

## EFFECTIVENESS OF NSAID AULIN ON THE POSTOPERATIVE PAIN AT PERIODONTAL SURGICAL PROCEDURES

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### ABSTRACT

**BECKGROUND:** Pain is a common feature of the early postsurgical stage. Numerous studies have been conducted to investigate the effect of non-steroidal anti-inflammatory drugs (NSAID) to control postoperative pain after periodontal surgery.

**AIM:** The aim of this preliminary study is to assess the effectiveness of Aulin (Nimesulide) on the postoperative pain in different surgical procedures of patients with periodontitis treatment and/or mucogingival deformities corrections.

**RESULTS AND CONCLUSION :** In the limitations of the present study and on the base of the receive results it may to conclude that Aulin is an effective analgesic agent and it's use in the postoperative period in the surgical treatment of periodontal diseases can control the postsurgery pain.

**Key words:** anti-inflammatory agents, pain measurement, Nimesulide, postoperative pain, periodontal surgery

Surgical periodontal procedures are an integral component of the recent approach to the treatment of periodontal diseases. Postoperative pain after periodontal surgical procedures is a common occurrence (3). The perception of pain is highly subjective and therefore varies considerably among individuals. Many factors may influence pain intensity, such as the nature, duration, and extent of the surgery, and psychological aspects, such as stress and anxiety. Numerous studies have been conducted to investigate the effect of non-steroidal anti-inflammatory drugs (NSAID) to control postoperative pain and inflammation after periodontal surgery, with generally favorable results (2, 4, 6, 7, 9, 10, 11, 12).

Aulin (Nimesulide) belongs to class of chemical compounds known as sulfonanilids with good analgesic and anti-inflammatory activities (1). The main pharmacological actions include inhibition of prostaglandin synthesis via COX-2, reduction cytokine-induced hyperalgesia by TNF- $\alpha$  suppressing, reduces histamine and production of superoxide radicals received from neutrophiles by suppressing protein-kinase C, and also suppress synthesis

of proteinase enzymes (MMP) (5, 9, 13, 14). Administration of the NSAID drug Aulin postoperative after surgical procedures on gingival and periodontal tissues with the pharmacological effects describes might to contribute to inhibition on the pain and lower morbidity of the postoperative period (1).

The aim of this preliminary study is to assess the effectiveness of Aulin on the postoperative pain in various surgical procedures of patients with periodontitis and/or mucogingival deformities.

### MATERIALS AND METHODS

In this study were scheduled 30 patients between the ages 25-65 with generalized moderate to advanced chronic periodontitis and/or mucogingival problems whose need some surgical periodontal treatment and were operated. They received Aulin twice daily x100 mg for 4 days – in early postoperative period.

The surgical periodontal procedures are performed using of local anaesthesia (4% Ubistesin with epinephrine 0,006mg). Patients with a history of systemic disease, such as diabetes mellitus, uncontrolled hypertension, or a gastric ulcer, pregnant and at risk for infective endocarditis were excluded from this study. By means of a self-rating record, each patient rated his pain postoperatively. For evaluation of the pain was used four-point verbal rating scale (VRS-4) (8).

Patients were instructed to complete a pain diary every hour for the first 8 hours after the surgery and three times a day on the following 3 days. Each of the patients received Aulin initially to the end of the 1 hour after intervention and the 8 hour after the first dose, and for the next 3 days twice daily x100 mg. Patients evaluated independent rate to his/ her pain intensity like: hidly expression (3), moderate (2) or discomfort (1) and missing (0). Over the time of the control visits the patients also are evaluated for the anti-inflammatory effect of Aulin.

### RESULTS:

Surgical procedures including in this study are divided into: flap debridement - 18%, free gingival graft - 3%, apically positioned flap - 7% and resective/regenerative periodontal surgery – 5%.

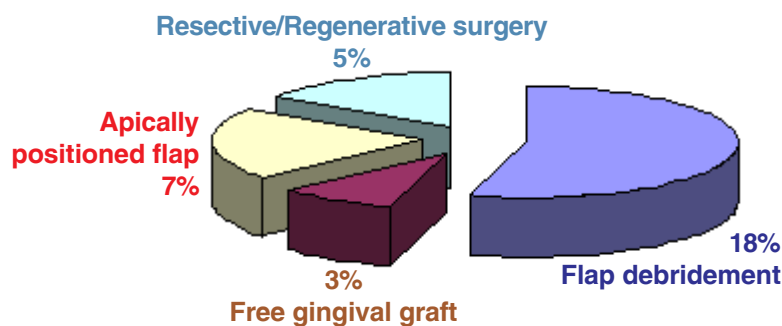


Fig. 1. Distribution of the different surgical procedures

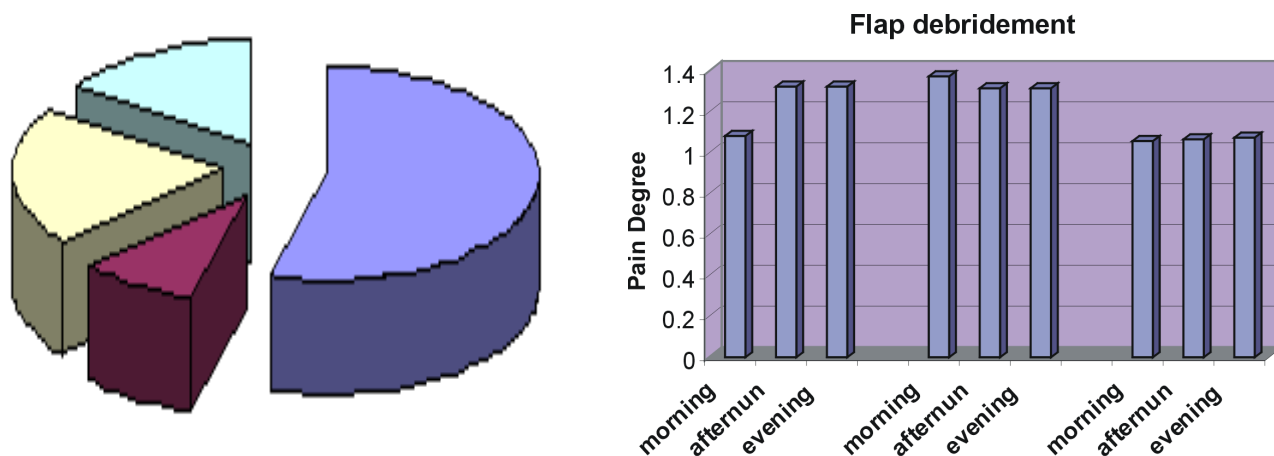


Fig. 2. Pain degree in the first 8 hours and the next three days after flap debridement (access flap surgery - AFS)

The two diagrams presents that at flap debridement the intensity of the pain during the first 8 hours do not exceed the value 3.0 according to the scale VRS-4 (value 3.0 corresponds to a moderate pain) and during the studied

3-days period it considerably decrease. On the fourth day after the intervention the registered pain value is 1.0 (which corresponds to a weak pain).

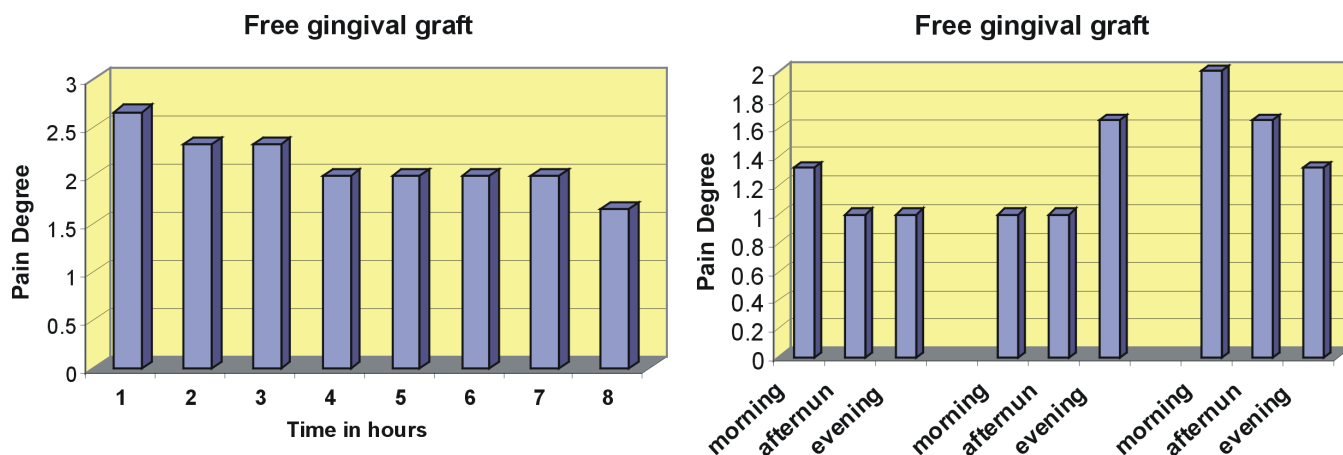
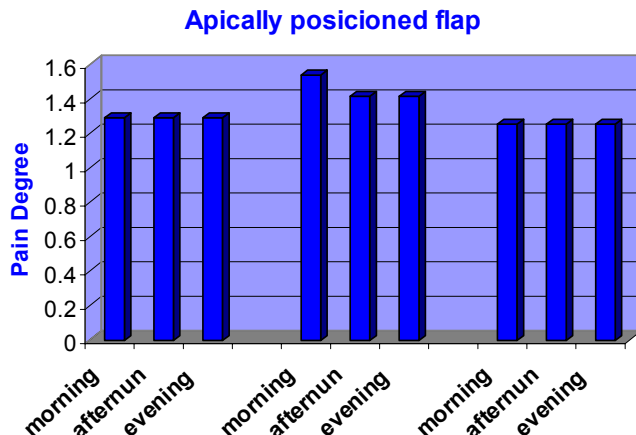
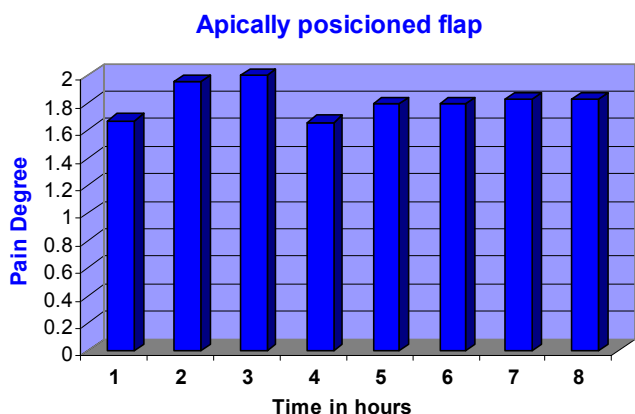


Fig. 3. The intensity of the pain in the patients with mucogingival surgery – free gingival graft

In the cases with free gingival graft during the first 8 hours the pain is most express until the fourth hour after the intervention and the values are up to 2.5 (which corresponds to a weak pain and discomfort) as well as on the first and

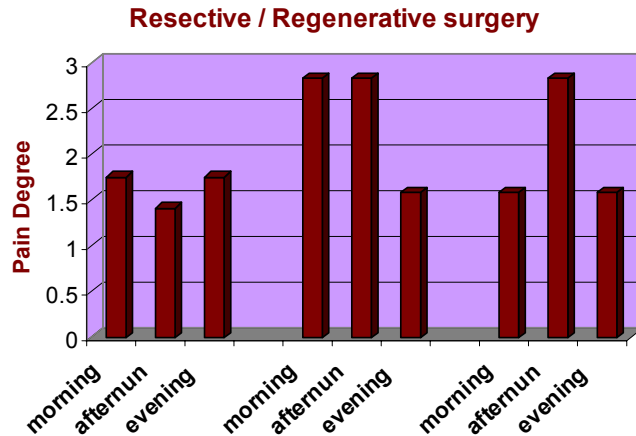
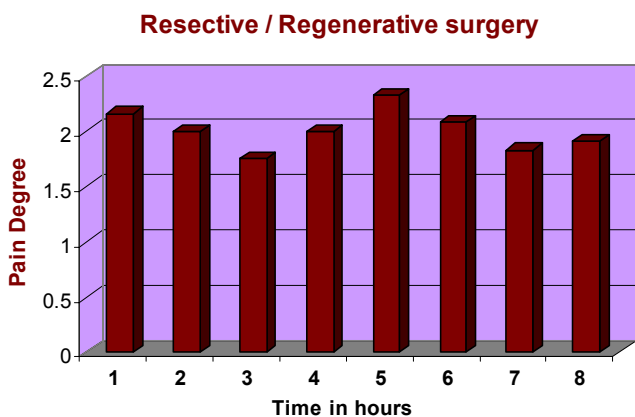
the third day after the intervention when a peak of the morning value is registered until 2, which can be explained with a persistent pain in the place where the tissue for graft is most often taken from – the palate.



**Fig. 3.** The pain in the patient with apically displaced flap surgery is of very low intensity

In patient with apically positioned flap surgery during the first 8 hours the pain is with almost unchanged degree – values between 1.6 and 2.0 (which corresponds to a weak

pain up to discomfort) and it stabilizes on the third day after the intervention – values 1.2 – 1.4.



**Fig. 4.** Values of the degree of pain in the patient with periodontal osseous surgery – resective or regenerative procedures

At resective / regenerative periodontal surgery during the first 8 hours after the intervention the pain is most pronounced until the fifth hour – value 2.5 (which corresponds to a moderate pain), it is observed a peak on the second day– the registered value is 3 and a tendency to normalization on the third day after the surgery – value up to 1.5 which corresponds to a weak pain. The fact that the surgical intervention of this group of patients is more extended probably determinates the longer period of presence of a postoperative pain.

These results depicted that different surgical procedures produced some differences in the degree of postoperative pain probably in association with the specific surgical technique. In all patients included in this study the degree of the pain in the first day and the following three days the degree of the pain did not exceed the levels of moderate pain, that means with the administration of Aulin the surgical periodontal treatment may be more tolerable from the patients. No side effects were noted in this study.

## CONCLUSION:

In this study we assess the efficacy of Aulin, a selective COX-2 inhibitor to control postoperative pain after surgical periodontal treatment. The results of this study indicated that the twice daily administration of Aulin reduce postoperative pain for the first 8 hours and also stabilize

the intensity of the pain through the next 3 days after periodontal treatment. Aulin is an effective analgesic in the early postoperative healing - there was no need for additionally analgesic drug to be taken. Additional comparative studies are necessary for better pain control in the surgical treatment of periodontal diseases.

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