

ROLE OF PARACETAMOL AND DICLOFENAC SODIUM IN THE POST-ANAL FISSURE SURGICAL PAIN

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Abstract

Background: Anal fissures are most caused by damage to the lining of the anus or anal canal, the last part of the large intestine. Most cases occur in people who have constipation when a particularly hard or large stool tears the lining of the anal canal. Postoperative pain relief especially using analgesic drugs with minimal side effects has considerable clinical importance. **Aim:** - This study was undertaken to compare the role of paracetamol and diclofenac sodium in post-anal fissure surgery pain. **Materials and Methods:** A prospective study was conducted at NCMCH, Panipat. This study included 50 patients who were admitted to IPD, and underwent anal fissure surgery at age 25-60 years. All measurements were performed using standard methods in the literature. A visual analog scale was used to assess the pain score. Side effects of drugs were noted. **Results:** The study results confirm that Paracetamol was more effective in the management of post-surgical pain. We divided 50 patients into two groups. Group 1 was treated for the management of post-surgical pain with diclofenac sodium and Group 2 with paracetamol. Our findings revealed a statistically significant improvement of 85% in Group 2 as compared to Group 1. **Conclusion:** - In conclusion, the agent PCM to be used for the management of postoperative anal fissure surgical pain is desired to relieve the pain effectively

Keywords: - Anal Fissure, Post operative Pain, Surgery, Paracetamol, Diclofenac Sodium

Introduction

Hemorrhoids, anal fissures, and perianal fistulas are the most common surgical anal disorders. These disorders almost always necessitate surgical intervention. Surgery relates to severe postoperative discomfort, which causes so much worry in some

patients that they decline the procedure. Opiates and nonsteroidal anti-inflammatory medications (NSAIDs) are frequently used to relieve pain. [1] One of the most common reasons for anal pain is fissure-in-ano. It is a distal to dentate line linear tear in the squamous epithelial lining of the anal canal.[2]. It affects both men and women and is prevalent in all age groups, particularly young individuals.[3] studies showed that 30 to 75% of postoperative patients experience moderate or severe pain [4]. Postoperative pain is an acute discomfort that begins with surgical trauma and progressively reduces as the tissue heals. Pain plays an important function in the development of a stress response generated by surgery. [5] Postoperative pain remains an important unresolved issue that causes expense and patient dissatisfaction [6,7]. Therefore, this situation calls for multi-modal pain management, choosing medication, dosing regimens, and route of administration in an individualized way to optimize efficiency and minimize adverse effects, as the Practice Guidelines for Acute Postoperative Pain of the American Society of Anesthesiologists (ASA) recommends [8]. Given postoperative pain in benign anorectal surgery (BARS) has not been solved in its entirety, some authors have used balms, creams, and ointments that contain Nifedipine [9], diltiazem [10], botulinum toxin [11], or nitroglycerin[[12] All these topical treatments help to reduce pain however they are not exempt from side effects such as headache, denervation, orthostatic hypotension, or bradycardia[13]. Both Paracetamol and diclofenac [14] have analgesic, anti-inflammatory, and antipyretic effects. These properties are suitable to treat three postoperative pain components in BARS: nociceptive pain (somatic and visceral), inflammation, and pain provoked by superinfection of the contaminated area [15]. For treating mild to moderate pain, intravenous (IV) paracetamol (acetaminophen) is regarded as the first-line non-opioid analgesic. Although the central analgesic effect of paracetamol is widely understood, the major mechanism of action, which could be suppression of prostaglandin synthesis or via an active metabolite activating cannabinoid receptors, is uncertain. [16].

Our study aimed to compare the effect of Paracetamol (PCM) and Diclofenac sodium in postoperative pain after anal surgery in a better manner or without side effects.

Materials and Methods

The study was conducted in the Department of Surgery, NCMCH, Panipat .50 post operative admitted patients aged between 25-60 years were selected for this study. The study was done after Ethical clearances. Informed consent was taken from all the patients before the conducted study.

Study design: Experimental study

Sampling method: Convenient sampling

Study population: The study recruited 50 patients who underwent Anal fissure surgery of the age group of 25-60 years. Patients of either sex were recruited in the study. Patients with severe complications were excluded from the study. Unwilling participants were excluded from the study. After recruiting, the participants were randomly assigned into two groups with 25 participants in each group.

Group 1 (n=25): Tab Paracetamol 500mg was administered

Group 2 (n=25): Tab Diclofenac sodium 50mg was administered

Data collection: All participants underwent a thorough physical examination. All measurements were performed using standard methods. A visual analog scale was used to assess pain scores.

Data analysis: The statistical software SPSS 16.0 version was used to analyze the data. The significance of the difference was tested using the student t-test. A probability value of less than 0.05 was considered significant.

Results

The present study 50 patients were randomly selected from the Surgery Department, further divided into two groups: - Group-1 and Group-2 (25 patients in each group).

Table 1: Demographic data of participants

	Group 1 (n=25)	Group 2 (n=25)	t -test	P -value
Age (years)	39± 8.09	37.4±9.29	24.09±20.12	0.519
Gender (M: F)	14:11	13:12		
Weight (kg)	60.44± 10.72	61.88± 10.07	28.17±30.71	0.627
Height (cm)	160.44± 9.78	158.52± 8.69	82.88±91.16	1.00

Table no 1 presents all the demographic data of patients. There was no significant difference in age between the two groups. The study also showed no significant difference in height and weight between the two groups.

Table 2: Baseline and post-intervention pain score of the participants Parameters

Parameters	Group 1 (n=25)	Group 2 (n=25)	t -test	P -value
Baseline pain score	5.04± 1.05	2.52± 0.88	23.77± 18.59	0.00**
Post intervention pain score	2.4± 0.64	2.6± 0.70	15.71±18.38	0.0275

Table no.2 revealed that Baseline pain scores were highly significantly different between the two groups. Post-intervention pain score was not significantly lower in Group 1 when compared with Group 2

Data was presented as mean and SD. (P value less than 0.01 was significant)**

Discussion

Pain management in the postoperative care setting is of utmost importance for patients who underwent Anal fissure surgery. Therefore, pharmacological, and interventional approaches have been developed for postoperative analgesia. Our findings, demographically age, height, and weight were not significantly affected by both drugs. Several studies revealed that Pain sensation is one of the most important sensations and non-adaptive. It helps the individual to take adequate management strategies so that pain can be reduced. There are multiple drugs available for the management of pain. But most of the pain management drugs are associated with side effects. One of the most prominent side effects is a decrease in the rate of respiration [18]. Further, they can cause toxic effects on cardiac and respiratory functions. Hence, there is a need for a drug that is effective and with minimum side effects. PCM is one such drug that has effective pain management and causes minimum side effects [19]. Our study also supported this view as the pain score was significantly lower in group 1 when compared with group 2. Earlier studies reported that PCM was reported to reduce pain more effectively [20,21]. In contrast, other studies reported that when administered with the same dose, diclofenac is rapid and effective [22-24]. Another study reported that no significant side effects were observed followed by administration of PCM.

A similar study by Manne VS, et al. S found it was concluded that tramadol due to its lesser onset of action time was superior to paracetamol in providing acute postoperative pain relief. Kate Seers et al. Finding that Single dose, oral paracetamol at doses ranging from 325–1500 mg provides more than 50% pain relief of moderate to severe postoperative pain for 4–6 hours, with few adverse effects recorded.[25-28] Bright Jebaraj et al also supported our study that postoperative intravenous paracetamol is a safe and effective component of a multimodal analgesic regimen, and it reduces postoperative opioid consumption[29] Tanudeep Kaur's study was finding that IV PCM 1000 mg and IV Tramadol 50 mg both are safe and effective in providing postoperative analgesia, with Tramadol having an edge over PCM, as far as mean pain scores and lesser need of additional analgesics is concerned but with a higher incidence of nausea, vomiting, and drowsiness.[30]

The study agrees with this view as there were no significant side effects in the patients. The present study has certainly some limitations. Firstly, the patient population was small and conducted in one center so, we cannot generalize the study. Hence, further detailed studies are essential to support the usage of PCM in the management of post-surgical pain. Postoperative analgesia is the key factor in successful recovery from any surgery. From the different parameters compared in our study, both diclofenac and paracetamol offer adequate postoperative analgesia.

Conclusion

In conclusion, to the best of our knowledge, the present study is the first to evaluate the efficacy of paracetamol for the control of pain without any side effects. Diclofenac due to its quick onset of action and fewer side effects is better than intravenous paracetamol for postoperative analgesia. Based on the present findings, we think that paracetamol can be safely and effectively used to decrease the severity of pain experienced after anal fissure surgery patients.

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