American Journal Of Biomedical Science & Pharmaceutical Innovation

VOLUME Vol.05 Issue10 2025
PAGE NO. 80-83
DOI 10.37547/ajbspi/Volume05Issue10-16

Effectiveness Of Anti-Inflammatory Therapy In Patients With Gonarthrosis

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Received: 29 August 2025; **Accepted:** 25 September 2025; **Published:** 27 October 2025

Abstract: This article presents the results of a study examining the efficacy and safety of the nonsteroidal anti-inflammatory drug Coxicare (etoricoxib) in patients with gonarthrosis. Treatment with etoricoxib for three months is characterized by a good analgesic effect, is well-tolerated, and leads to an improvement in the patients' quality of life.

Keywords: Osteoarthrosis, nonsteroidal anti-inflammatory drugs, meloxicam.

Introduction: Osteoarthritis (OA) is the most common form of joint damage and the main cause of morbidity and disability, which causes significant financial costs, especially for the elderly. The prevalence of OA varies widely depending on the studied population and the epidemiological method used. The most common localization of peripheral joint damage is knee, hip joints and hands. The significant increase in the frequency of OA is primarily due to the rapid aging of populations and the obesity pandemic, which is why OA is currently becoming one of the main health problems in almost all countries.

OA is no longer considered as a simple consequence of aging and cartilage degeneration, rather, pathological changes in OA appear to be the result of active processes, many of which may be reparative rather than destructive in nature.

The main clinical symptoms of OA are pain and joint deformities, leading to functional insufficiency. In addition to pain, there may be slight crepitation in the affected joint.

The main clinical symptoms of OA are pain and joint deformities, leading to functional insufficiency. If at the beginning of the disease, pain of a mechanical nature occurs only periodically after significant physical exertion and quickly passes at rest, then as OA progresses, the intensity of pain increases, it does not go away after rest and appears at night. The mechanism of pain in OA remains unclear. Since articular cartilage is not innervated and, therefore, is not sensitive to pain, its occurrence is associated with the development of pathological changes in non-cartilaginous structures of the joint. The main causes of pain seem to be the appearance of trabecular microfractures, bone venous stasis and intramedullary hypertension, the presence of chronic synovitis, increased pressure on the subchondral bone, the occurrence of spasm of the periarticular muscles and degenerative changes in the intraarticular ligaments, as well as irritation of osteophytes of surrounding tissues. Pain is often combined with morning stiffness, which is a sign of inflammation.

Currently, the main goal of OA treatment is:

- in slowing the progression of OA,
- reducing pain,
- reducing the risk of exacerbation and involvement of new joints,
- prevention of joint deformity and disability of patients,
- improving the quality of life of patients,
- reduction of side effects of pharmacotherapy and exacerbations of concomitant diseases.

Treatment of OA must necessarily be comprehensive,

and, indeed, the recommendations for the management of OA created by EULAR (European League Against Rheumatism) and OARSI (Osteoarthritis Research Society International) include non-pharmacological, pharmacological and surgical methods [3, 4]. Treatment of OA requires not only a thorough diagnosis, but also an assessment of the prevalence and severity the joint process, the general status of the patient and the presence of concomitant diseases for the correct choice of treatment method, and possibly their combinations.

Commonly used drugs include nonsteroidal anti-inflammatory drugs (NSAIDs) [1]. NSAIDs affect the key mechanisms of pain and inflammation pathogenesis and give a rapid analgesic effect [2]. The high need for effective remedies that can eliminate pain and inflammation determines the widespread use of NSAIDs. Almost half of patients over 65 years of age are prescribed NSAIDs at least once a year by a doctor [3], faced with the problem of choosing a specific drug. It is fundamentally important to prescribe drugs that provide sufficient analgesic and anti-inflammatory effects with maximum tolerance.

Unfortunately, the problem of class-specific side effects of NSAIDs is not limited to the possibility of developing NSAID gastropathy and complications from the cardiovascular system. Many drugs, including indomethacin, ibuprofen, and diclofenac, have been found in vitro to have no positive or even negative effects on articular cartilage.

The aim of the study was to evaluate the efficacy, tolerability, and safety of etoricoxib compared with diclofenac in patients with gonarthrosis.

METHODS

60 outpatient patients (average age 57.6 ± 7.3 years) with knee joint OA of stage 2-3 according to Kelgren (30 patients in each group) with pain when walking > 50 mm according to VAS were included. The demographic and clinical parameters of the groups were comparable (Table 1). The first group took etoricoxib (Coxicea) 90 mg / day, the second — diclofenac 150 mg / day. The study duration was 3 months. Evaluated: the WOMAC index, the "get up and walk" test, the EQ-5D questionnaire, general and biochemical blood tests.

Table 1

Comparative characteristics of patients

	Etoricoxib (group 1) n =30	Diclofenac (group 2) n =30	p
Gender	Women – 26, men - 4	Women – 25, men - 5	
Age (years)	62,4±7,6	61,7±7,0	p>0,05
Duration of illness (years)	7,6±4,1	8,0±3,5	p>0,05
Average weight (kg)	83,8±10,9	83,3±12,4	p>0,05
Average height (cm)	160,3±7,2	161,1±8,3	p>0,05
Average BMI (kg/m^2)	31,5±4,4	31,1±5,1	p>0,05

RESULTS AND DISCUSSION

A significant decrease in pain intensity and improvement in joint function, as well as a decrease in the total WOMAC index, was noted after a month of therapy in both groups of patients and persisted throughout the follow-up period (Table 2). A more rapid decrease in stiffness was noted in patients taking etoricoxib, when statistically significant indicators were obtained on the second visit, and by the end of treatment, a significant decrease was noted stiffness in both groups of patients. Significant improvements in general health and EQ-5 D indicators, as well as a decrease in time spent on the "get up and walk" test, were observed in both groups from the second visit.

After one month, "significant improvement" and "improvement" were more often observed with etoricoxib (86.3%) than with diclofenac (66%), after 3 months of therapy — in 95.8% and 76.2%, respectively ($p < 0.05$). The tolerability of the therapy was good. Adverse events were significantly less common in the

group of patients treated with etoricoxib (5%) compared with diclofenac (16%), especially from the gastrointestinal tract (Table 3).

Thus, based on the results obtained, it can be concluded that etoricoxib has an equal effectiveness with diclofenac in terms of its effect on pain and the functional state of joints. There was a more rapid decrease in stiffness while taking etoricoxib. Etoricoxib has a higher safety compared to diclofenac: it causes significantly fewer adverse reactions from the gastrointestinal tract, in addition, it is associated with a lower frequency of treatment interruption due to other adverse events.

Table 2

Dynamics of the effectiveness of treatment of patients with gonarthrosis when taking the studied drugs

	1st visit	1st visit	2nd visit	2nd visit	3rd visit	3rd visit	4th visit	4th visit
Parameters	**Etoricoxib**	**Diclofenac**	**Etoricoxib**	**Diclofenac**	**Etoricoxib**	**Diclofenac**	**Etoricoxib**	**Diclofenac**
Pain assessment (mm)	68,4±7,6	67,7±7,0	52,4±6,6**	57,3±6,0**	32,4±3,6**	35,7±3,0**	22,4±3,6**	27,7±3,1**
Stiffness assessment (min)	22,4±3,6	21,7±3,3	12,4±2,6**	17,7±2,2**	6,4±2,6**	8,1±2,1**	5,4±1,3**	6,7±2,0**
FI Score (mm)	62,4±7,6	61,7±7,0	62,4±7,6	61,7±7,0	62,4±7,6	61,7±7,0	62,4±7,6	61,7±7,0
NEO "Get up and walk" test	15,4±7,2	14,7±8,0*	10,2±5,0**	10,7±5,1**	8,2±4,6**	7,7±4,5**	6,4±4,2**	6,5±4,0**
Parameters	46,1±12,4	45,7±13,0*	58,4±14,2**	57,7±14,4**	62,4±14,0**	61,7±13,6**	62,4±7,6**	61,7±7,0**
EQ-5	0,4±0,26	0,45±0,24*	0,52±0,22**	0,52±0,2**	0,6±0,19**	0,58±0,21**	0,65±0,2**	0,61±0,15**

* Reliability $p<0.05$ between groups

** The reliability of the indicators $p<0.05$ within each group compared to the beginning of treatment

Table 3

Adverse events in patients with gonarthrosis when taking etoricoxib and diclofenac

	Adverse events	%	Day of Origin	Tactics
Etoricoxib	**1. Epigastric pain – 1 patient** **2. Lower extremity edema – 1 patient** **3. Increased ALT, AST >2.5 times – 1 patient**	**3,33** **3,33** **3,33**	**Days 4-5** **Week 2** **At the 2nd visit**	**Omez 20 mg/day.** **Triampur** **Withdrew from the study**
Total		**10**		
Discontinued from the study		**3,33**		
Diclofenac	**1. Боли в эпигастрии – 3 пациента** **2. Повышение АД – 1 пациент** **3. Повышение АЛТ, АСТ >2,5 раза – 2 пациента**	**10,00** **3,33** **6,66**	**Days 4-5** **Week 2** **At the 2nd visit**	**Omez 20 mg/day;** **Antihypertensive medications** **Removed from the study**

Total		**20**		
Discontinued from the study		**6,66**		

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