

## Original Research

### Assessment of efficacy of Aceclofenac and Ibuprofen in controlling the postoperative pain in patients undergoing gingivectomy

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#### ABSTRACT:

**Background:** Gingivectomy is used in the elimination of suprabony periodontal pockets or pockets not extending beyond mucogingival junction. Hence; the present study was planned for assessing and comparing the efficacy of Aceclofenac and Ibuprofen in controlling the postoperative pain in patients undergoing gingivectomy. **Materials & methods:** A total of 60 patients who were scheduled to undergo gingivectomy were included and analyzed. All the patients were broadly divided into three study groups with 20 patients in each group; Group 1 (100mg tab Aceclofenac group orally), Group 2 (400 mg Ibuprofen group) and group 3 (Placebo- Control group). All the drugs were administered 30 minutes before the gingivectomy procedure. Postoperative pain was assessed through VAS (Visual analogue score) on a scale of 0 to 10 with 0 indicating no pain and 10 indicating worse severe pain. All the surgical procedures were carried out in local anaesthesia. **Results:** Among patients of group 1, mean VAS postoperatively at 8 hours, 15 hours, 24 hours and day 2 was found to be 1.3, 0.9, 0.5 and 0.3 respectively. Among patients of group 2, mean VAS postoperatively at 8 hours, 15 hours, 24 hours and day 2 was found to be 1.9, 1.5, 0.5 and 0.4 respectively. Among patients of group 3, mean VAS postoperatively at 8 hours, 15 hours, 24 hours and day 2 was found to be 2.1, 1.6, 0.9 and 0.4 respectively. While comparing the mean VAS at different time intervals in between the three study groups, significant results were obtained only at 8 hours postoperatively. **Conclusion:** Efficacy of Aceclofenac in controlling postoperative pain was better after gingivectomy procedure in comparison to Ibuprofen then when administered 30 minutes preoperatively.

**Key words:** Aceclofenac, Gingivectomy, Ibuprofen

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#### INTRODUCTION

Major goal of periodontal therapy is to re-establish anatomical and physiological conditions conducive to long term health and function of periodontium. Hyperplasia and/or overgrowth of the gingiva are rather common and related to a variety of etiologic factors and pathogenic processes, (e.g., dental plaque, mouth breathing, hormonal imbalance, medications).<sup>1-3</sup> It is quite common to note chronic inflammatory Gingival overgrowths during and/or post orthodontic treatment. Sometimes the overgrowths may even potentially complicate and/or interrupt orthodontic treatment. In spite of frequent patient education and motivation of the patient regarding oral hygiene, it's quite common to see patients developing gingival over

growths because of poor compliance and complicated orthodontic appliance designs. The mechanism by which gingival enlargement occurs in some patients during orthodontic treatment is not fully understood. The initiation and development of periodontal disease depend on a dynamic equilibrium between the microbial challenge and the host's immune-inflammatory responses.<sup>4, 5</sup> Gingivectomy is used in the elimination of suprabony periodontal pockets or pockets not extending beyond mucogingival junction.<sup>4, 6</sup> Hence; the present study was planned for assessing and comparing the efficacy of Aceclofenac and Ibuprofen in controlling the postoperative pain in patients undergoing gingivectomy.

**MATERIALS & METHODS**

The present study was conducted with the aim of analyzing and comparing the efficacy of Aceclofenac and Ibuprofen in controlling the postoperative pain in patients undergoing gingivectomy. A total of 60 patients who were scheduled to undergo gingivectomy were included and analyzed. All the patients were broadly divided into three study groups with 20 patients in each group; Group 1 (100mg tab Aceclofenac group orally), Group 2 (400 mg Ibuprofen group) and group 3 (Placebo- Control group). All the drugs were administered 30 minutes before the gingivectomy procedure. Complete demographic details of all the patients were obtained. Inclusion criteria for the present study included:

- Patients with negative history of any systemic illness,
- Patients with negative history of any known drug allergy,
- Patients who had non-neoplastic gingival enlargement

Postoperative pain was assessed through VAS (Visual analogue score) on a scale of 0 to 0 with 0 indicating no pain and 10 indicating worse severe pain. All the surgical procedures were carried out in local anaesthesia. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Student t test were used for evaluation of level of significance.

**RESULTS**

In the present study, a total of 60 patients who were scheduled to undergo gingivectomy were included and analyzed. All the patients were broadly divided into three study groups with 20 patients in each group; Group 1 (Aceclofenac group), Group 2 (Ibuprofen group) and group 3 (Control group). Mean age of the patients of group 1, group 2 and group 3 was found to be 42.8 years, 44.9 years and 44.7 years respectively. In group 1, group 2 and group 3, there were 12 males, 10 males and 12 males respectively. In the present study, among patients of group 1, mean VAS postoperatively at 8 hours, 15 hours, 24 hours and day 2 was found to be 1.3, 0.9, 0.5 and 0.3 respectively. Among patients of group 2, mean VAS postoperatively at 8 hours, 15 hours, 24 hours and day 2 was found to be 1.9, 1.5, 0.5 and 0.4 respectively. Among patients of group 3, mean VAS postoperatively at 8 hours, 15 hours, 24 hours and day 2 was found to be 2.1, 1.6, 0.9 and 0.4 respectively. While comparing the mean VAS at different time intervals in between the three study groups, significant results were obtained only at 8 hours postoperatively.

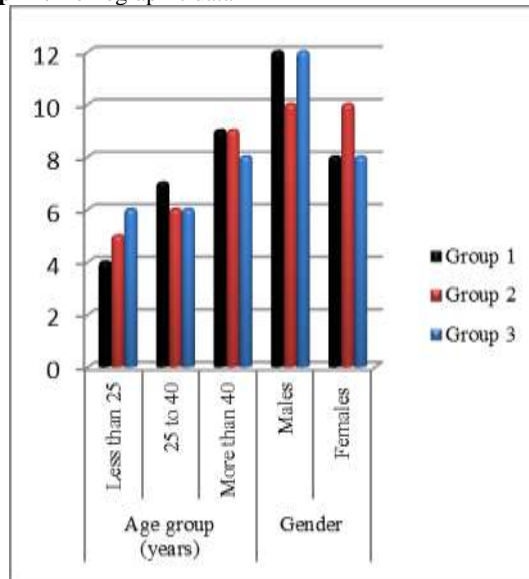
**DISCUSSION**

Periodontal health is directly related to the accumulation of bacterial plaque, the primary etiologic agent in gingivitis and periodontitis. Factors that predispose toward an accumulation of bacterial plaque will increase the risk of marginal gingivitis. If gingival invaginations predispose to

plaque accumulation and gingivitis, their formation during and persistence after orthodontic tooth movement could have an adverse effect on future periodontal health.<sup>6-8</sup>

The concept of pre-emptive analgesia minimizes postoperative pain by preventing central sensitization. Crile, who introduced pre-emptive analgesia, advocated the use of regional blocks in addition to general anesthesia to prevent intraoperative nociception caused by changes in the central nervous system during surgery. The revival of this idea was associated with a series of animal studies started by Woolf.

**Graph 1:** Demographic data



**Table 1:** Comparison of post-gingivectomy pain at different postoperative time intervals

Postoperative Time interval	Mean VAS			p- value
	Group 1	Group 2	Group 3	
8 hours	1.3	1.9	2.1	0.01 (Significant)
15 hours	0.9	1.5	1.6	0.42
24 hours	0.5	0.5	0.9	0.82
Day 2	0.3	0.4	0.4	0.33

They suggested that the administration of opioids or local anesthetics before surgery might reduce the C-fiber-induced injury associated with incision and, thereby, the intensity of postoperative pain.<sup>9-12</sup> Hence; the present study was planned for assessing and comparing the efficacy of Aceclofenac and Ibuprofen in controlling the postoperative pain in patients undergoing gingivectomy.

In the present study, a total of 60 patients who were scheduled to undergo gingivectomy were included and analyzed. Mean age of the patients of group 1, group 2 and group 3 was found to be 42.8 years, 44.9 years and 44.7 years respectively. Pereira GM et al evaluated the clinical efficacy of ibuprofen in pain prevention after unit implant surgery. 54 insertion surgeries of unitary implants were

performed. Two groups have received two different protocols 1 hour before surgery: Ibuprofen group (IBU) 600 mg of ibuprofen; and (2) placebo group (maize starch). The intensity of the pain was evaluated through the visual analogue scale (VAS) in 6 times (1, 6, 12, 24, 48 and 72 hours after the surgery). Patients were instructed to take 750 mg of paracetamol as rescue medication, if necessary. The IBU group had significantly lower VAS scores overall (IBU = 0.30, ± 0.57; placebo = 1.14, ± 1.07; p<0.001) and at all times in the intra, intergroup comparisons and time/group interaction than the placebo group (p<0.001). The use of rescue medication was significantly lower and the postoperative time was longer in the IBU group compared to placebo (p = 0.002). The single use of ibuprofen was found to be significantly superior in reducing pain after unit implant surgery compared to placebo.<sup>13</sup>

In the present study, among patients of group 1, mean VAS postoperatively at 8 hours, 15 hours, 24 hours and day 2 was found to be 1.3, 0.9, 0.5 and 0.3 respectively. Among patients of group 2, mean VAS postoperatively at 8 hours, 15 hours, 24 hours and day 2 was found to be 1.9, 1.5, 0.5 and 0.4 respectively. Among patients of group 3, mean VAS postoperatively at 8 hours, 15 hours, 24 hours and day 2 was found to be 2.1, 1.6, 0.9 and 0.4 respectively. While comparing the mean VAS at different time intervals in between the three study groups, significant results were obtained only at 8 hours postoperatively. Costa FW et al investigated the effectiveness of preemptive analgesia with nonsteroidal anti-inflammatory drugs (NSAIDs) in third-molar surgery. A PubMed literature search was conducted for articles restricted to the English language using the following terms (DeCS/MeSH) or combinations: analgesia, third molar, and preemptive. From a total of 704 articles, 6 (n = 420 subjects) were selected. All studies presented a low risk of bias (Cochrane criteria) but exhibited high heterogeneity of methods. Two studies were excluded from the meta-analysis because they did not have adequate numeric values (dichotomous data) for the calculations. Preemptive analgesia showed no significant benefit (n = 298, P = .2227, odds ratio: 2.30, 0.60–8.73) in reducing postoperative pain after removal of lower impacted third molars. However, there was a probable direct relationship between the effectiveness of NSAIDs in preemptive analgesia for removal of third molars and its selectivity for the cyclooxygenase-2 (COX-2). Preemptive analgesia did not have a significant effect in reducing postoperative pain after removal of lower impacted third molars.<sup>14</sup>

## CONCLUSION

From the above results, the authors concluded that efficacy of Aceclofenac in controlling postoperative pain was better after gingivectomy procedure in comparison to Ibuprofen then when administered 30 minutes preoperatively.

## REFERENCES

1. Strauss RA. Lasers in maxillofacial surgery. *Dent Clin North Am.* 2000;4:851–873.
2. Bokenkamp A, Bohnhorst B, Beier C. Nifedipine aggravates cyclosporine A induced hyperplasia. *Pediatr Nephrol.* 1994;8:181.
3. Samieirad S, Afrasiabi H, Tohidi E, Qolizade M, Shaban B, Hashemipour MA. Evaluation of caffeine versus codeine for pain and swelling management after implant surgeries: A triple blind clinical trial. *J Craniomaxillofac Surg.* 2017;45:1614–1621.
4. Loe H, Theilade E, Jensen SB. Experimental gingivitis in man. *J Periodontol.* 1965;36(3):177–187.
5. Alcântara CEP, Falci SGM, Oliveira-Ferreira F, Santos CRR, Pinheiro MLP. Pre-emptive effect of dexamethasone and methylprednisolone on pain, swelling, and trismus after third molar surgery: A split-mouth randomized triple-blind clinical trial. *Int J Oral Maxillofac Surg.* 2014;43:93–98.
6. Irvine J, Afrose A, Islam N. Formulation and delivery strategies of ibuprofen: challenges and opportunities. *Drug Dev Ind Pharm.* 2018;44:173–83.
7. Moore RA, Derry S, Straube S, Ireson-Paine J, Wiffen PJ. Faster, higher, stronger? Evidence for formulation and efficacy for ibuprofen in acute pain. *Pain.* 2014;155:14–21.
8. Eduardo CP, Navarro RS, Gontijo I, Haypek P, Correa MS. Utilizacao Clinica do Laser em Odontopediatria. In: Gutknecht N, Gutknecht CP, editors. *A Odontologia e o laser-Atuacao do Laser na Especialidade Odontologica.* GmbH, Quintessenz Verlags; Berlin: 2004. pp. 241–262.
9. Araújo FAC, Santos TS, Morais HHA, Silva EDO, Vasconcelos RJH. Comparative analysis of preemptive analgesic effect of tramadol chlorhydrate and nimesulide following third molar surgery. *J Craniomaxillofac Surg.* 2012;40:e346–e349.
10. Gazal G, Al-Samadani KH. Comparison of paracetamol, ibuprofen, and diclofenac potassium for pain relief following dental extractions and deep cavity preparations. *Saudi Med J.* 2017;38:284–291.
11. Crile GW. The kinetic theory of shock and its prevention through anociassociation. *Lancet.* 1913;185:7–16.
12. Woolf CJ. Evidence for a central component of postinjury pain hypersensitivity. *Nature.* 1983;308:686–688
13. Pereira GM, Cota LO, Lima RP, Costa FO. Effect of preemptive analgesia with ibuprofen in the control of postoperative pain in dental implant surgeries: A randomized, triple-blind controlled clinical trial. *J Clin Exp Dent.* 2020;12(1):e71-e78.
14. Costa FW, Esses DF, de Barros Silva PG, et al. Does the Preemptive Use of Oral Nonsteroidal Anti-inflammatory Drugs Reduce Postoperative Pain in Surgical Removal of Third Molars? A Meta-analysis of Randomized Clinical Trials. *Anesth Prog.* 2015;62(2):57-63.