pharmacol. 12:321.

**Copyright:** © 2022 Melaku C. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.