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To compare the effect of non-steroidal anti-inflammatory drugs (NSAIDs) and opioids in KNEE pain

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Abstract---Introduction: Osteoarthritis is a most painful condition mostly seen in old age people in knee and hip joints. This painful condition may causes change in physical activity and reduces quality of life. There are some topical and oral non steroidal anti-inflammatory drugs such as paracetamol, diclofenac sodium and opioid analgesic drugs tramadol. The main aims of the study compare the effect of NSAIDs and opioid analgesic in treatment of knee pain. Aim: To Compare The Effect of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) and Opioid In Reducing Knee Pain. Materials and Methods: The present was conducted at Moti Lal Nehru Medical College, Prayagraj in orthopedics department. Total of 50 patients were included in the study aged 40-60 years. Results: Patients were prescribed with NSAIDs such as paracetamol prescribed to 4 patients, diclofenac 13 patients, ibuprofen 8 patients and opioid analgesic Oxycodone 07 patients, Acetaminophen/hydrocodone 14 patients and tramadol 04 patients. Patients were followed for every 15 days. On the 1st visit after prescribing paracetamol 0 patients were got relief from the pain, diclofenac 3 patients, ibuprofen 02 patients, Oxycodone 0 patients, Hydrocodone 04 patients, tramadol 01 patient. There on 2nd visit paracetamol 1 patients were got relief from the pain, diclofenac 06 patients, ibuprofen 05 patients, Oxycodone 04 patients, Hydrocodone 08 patients, tramadol 02 patient. on 3rd visit paracetamol 3 patients were got relief from the pain, diclofenac 10 patients, ibuprofen 06 patients, Oxycodone 06 patients, Hydrocodone 10 patients, tramadol 04 patient and on 4th visit paracetamol 3

patients were got relief from the pain, diclofenac 13 patients, ibuprofen 08 patients, Oxycodone 06 patients, Hydrocodone 13 patients, tramadol 04 patient. Conclusion: NSAIDs and opioid shows similar pain reduction. Drugs like diclofenac, ibuprofen and tramadol shows better percentage in pain reduction.

Keywords---osteoarthritis, NSAIDs, opioid.

Introduction

Joint pain is the most commonly seen in old age but in united state 65% of the patients having osteoarthritis they were prescribed with NSAIDs and opioid [1]. Most of the opioid drugs were used for musculoskeletal pain [2]. Use of opioid analgesic in US was 70% in 2001 and 84% in the year of 2015 [3]. In some of the studies improvement in pain and physical function was similar for both opioid and NSAIDs but opioid having more adverse drug effects. In the United States, 65% of patients with osteoarthritis are prescribed.[4] But some other studies suggested that opioid are mostly used in chronic and non-cancer pain but mostly seen adverse drug effects such as nausea, vomiting and drowsiness were as in chronic use it may cause increase in risk of fracture, cardiovascular problems, opioid dependence and mortality. Worldwide this use of opioid were increased to 28% in between 2006 to 2015, due to its chronic use death were seen in US in the year 2018, 59.3% mortality were in seen in Canada [4]. The main non-pharmacological aim is to relief the symptoms and functional restoration includes weight reduction, exercise and physical therapy [5]

Materials and Methods

Participants

The present study was conducted at Moti Lal Nehru Medical College, Prayagraj. Total of 50 patients attended orthopedic department with knee pain and ready to give inform consent were included in the study.

Inclusion Criteria

- Age group of 40 to 60 years and having knee pain,
- patients ready to give inform consent.
- Patients of both sex.

Exclusion Criteria

- Age group < 40 years and > 60 years,
- pregnant and lactating women,
- patients not ready to give inform consent

Sample Collection

Patients were questioned about the pain reduction for every 15 days followed up to 2 months.

Study Design

Total of 50 patients were included in the study. Patients were divided two groups

- Group – A 25 prescribed with NSAIDs drugs
 - Paracetamol
 - Diclofenac
 - Ibuprofen
- Group – B 25 Prescribed with Opioid drugs
 - Oxycodone
 - Acetaminophen /hydrocodone
 - Tramadol

Statistical Analysis

The statistical analysis was done using SPSS Software data was interpreted under percentage pain reduction.

Results

Table 1
Tabular column represents the gender of patients in group A and B

Drug groups	Male	%	Female	%	Total
Opioid analgesics (25)	16	64%	09	36%	25
NSAIDs (25)	14	56 %	11	44%	25
Total	30 (60%)		20 (40%)		50

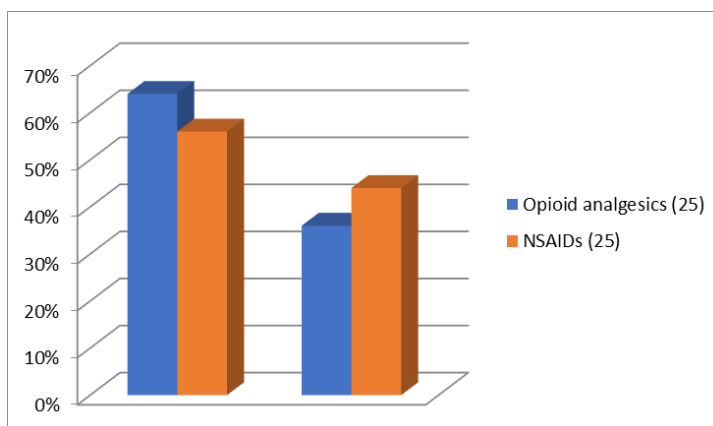


Figure 1. Graphical representation of percentage of gender of the patients in group A and B

Table 2
Tabular column represent number and percentage of patients in age

Age groups	No of patients	% of patients
40 to 45	04	8.00 %
46 to 50	08	16.00 %
51 to 55	14	28.00 %
56 to 60	24	48.00 %
Total	50	100.00 %

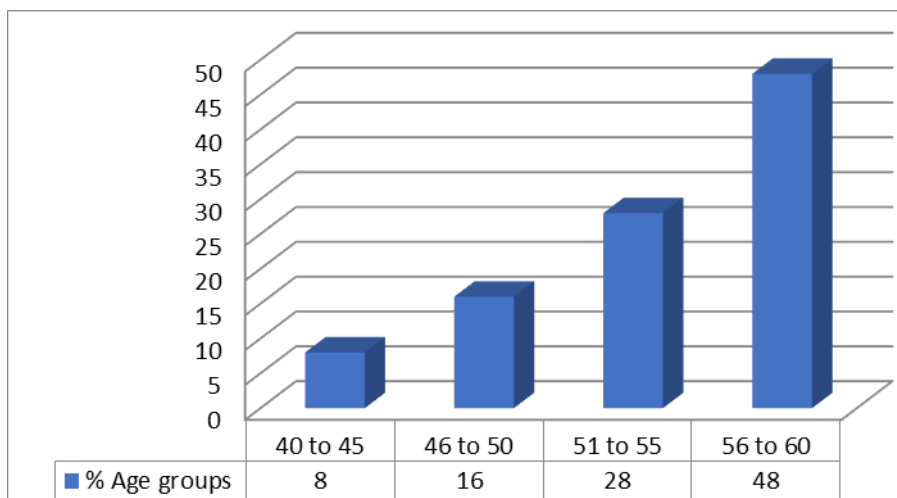


Figure 2. Graphical representation of percentage in age of knee pain patients

Table 3
Opioid and NSAIDs drugs used knee pain

Drugs	Number of Patients	% No of patients
Paracetamol	04	16.00 %
Diclofenac	13	52.00 %
Ibuprofen	08	32.00 %
Oxycodone	07	28.00 %
Acetaminophen /hydrocodone	14	56.00 %
Tramadol	04	16.00%

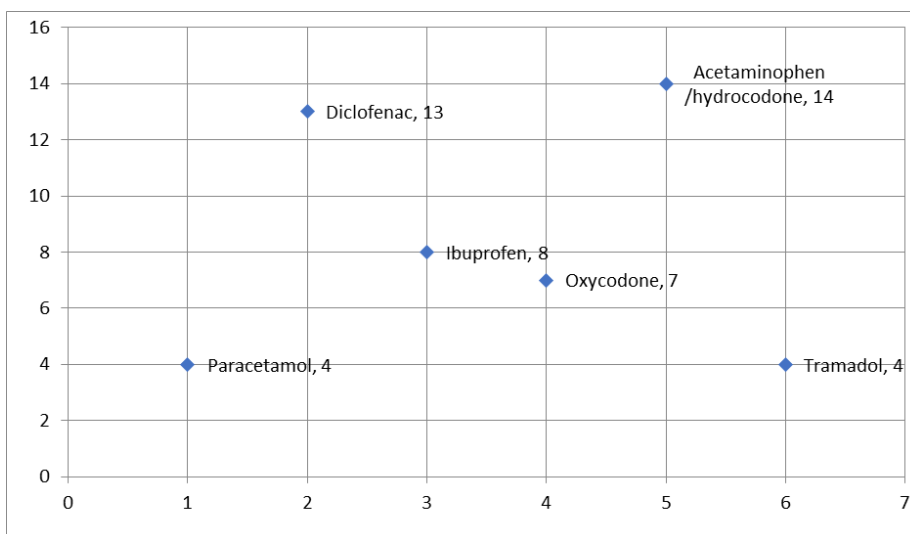


Figure 3. Graphical representation of Opioid and NSAIDs drugs used knee pain patients

Table 4

Tabular representations the pain reduction after use of different classes of opioid and non opioid drugs

Drugs	1 st Visit	2 nd Visit	3 rd Visit	4 th Visit	No effect
Paracetamol	00	01	03	03	01
Diclofenac	03	06	10	13	00
Ibuprofen	02	05	06	08	00
Oxycodene	00	04	06	06	01
Hydrocodene	04	08	10	13	02
Tramadol	00	02	04	04	00

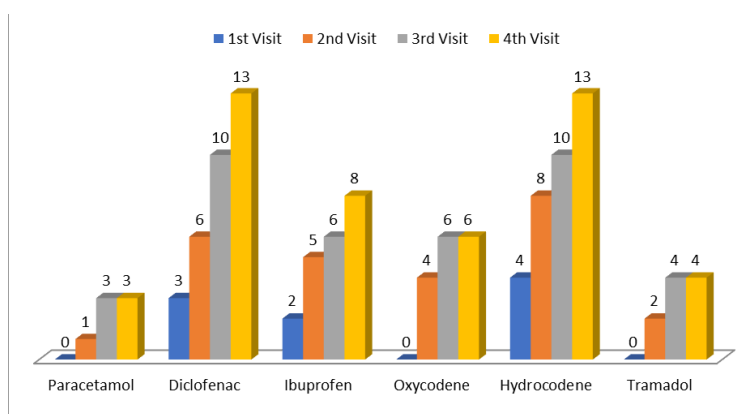


Figure 4. Graphical representation of pain reduction after use of different classes of opioid and non opioid drugs.

Discussion

This present study was conducted to carry out to study the effect of opioid and NSAIDs in knee joint pain. There are different types of pain visceral and somatic pain and there are also different classes of drugs that control the pain i.e. NSAIDs and Opioid analgesics. This NSAIDs shows its action by inhibiting COX 1 and 2 there by it inhibiting PG synthesis. Were as opioid analgesic shows its action by acting on nerves terminates of spinal cord. The present study was carried out on 50 knee joint pain patients and who are ready to give written inform consent. The patients were divided into two groups, group 1 NSAIDs prescribed with paracetamol, diclofenac and ibuprofen and group 2 prescribed with oxycodone, hydrocodone and tramadol. As per this study they were 16 male and 09 females in group 1 and in group 2 there were 14 males and 11 females. Total there were 30 male and 20 females patients. Majority of the patients were in the age group 56 to 60 years 24 patients followed by 51 to 55 years 14 patients, 46 to 50 years 08 patients and 40 to 45 there were 04 patients.

Patients were prescribed with NSAIDs such as paracetamol prescribed to 4 patients, diclofenac 13 patients, ibuprofen 8 patients and opioid analgesic Oxycodone 07 patients, Acetaminophen/hydrocodone 14 patients and tramadol 04 patients. Patients were followed for every 15 days. On the 1st visit after prescribing paracetamol 0 patients were got relief from the pain, diclofenac 3 patients, ibuprofen 02 patients, Oxycodone 0 patients, Hydrocodone 04 patients, tramadol 01 patient. There on 2nd visit paracetamol 1 patients were got relief from the pain, diclofenac 06 patients, ibuprofen 05 patients, Oxycodone 04 patients, Hydrocodone 08 patients, tramadol 02 patient. on 3rd visit paracetamol 3 patients were got relief from the pain, diclofenac 10 patients, ibuprofen 06 patients, Oxycodone 06 patients, Hydrocodone 10 patients, tramadol 04 patient and on 4th visit paracetamol 3 patients were got relief from the pain, diclofenac 13 patients, ibuprofen 08 patients, Oxycodone 06 patients, Hydrocodone 13 patients, tramadol 04 patient. Our study concedes with the study of Bruno R da Costa (2021) ^[4] in his study he concluded that topica diclofenac shows better pain relief when compared with that of Etoricoxib. Another study by J.M.Jordan (2016)^[6] in his study he concluded that ibuprofen was more effective in controlling pain and lesser in cost. After 2months on follow-up some of the patients did not get any relief from the pain after prescribing paracetamol out of 4 patients 1 patients did not get relief, Oxycodone drug was prescribed to 7 patients among them 1 patient did not get relief from pain and Hydrocodone drug was prescribed to 14 patient among them 2 patients did not get relief from the pain and rest of all the drugs was shown relief from the knee pain in all patients. S.R.Smith et al (2016)^[7] concluded that NSAIDs and opioid shows similar pain relief in OA patients.

Conclusion

NSAIDs and opioid shows similar pain reduction. Drugs like diclofenac, ibuprofen and tramadol shows better percentage in pain reduction.

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