ORIGINAL ARTICLE

Comparison of different analgesic in controlling pain in patients undergoing Orthodontic Treatment- An Original Research

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***ABSTRACT*:**
Background: In orthodontic treatment, patient experience pain. The present study was conducted to compare role of acetaminophen and ketorolac in controlling pain in patients undergoing orthodontic treatment. **Materials & Methods:** The present study was conducted on 66 patients of both genders undergoing orthodontic treatment. Patients were divided into 2 groups of 33 each. Group I received tab. Acetominofen 500 mg and group II received 10 mg keterolac. All patients were prescribed with a single preoperativedose, 1 hour before the initial archwire placement. All patientswere asked to note the degree of painperceived at 24 hours; 3 days, and 7th days. **Results:** Out of 66 patients, each group had equal number of patients (33). There was significant improvement in pain score on 3rd and 7th day in both groups (P< 0.05). **Conclusion:** Both analgesics significantly decreased the pain intensity in patients undergoing orthodontic treatment. However, Keterolac found to be better as compared to acetoaminofen.
Key words: Acetominofen, Analgesics, Keterolac.

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INTRODUCTION

The experience of pain and discomfort duringthe tenure of orthodontic treatment is common; however,it differs from person to person. Orthodontic treatmentmethods such as separation, placement of archwires, activation of fixed or removable appliances, and debonding cause a certain degree of pain to the patient.Hence, pain and discomfort may be the sole reason thatkeeps the patient from seeking orthodontic treatment.Studies till now suggest that pain percentage experiencedby orthodontic patient population is approximately 95%.It was found that adult patients undergoing orthodontictreatment stated discomfort as the most discouraging aspect of orthodontia.[1]

Many studies have shownthe impact that pain and discomfort have onorthodontic treatment that can be forcibleenough to make some patients abandontherapy. More often pain causes patients tobecome indifferent to their progress intreatment and to stop cooperating by notwearing appliances and auxiliaries like rubberbands and by failing to maintain goodoral hygiene.[2]

Pain appears to be more intenseduring the early stages of treatmentwhen teeth are being moved thegreatest distances. Then the durationand the intensity of the discomfortdiminish but do not disappear entirely,remaining related to the nature of theprovocative action. Maximum intensityof pain is reached about twelvehours after the application of the forceand lasts for two to three days and, insome cases, as long as 15 days. Various analgesics such as acetaminophen, ibuprofen and ketorolac have shown significant improvement.[3]The present study was conducted to compare role of acetaminophen and ketorolac in controlling pain in patients undergoing orthodontic treatment.

MATERIALS & METHODS

The present study was conducted in the department of orthodontics. It comprised of 66 patients of both genders undergoing orthodontic treatment. All were informed regarding the study and written consent was obtained. Ethical clearance was obtained prior to the study.

Patient's information such as name, age, gender etc. was recorded. Patients were divided into 2 groupsof 33 each. Group I received tab. Acetominofen 500 mg and group II received 10 mg keterolac. 0.022" slot and0.016" NiTi initial aligning wirewere used for patients with mild-to-moderate crowding.All patients were prescribed with a single preoperativedose, 1 hour before the initial archwire placement. All patientswere asked to note the degree of painperceived at 24 hours; 3 days, and 7th days. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I: Distribution of patients

Total- 66		
Groups	**Group I**	**Group II**
Number	33	33

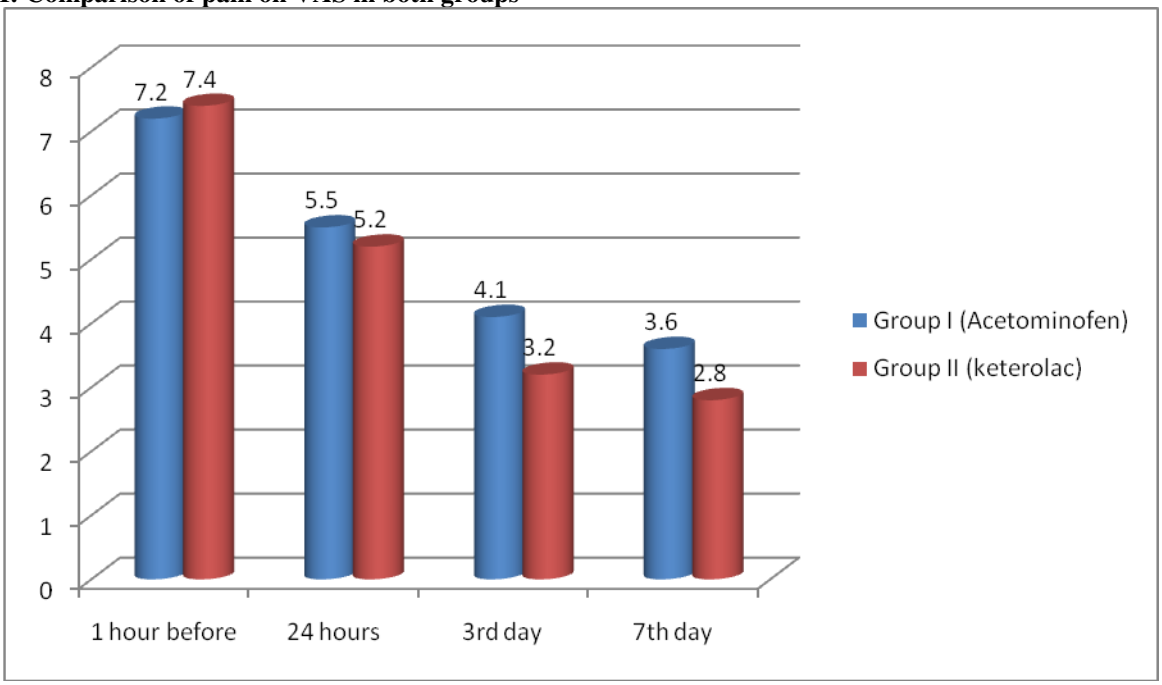
Table I shows that out of 66 patients, each group had equal number of patients (33).

Table II Comparison of pain on VAS in both groups

Timing	Group I(Acetominofen)	Group II(Keterolac)	P value
1 hour before	7.2	7.4	0.9
24 hours	5.5	5.2	0.4
3rd day	4.1	3.2	0.05
7th day	3.6	2.8	0.01

Table II, graph I shows that there was significant improvement in pain score on 3rd and 7th day in both groups (P< 0.05).

Graph I: Comparison of pain on VAS in both groups



DISCUSSION

Orthodontists should use the intensityof the nociceptive pain a patient issuffering as a guide in determining howto treat it, taking into account theeffectiveness and risk profile ofthe prospective agent with regard tothe site, the age of the patient, theeventual concomitant therapies, and itsaddictive potential in order to anticipateand prevent undesirable side effects.They should also consider the risk ofcumulative increase in dosage becomingtoxic.[4]

Despite their widespread use in orthodontia eventoday, there is still no universal evidence-based recommendation for the use of analgesics. Bothacetaminophen and ibuprofen are commonly used by theclinicians for the relief of orthodontic pain.People who endure from a toothache ororthodontic-related pain have a common tendency toself-medicate, and overdose with readily available overthe counter analgesics instead of seeking professionaldental attention.[5] This necessitates the development ofevidence-based guidelines for the prescription of thecorrect dosage of the most effective drugs available andalso raises awareness among the health-care professionalsregarding the importance of early remedial treatment.[6]The present study was conducted to

compare role of acetaminophen and ketorolac in controlling pain in patients undergoing orthodontic treatment.

We found that out of 66 patients, each group had equal number of patients (33). There was significant improvement in pain score on 3rd and 7th day in both groups (P< 0.05).

Bernhardt et al[7] in their study group 1 patients were prescribed acetaminophen (500 mg), while groups 2–4 wereprescribed ibuprofen (400 mg), ketorolac (10 mg), and placebo (lactose capsule),respectively. All the prescriptions were given as a single‐dose preoperatively.There were significant relationships betweenthe four drug groups for each parameter, namely chewing, biting, occluding onanterior teeth together, and occluding on posterior teeth together.

As a first line of action, orthodontistscan consider an optimal dose of paracetamol, more commonly known as acetaminophen in the UnitedStates, Canada, and Japan, as theanalgesic of choice. The recommendeddosage is 1,000 mg persingle dose and up to 4,000 mg perday for adults, with a minimum intervalof four hours between doses,adjusted to the weight and the age of the patient.If the acetaminophen is ineffective,the orthodontist can prescribe a nonsteroidalanti-inflammatory drug(NAID) such as ibuprofen, in a shorttermanalgesic dosage of 200 to 400 mg at a time, renewable after sixhours, but not to exceed 1,200 mg perday, adjusted to the weight and age ofthe patient, for a total of five days orfewer.[8]

For intense pain, orthodontistscan prescribe analgesics of level II.Because a combination of drugs likeCodeine + Acetaminophen or Tramadol+ Acetaminophen may have seriousside effects, especially whenpatients may be taking other over thecounter pain relievers without medicalsupervision, orthodontists should prescribethem with great care and watch over their use scrupulously.[9]

CONCLUSION

Both analgesics significantly decreased the pain intensity in patients undergoing orthodontic treatment. However, Keterolac found to be better as compared to acetoaminofen.

REFERENCES

1. Weiss DD, Carver DM. Transcutaneous electrical neuralstimulation for pain control. J ClinOrthod 1994;28:670‐2.
2. Marie SS, Powers M, Sheridan JJ. Vibratory stimulation as amethod of reducing pain after orthodontic appliance adjustment.J ClinOrthod 2003;37:205‐8.
3. Polat O, Karaman AI, Durmus E. Effects of preoperativeibuprofen and naproxen sodium on orthodontic pain. AngleOrthod 2005;75:791‐6.
4. Bradley RL, Ellis PE, Thomas P, Bellis H, Ireland AJ, Sandy JR,*et al.* A randomized clinical trial comparing the efficacy ofibuprofen and paracetamol in the control of orthodontic pain.Am J OrthodDentofacialOrthop 2007;132:511‐7.
5. Bhati M, Duxbury AJ, Macfarlane TV, Downer MC. Analgesicsrecommended by dentists and pharmacists, and used by thegeneral public for pain relief. Int J Health PromotEduc2000;38:95‐103.
6. Steen Law SL, Southard KA, Law AS, Logan HL, Jakobsen JR.An evaluation of preoperative ibuprofen for treatment of painassociated with orthodontic separator placement. Am J OrthodDentofacialOrthop 2000;118:629‐35.
7. Bernhardt MK, Southard KA, Batterson KD, Logan HL,Baker KA, Jakobsen JR. The effect of preemptive and/orpostoperative ibuprofen therapy for orthodontic pain. Am JOrthodDentofacialOrthop 2001;120:20‐7.
8. Kohli SS, Kohli VS. Effectiveness of piroxicam and ibuprofenpremedication on orthodontic patients' pain experiences. AngleOrthod 2011;81:1097-102.