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Preoperative Ketorolac and Aceclofenac for Control of Pain after Orthodontic Separator Placement – An Observational Study

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Abstract: *The control of pain in different stages during orthodontic treatment is important for orthodontic practitioners and their patients. Following the application of separators, many patients experience pain till the next 24 hours. Usually orthodontists permit their patients to consume analgesics to get rid of the pain. This study compares the effects of pre-operative administration of Ketorol DT and Aceclofenac on pain relief following separator placement. Patients were segregated into 3 groups (Use of Placebo, Ketorol DT and Aceclofenac) and pain following separator placement was evaluated using Visual analogue scale.Patients prescribed with Ketorol DT exhibited less pain and discomfort compared with other groups.*

Keywords: *Ketorolac, Aceclofenac*

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I. Introduction

Orthodontics plays a significant role in achieving ideal function and aesthetics. To achieve these goals, patient has to go through some discomfort and pain. Pain is one of the main reasons why many patients opt out of orthodontic treatment[1]. This may lead to non co-operation during treatment or patient dropping out from orthodontic treatment. After the placement of separators patient can experience pain till the next 24 hours[2]. To reduce the intensity of discomfort and pain, thus, drugs are advised.The study objective is to evaluate which NSAIDs will lessen the effect of pain among ketorolac and Aceclofenac.

II. Materials & Methods

Inclusion criteria for this study involves male and female patients within the age group 20-30 years in ethnic Tamil Nadu and Pondicherry population.Patients who had undergone previous orthodontic treatment, those who were under any medications for systemic problems or who had allergy towards NSAIDs or who had a history of asthma, gastritis and bleeding disorders were excluded from the study. In addition to these criteria, the patients who had undergone tooth extractions 2 weeks before or after separator placement were also excluded. The subjects were divided into 3 groups. Each group had a sample size of 20 patients. Group 1 was a control group where a placebo drug was administrated. Group 2 contains patients administrated with Dispersible Ketorolac (10mg). Group 3 includes patients administered with Aceclofenac (100mg).Prior to banding and bonding procedures, elastic orthodontic separators (American Orthodontics) were placed between the maxillary and mandibular molars. Both the investigator and the patients were blinded and random allocation was done using envelopes for segregating the patients. All the drugs were given to the patients in a brown sealed pouchso that no information is given regarding the drugs delivered. Visual analogue scale chart of upto 100mm was used for recording their level of pain/discomfort. The patients were asked to record the pain scale in the time intervals: immediately, 2 hours, 6 hours after placement of separators, at bed time and 24 hours later and this was calculated both when teeth are not in contact and when teeth are contacted in centric occlusion.

III. Results

The patients advised with Ketorol DT exhibited less pain and discomfort compared with other groups followed by patients administrated with Aceclofenac. The control group had the highest level of discomfort and pain.

IV. Discussion

Bird et al in 2007 showed that there is no significant difference in pain after separator placement by giving Acetaminophen and Ibuprofen[3]. Bernhardt et al and Steen Law et al conducted investigations into the use of Ibuprofen for pain relief in orthodontic patients and gave the inference that this drug when administered 1 hour before separator placement can bring down the pain[4,5].It is a known inference that rate of orthodontic tooth movement is reduced following the use of analgesics[6]. Investigations were not found in the literature, which have specifically compared the effectiveness of ketorolac with Aceclofenac for orthodontic separator pain relief. There is significant difference in pain relief after the placement of separator by giving Ketorolac and Aceclofenac based on this study results.The group of patients who administered Ketorolac showed significant reduction in pain than those who administered Aceclofenac. ($p<0.01$) Significant differences in pain were found over time, pain tended to decrease in second hour after separator placement then gradually decreased up to 24 hour time period. This efficiency of Ketoralacin dispersible form could be attributed to the fact that it has higher bioavailability and absorption than other NSAIDs.[7]

V. Conclusion

Within the limitations of this study, it can be concluded as the administration of Ketorolac in dispersible form prior to separator placement can decrease the pain and discomfort in patients.

References

[1]. Erdinc AM, Dincer B. Perception of pain during orthodontictreatment with fixed appliances. Eur J Orthod 2004;26:79-85.
[2]. Bergius M, Berggren U, Kiliaridis S. Experience of pain during an orthodontic procedure. Eur J Oral Sci 2002;110:92-8.
[3]. Bird SE, Williams K, Kula K. Preoperative acetaminophen vs ibuprofen for control of pain after orthodontic separator placement. Am J OrthodDentofacialOrthop 2007;132:504-10
[4]. Bernhardt MK, Southard KA, Batterson KD, Logan HL, Baker KA, Jakobsen JR. The effect of preemptive and/or postoperative Ibuprofen therapy for orthodontic pain. Am J OrthodDentofacialOrthop 2001;120:20-7.
[5]. 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.
[6]. Kehoe MJ, Cohen SM, Zarrinnia K, Cowan A. The effect ofacetaminophen, ibuprofen, and misoprostol on prostaglandin E2synthesis and the degree and rate of orthodontic tooth movement.Angle Orthod 1996;66:339-49.
[7]. Wajekar NA, Sastri MR, Vazirani NN, PathakSS.Comparison between acetaminophen, ibuprofen and ketorolac as an efficient single dose pre operative medication for control of pain associated with intial aligning archwire: A double blind randomized controlled trial.J Indian OrthodSoc 2019;53:3-9.

TABLE 1: MEAN VALUES OF GROUP 1,2 & 3 FROM VISUAL ANALOGUE SCALE

S.No	Analgesic	Time (After separator placement)	Mean pain (SD) Teeth not in contact	Mean pain (SD) Teeth in contact
1	Group 1 – Placebo drug administrated	Immediately	27.8	35.3
		After 2 hours	20.5	39.6
		After 6 hours	44.7	52.8
		Bed time	40.3	53.2
		After 24 hours	34.4	71.7
2	Group 2- Ketorolac	Immediately	24.5	36.8
		After 2 hours	8.7	18.9
		After 6 hours	24.6	42.1
		Bed time	25.4	47.9
		After 24 hours	27.3	55.1
3	Group 3- Aceclofenac	Immediately	28.5	36.8
		After 2 hours	17.8	24.7
		After 6 hours	24.6	56.3
		Bed time	29.6	52.1
		After 24 hours	30.5	68.7

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