ORIGINAL RESEARCH

Assessment Of NSAIDS And Opioids In Pain Reduction In Knee Osteoarthritis

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ABSTRACT
Background: Knee osteoarthritis (OA) affects millions of adults and is characterized by substantial pain, joint stiffness, and functional limitations. The present study was conducted to assess NSAIDS and opioids in pain reduction in knee osteoarthritis. **Materials & Methods:** 50 cases of knee osteoarthritis of both genders were divided into 2 groups of 25 each. Group I were given 200 mg celecoxib and group II were given 64 mg hydromorphone. Pain was assessed using the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) Pain subscale (0–100, 100-worst). **Results:** Group I had 15 males and 10 females and group II had 11 males and 14 females. The mean WOMAC score in group I was 50.2 and in group II was 64.3. The difference was significant (P< 0.05). **Conclusion:** NSAIDS found to be more effective than opioids in pain reduction in knee osteoarthritis.
Key words: Knee osteoarthritis, NSAIDS, Opioids

INTRODUCTION
Knee osteoarthritis (OA) affects millions of adults and is characterized by substantial pain, joint stiffness, and functional limitations. Although over half of all knee OA patients eventually undergo total knee replacement, nearly all will require at least some amount of long-term pain control.[1]

Standard treatment begins with non-pharmacologic approaches to symptom relief and functional restoration, including weight reduction, orthotic devices, exercise, and physical therapy. Because these treatments often provide limited pain relief, pharmacologic analgesics are frequently also employed.[2]

Non-steroidal anti-inflammatory drugs (NSAIDs) and opioids are commonly used to manage joint pain. NSAIDs work by reducing inflammation and blocking pain signals, while opioids work by binding to receptors in the brain to reduce the sensation of pain. NSAIDs are effective at reducing inflammation and swelling in the joints, which can relieve pain and improve mobility. They are also generally well-tolerated, although long-term use can increase the risk of gastrointestinal bleeding and other side effects.[3]

Opioids, on the other hand, are generally less effective for joint pain relief and have a higher risk of side effects and addiction. They are typically reserved for severe pain that cannot be managed with other treatments.[4] It is important to note that both NSAIDs and opioids should be used with caution and under the guidance of a healthcare provider. They can interact with other medications and have potential side effects, so it is important to follow dosing instructions carefully and report any adverse effects to your healthcare provider.[5] The present study was conducted to assess NSAIDS and opioids in pain reduction in knee osteoarthritis.

MATERIALS & METHODS
The present study consisted of 50 cases of knee osteoarthritis of both genders. The present study was conducted only after getting Institutional Ethical Committee approval. The study was carried out at Hind Institute of Medical Sciences, Barabanki (U.P) and conducted for a period from September 2021 to October 2022. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 25 each. Group I were given 200 mg celecoxib and group II were given 64 mg hydromorphone. Pain was assessed using the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) Pain subscale (0–100, 100-worst). Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I: Distribution of patients

Groups	Group I	Group II
Drug	200 mg celecoxib	64 mg hydromorphone
M:F	15:10	11:14

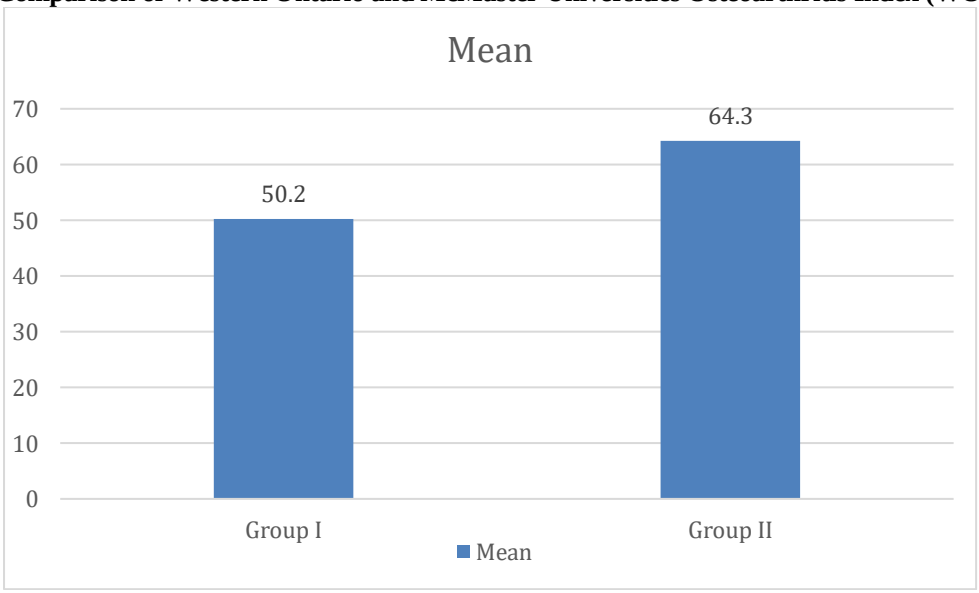
Table I shows that group I had 15 males and 10 females and group II had 11 males and 14 females.

Table II: Comparison of Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)

Groups	Mean	P value
Group I	50.2	0.02
Group II	64.3	

Table II, graph I shows that mean WOMAC score in group I was 50.2 and in group II mean was 64.3. The difference was significant (P< 0.05).

Graph I: **Comparison of Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)**



DISCUSSION

Knee osteoarthritis (OA) is a degenerative joint disease that affects the knee joint. It is a common condition that usually develops in older adults, but it can also affect younger people who have had knee injuries or who have other medical conditions that affect the knee joint. Knee OA is characterized by a breakdown of the cartilage that cushions the bones in the knee joint, causing pain, stiffness, and swelling.[6] The symptoms of knee OA can vary from person to person, but common signs and symptoms include pain in the knee joint, especially when walking, climbing stairs, or standing up from a sitting position, stiffness in the knee joint, especially in the morning or after sitting for a long period of time, swelling and tenderness in the knee joint, a crunching or popping sensation in the knee joint when moving.[7]

There are several treatment options for knee OA, including nonsteroidal anti-inflammatory drugs (NSAIDs) to reduce pain and inflammation, physical therapy to strengthen the muscles around the knee joint and improve range of motion, weight loss to reduce stress on the knee joint, assistive devices such as knee braces or shoe inserts to support the knee joint, injections of corticosteroids or hyaluronic acid into the knee joint to reduce pain and inflammation, surgery such as knee replacement surgery for severe cases of knee OA.[8,9] The present study was conducted to assess NSAIDS and opioids in pain reduction in knee osteoarthritis.

We found that group I had 15 males and 10 females and group II had 11 males and 14 females. Smith et al[10] in their study two reviewers independently screened reports of randomized controlled trials, evaluating oral NSAIDs or opioids for knee OA. 27 treatment arms (9 celecoxib, 4 non-selective NSAIDs [diclofenac, naproxen, and piroxicam], 11 less potent opioids [tramadol], and 3 potent opioids

[hydromorphone, oxycodone]) from 17 studies were included. NSAID and opioid studies reported similar baseline demographics and efficacy withdrawal rates; NSAID studies reported lower baseline pain and toxicity withdrawal rates. Accounting for efficacy-related withdrawals, all drug classes were associated with similar pain reductions (NSAIDs: −18; less potent opioids: −18; potent opioids: −19). Meta-regression did not reveal differential effectiveness by drug class but found that study cohorts with a higher proportion of male subjects and worse mean baseline pain had greater pain reduction. Similarly, results of the network meta-analysis did not find a significant difference in WOMAC Pain reduction for the three analgesic classes. NSAIDs and opioids offer similar pain relief in OA patients. These data could help clinicians and patients discuss likely benefits of alternative analgesics.

We found that mean WOMAC score in group I was 50.2 and in group II was 64.3. Bannuru et al[11] included all studies utilizing any measure of pain, function, or stiffness, and through network meta-analysis, derived effect sizes for each analgesic, which cannot be directly compared to the absolute WOMAC Pain reductions we present. Bjordal et al[12] reported 10mm pain decrements for both NSAIDs and opioids over placebo on the 100 mm Visual-Analog Scale over a one month horizon; However, the VAS cannot be directly compared to the WOMAC Pain subscale. The meta-regression conducted by Myers et al[13] suggested a similar association between baseline and change from baseline in WOMAC composite score as we report for WOMAC Pain.

The limitation the study is small sample size.

CONCLUSION

Authors found that NSAIDS found to be more effective than opioids in pain reduction in knee osteoarthritis.

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