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Research Article

**A PROSPECTIVE STUDY TO KNOW THE EFFECTS OF  
IBUPROFEN ON BLEEDING TIME DURING PERIODONTAL  
SURGERY**Dr Farah Asghar<sup>1</sup>, Dr Misbah Ijaz<sup>1</sup>, Dr Nayaab Quamar<sup>2</sup>, Dr Mohsin Majeed<sup>1</sup><sup>1</sup> Nishtar Institute of Dentistry, Multan, <sup>2</sup> de'Montmorency College of Dentistry, Lahore.

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**Abstract:****Objective:** The aim of this analysis was to know the ibuprofen effect on bleeding during periodontal surgery.**Study design:** A Prospective Study.**Location and duration:** The study was conducted in Nishtar Institute of Dentistry, Multan for one year duration from May 2018 to April 2019.**Methodology:** In this prospective study we selected total 15 subjects with 8 subjects were females and 7 were males aged between 18 and 55 years, presented to the periodontal clinic. On both posterior maxillary teeth sides Root planning was done. Each subject served as a test and control group. Root planning was done on the upper teeth on right side for the control group and in test group left sided root canal was done.**Results:** In the experimental group, 400 mg ibuprofen in 3 doses were administered before the operation in 1, 5, 10 hours. Total blood loss and Bleeding time were noted in both groups. There was a statistically obvious difference between total blood volume loss and bleeding time between test and control group.**Conclusion:** The results of this analysis showed that blood loss and bleeding time increased in periodontal procedure when administered ibuprofen.**Key words:** Periodontal surgery, blood loss, ibuprofen, bleeding time.**Corresponding author:**

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**INTRODUCTION:**

Nonsteroidal anti-inflammatory drugs (NSAIDs) are the most commonly widely used drugs for dental and medical problems. Drugs are well known to stop inflammatory operation by blocking prostaglandin, thromboxane and prostacyclin, arachidonic acid transformation. It is suggested for the symptomatic management of rheumatoid arthritis, osteoarthritis, ankylosing spondylitis and acute gouty arthritis. It is also beneficial analgesic for bursitis, acute tendinitis and menorrhagia in the early days and used for postoperative pain in dentistry. Many dentists are forced to stop these drugs to prevent bleeding during surgery. Stopping these medications may worsen the patient's medical condition and may cause a heart attack, stroke, etc. You may be exposed to a risk situation. Therefore, the objective of this analysis was to know the ibuprofen effect during surgery on periodontal hemorrhage.

**MATERIALS AND METHODS:**

A simple blind-controlled study was held to know the ibuprofen effect during periodontal surgery on bleeding in Nishtar Institute of Dentistry, Multan for one year duration from May 2018 to April 2019. This experimental study was planned deliberately conferring with the study group. The study consisted of fifteen subjects who attended the periodontal clinic. The study consisted 8 women and 7 males between the ages of 18-55 attended the periodontal clinic. On both posterior maxillary teeth sides root planning was done. Each participant served as a test or control group. On the right side of the upper teeth Root planning was performed in the control group and left side of the test group. The test group received 400 mg ibuprofen 1, 5, 10 hours before the operation and the control group was not

given medication. For both groups total blood loss and Bleeding time were calculated. The same type of surgery was performed and the complexity (root planning) was performed on the same jaw but at different area was performed by the same operator in the afternoon (2:00). Participation criteria were non-smoking, consistently healthy, allergy or peptic ulcer with drugs that did not affect platelet function but not pregnant. Three doses of 400 mg ibuprofen were given to the test group 1,5 and 10 hour before the study. 2% lidocaine in 1.8 ml was applied with epinephrine and 1: 80,000 ration. A muco-periosteal flap lifted and the posterior maxilla left quadrant was planned for surgery. The given time for each operation was 1hour  $\pm$  21 minutes, by Duk method, bleeding time was assessed and a puncture was performed at the finger tip. From the start of the bleeding time was noted until the stoppage of bleeding. The blood loss quantity was checked by collecting fluid during surgery using a portable aspirator. During surgery water for irrigation was recorded from the total fluid volume attained after surgery and extracted. Saliva flow is considered to be negligible because patients have their own controls and the operation is performed at the same time. The control group was named the same test group for analysis. Performing the second part of the study Maxilla right side surgery was planned one week later the 1st operation without ibuprofen. The data were tabulated, analyzed and collected using the t-test.

**RESULTS:**

Table 1 shows the 15 participants bleeding time. Prothrombin time (pt) was calculated without administration of ibuprofen and before surgery.

TABLE 1: SHOWS THE BLEEDING TIME AND AMOUNT OF BLOOD LOSS WITH AND WITHOUT IBUPROFEN ADMINISTRATION

Subject No.	Bleeding time		Amount of blood loss	
	With Ibuprofen	Without Ibuprofen	With Ibuprofen	Without Ibuprofen
1	2.5	2	18	12
2	1.5	1	14	10
3	2	1.5	23	17
4	2	1.5	17	11
5	3.5	3	13	10
6	3.5	3	12	10
7	2	2.5	11	9
8	2.5	1.5	18	15
9	3	2	17	16
10	2	1	18	11
11	2	1	15	12
12	3.5	3	17	13
13	3.5	2.5	16	12
14	2.5	2	20	14
15	2	1.5	24	18

The bleeding time mean was (1.93) of the control group without ibuprofen and for test group with ibuprofen was(2.53). The t-test results of paired samples show that the bleeding time mean with

ibuprofen was significantly statistically divergent from the non-ibuprofen bleeding time ( $t = -3.015$ ,  $p = .010$ ). For 15 participants, blood volume loss was given in Table 1.

TABLE 2: SHOWS THE RESULTS OF PAIRED SAMPLE TEST FOR BOTH BLEEDING TIME AND AMOUNT OF BLOOD LOSS WITH AND WITHOUT IBUPROFEN ADMINISTRATION

Paired Samples Test

	Paired Differences					t	df	Sig. (2-teilled)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
1 Pair bleeding time with and without Ibuprofen	-6000	.78376	.20237	-1.0340	-1660	-2.965	14	.010
2 Pair blood volume loss with & without Ibuprofen	-4.2000	1.85934	.48008	-5.2297	-3.1703	-8.749	14	.000

Postoperative blood loss was calculated without ibuprofen administration. The blood loss for the control group in mean was (12.7 ml) without ibuprofen and the test group with ibuprofen was (16.9ml). With ibuprofen paired samples' t test results

show that blood loss mean is significantly statistically divergent from non-ibuprofen blood loss ( $t = -7.989$ ,  $p = .000$ ).

During oral surgery, the patient was requested, when

ibuprofen was taken all patients received less pain.

### DISCUSSION:

Painful disease of the locomotor system is one of the big disease groups which needs medical management. The most commonly used NSIDs is Ibuprofen fastly absorbed from the stomach and of 1 to 2 hours after oral administration plasma level reaches maximum and has 1.7 to 2.6 hours half-life. It is mainly discarded by the nephrons; 200-600 mg daily is the single recommended dose doses not exceeding 2,400 mg. The systemic therapy side effects with ibuprofen are usually dependent on dose and closely linked to specific mechanisms of action by stopping the prostaglandins synthesis that act as a GIT protective factor. The most common side effect is GTT toxicity. Negative reactions such as vomiting, abdominal pain, dyspepsia and nausea. During surgery bleeding affected by many factors, such as sex, hormones, the duration of surgery, the anatomical location of the surgery and the patients general health. In this analysis, since each participant was treated as a test and a controlled case, many factors were eliminated. At the same time (same time) and in the same location (maxilla) the same operator was operated, but in a different quadrant, the same amount of local anesthesia was given. During surgery the drug maximum plasma level achieved by the selected dosing regimen was 400 mg at 1, 5 and 10 hour before surgery. The results of this analysis showed that blood loss and bleeding time increased in periodontal surgery when ibuprofen was given. This rise in blood loss is relatively minimum but significant statistically. This result coincides with previous studies that ibuprofen can prolong bleeding time and blood loss but not above the normal limit. Ardekian et al performed an analysis to know the effect of aspirin on bleeding during tooth extraction and concluded that aspirin should not be stopped before oral surgery.

### CONCLUSION:

This analysis proves that during periodontal surgery there was an rise in intraoperative bleeding and increased bleeding time, but still within normal limits when ibuprofen was administered before. Patients also explained greater comfort and less pain when receiving ibuprofen.

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