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Research Article

**ANALGESIC EFFICACY OF DICLOFENAC SODIUM
VERSUS TRAMADOL HYDROCHLORIDE IN DENTO-
ALVEOLAR SURGERY**¹Dr Ifra Tufail, ²Dr Hafsa Mumtaz^{1,2}Sharif Medical and Dental College Lahore

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Abstract:

Aim: The purpose of this study was to find a safe and effective analgesic alternative to non-steroidal anti-inflammatory drugs (NSAIDs) for patients who have undergone dental alveolar surgery that cannot tolerate NSAIDs.

Place and Duration: In the Dental department of Nishter Hospital Multan for one year duration from March 2019 to March 2020.

Methods: We randomly compared the effectiveness of tramadol hydrochloride with diclofenac sodium. Sixty patients after the third molar surgery were divided into two groups. One group was given 50 mg tramadol hydrochloride three times a day, and the other group was given 50 mg diclofenac sodium three times a day for three days. Pain control was measured using a numerical scale of 0-10.

Results and conclusions: The analgesic efficacy of both drugs was the same, except on the first day tramadol worked better than diclofenac. Tramadol can be safely used for postoperative analgesia after alveolar-alveolar surgery, especially when NSAIDs are contraindicated.

Key words: wisdom teeth, painkillers, tramadol.

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INTRODUCTION:

Tramadol hydrochloride is a narcotic analgesic that works by acting centrally. Synergically combines weakly opioids and mono-aminogenerically measured anti-nociceptive mechanisms to relieve moderate to severe pain. It is of intermediate potency. Its effectiveness lies between morphine and codeine. Tramadol is preferred because of the relative deficiency of some serious side effects, such as respiratory depression, seen with other opioids with similar efficacy. It causes minimal addiction and tolerance, and has very low potential for abuse. Tramadol also has no side effects of non-steroidal anti-inflammatory drugs (NSAIDs) mediated by prostaglandins. Non-steroidal anti-inflammatory drugs are currently the first choice of painkillers after dental alveolar surgery. However, in some patients, especially those with asthma, peptic ulcer or kidney disease, it cannot be used or contraindicated. Such patients have a continuing need for a safe and strong painkiller to control postoperative pain. This study compared the analgesic efficacy of oral tramadol hydrochloride with diclofenac sodium in patients undergoing dental alveolar surgery under local anesthesia on a randomized double-blind basis. The aim of the study is to find an effective alternative to NSAIDs for patients who cannot tolerate subsequent medications because of their condition.

MATERIALS AND METHODS:

This study was performed in 60 patients who surgically removed one of the affected mandibular third molars in the oral and maxillofacial surgery department. All patients were healthy and did not have systemic disease. Patients currently taking strong painkillers or with asthma, peptic ulcer, chronic opiate abuse or NSAIDs, or other opioid contraindications are excluded from this study. The aim, methods and risk of the study were clarified,

and informed consent was obtained during the preoperative visit. All affected teeth had the same surgical difficulty (mesioangular, Pell & Gregory class 2, position B) and were removed by the surgeon under local anesthesia. Preoperative interviews, postoperative observations and postoperative data were collected by an independent observer.

Patients (n = 60) were divided into two groups. Group I (n = 30) patients received 50 mg tramadol hydrochloride capsules orally (Campex® Akhai Pharmaceuticals), and patients in Group II (n = 30) received 50 mg capsules of diclofenac sodium (Voren® Continental Chemical Co.) 30 minutes before surgery. Neither the patient nor the observer knew about the medicine. All teeth were removed using the same standard dressing incision, bone extraction, and wound closure. Then patients in group I started with 50 mg tramadol orally, and patients in group II started with 50 mg oral diclofenac sodium two hours after surgery. Both drugs were given three times a day for three days. All patients were asked to determine the level of postoperative pain on a numerical scale from 0 to 10, where there is pain 0, 1-3 mild, 4-6 moderate, 7-9 severe and 10 worst pain imaginable. Recordings were made 06, 12, 24, 48 and 72 hours after surgery. Patients were also asked to report possible side effects of the drug.

RESULTS:

32 of 60 patients are men and 28 are women. The age range was 21-48 years (mean = 34.5). The average age of both groups was almost the same (group - I = 34.6 years and group - II = 34.4 years). At the end of the study, data from one of the patients in Group I was missing and therefore were excluded from the study (Table - 1).

TABLE 1: AGE & SEX DISTRIBUTION OF PATIENTS

DRUG USED	Mean Age (Years)	GENDER		Total
		Males	Females	
Group I (Tramadol HCl)	34.6	15	15	30
Group II (Diclofenac Sodium)	34.4	17	13	29
Total	34.5	32	28	

The results of pain relief are summarized in Figure 1.

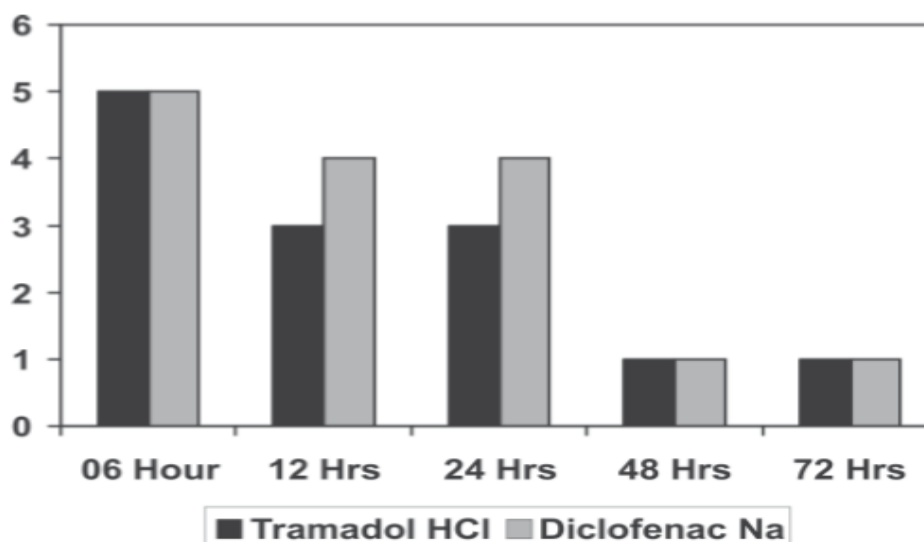


Fig. 1: Pain relief scored on numerical scale showing better pain relief by Tramadol in the first 24 hours.

As shown in Figure 1, except for day 1, when tramadol had better analgesic performance than diclofenac, the painkiller was similar in both groups. In group I, three patients and group II, two patients required an additional dose of painkillers on the first day after surgery. While two patients in group I complained of nausea, one patient in group II noticed a complaint of indigestion or discomfort.

DISCUSSION:

Tramadol was developed in the early 1960s by a German pharmaceutical company. Since then, it has been widely used as an analgesic to relieve mild to moderate pain. It is structurally related to morphine. It is an uncontrolled drug and its worldwide availability provides the clinician with a useful analgesic for short and long-term use in hospital and community. Tramadol has low potential for abuse and mental addiction. Tramadol has been shown to be an effective painkiller that is well tolerated in adults and children in various studies. Has a good safety profile with the effects of respiratory depression, tolerance and constipation. After dental alveolar surgery, patients experience moderate to severe pain in which surgeons often prescribe NSAIDs. In Pakistan, the clinical experience of tramadol in dentistry is poor or undocumented. Doctors are reluctant to prescribe narcotic analgesics because of the negative profile of these drugs. As mentioned in these and other studies, tramadol may be a good alternative to NSAIDs for postoperative pain after alveolar surgery, especially when NSAID use is inappropriate or contraindicated.

The analgesic efficacy of tramadol, although not better, was equal to diclofenac sodium, and patients' satisfaction with tramadol was slightly better. Regarding the adverse event profile, the dose of tramadol used in this study is very safe and well tolerated.

Other studies have shown that a combination of narcotic and non-narcotic analgesics may give better results than tramadol. However, if NSAIDs

are contraindicated for some reason, tramadol can only provide acceptable analgesia, as shown in this study. A more important point observed in this study was that when tramadol was given as a drug before tooth extraction, it not only provided protective analgesia, but remained relatively calm and calm during the injection of local anesthesia and during tooth extraction.

CONCLUSION:

Tramadol can be safely used in postoperative analgesia after alveolar-alveolar surgery. It can be used on a 50 mg regimen three or four times a day. If deeper analgesia is required, the dose can be increased to a maximum of 400 mg daily in divided doses. Its use is particularly suitable for NSAIDs or patients with a history of peptic ulcer disease, congestive heart failure and kidney disease. It can also be used as a premedication for anxious patients.

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