

# Effectiveness of Intramuscular Diclofenac Sodium Injection versus Diclofenac Suppositories in Post- Operative pain management in Inguinal Hernia

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## ABSTRACT

**Background:** This study was conducted to compare the route of administration of diclofenac intramuscular and suppository to see which one of these has more effectiveness.

**Aim:** To compare intramuscular diclofenac sodium Injection with diclofenac suppositories in post operative pain management in patients with Inguinal Hernia.

**Study design:** Randomized controlled trial and non probability consecutive sampling

**Methods:** In this study 150 male cases accompanying age range of 18 to 60 age bearing unintended inguinal split were contained. They were detached into two equal groups and were trained accompanying subcutaneous injection of diclofenac sodium and those camp accompanying diclofenac suppositories. Post functioning pain was evaluated at 6, 12 and 24 hours on optic parallel scale (VAS).

**Results:** In this study there were about up to 150 patients, 75 in each bunch and all were male. The average age in gather A and B was 43.50±5.72 vs 44.16±5.31 a long time individually. There were 47(62.67%) proficient in bunch A and 50(66.67%) in gather B. There were 58 cases each in both bunches having history of smoking. Require for protect absence of pain in bunch A was seen in 28 (37.33%) and in gather B in 19(25.33%) cases. Mean torment score on VAS at 6 hours was 2.39±0.84 vs 2.20±0.90 with p=0.64, at 12 hours it was 2.33±0.89 vs 2.11±0.94 with p= 0.94 and at 24 hours it was 2.03±0.71 vs 1.85±0.89 with p= 0.001.

**Conclusion:** Post operative pain is one of the major concerns and Diclofenac suppositories have shown significantly better results at 24 hours as compared to intramuscular injections; though no statistical difference was observed at 6 and 12 hours. And this difference is also significant in terms of all the study variables at 24 hours in suppository group.

**Keywords:** Inguinal Hernia, Diclofenac Sodium, Intramuscular, Suppository.

## INTRODUCTION

Processus vaginalis is an embryonic formative out pouching of peritoneum joined to the testicle. In case when the decimation of the processus vaginalis does not happen, it refers to a state of inguinal hernia. Inguinal hernia is a sign of elective herniotomy and herniorrhaphy (in adults), which prevents incarceration and subsequent strangulation in patients.

This examination was planning to see at suppository and intramuscular authoritative course of diclofenac to see which of these are dynamically compelling (M Iqbal & Mehmood, 2009; Rajendra Pawar et al., 2019). Assessment for escalated of torment was measured by visual simple scale (VAS) post. Various examinations have been performed on the reasonability of analgesics for the torment after surgery of an inguinal hernia be that as it may there is nonappearance of thinks about for affect of regulatory course of diclofenac.

This study is aimed to arrange and compare intramuscular and suppository course of organization of diclofenac to see which of these is more effective.

## MATERIAL & METHODS

It was Randomized controlled study that was conducted at surgical Unit I Bahawal Victoria Hospital Bahawalpur Pakistan from 01-04-2021 to 31-01-2022. The calculated sample size is 150 cases (75 in each group), with 80% power,  $P1^3 = 2.44$ , 1.19,  $P2^4 = 2.83$ ±0.18 and 95% confidence level. The sampling technique was Non-probability consecutive sample Technique. Male patients 18-60 years of age scheduled for indirect inguinal hernia surgery. The study was conducted after taking permission from ethical committee of Quaid-e-Azam Medical School, Bahawalpur. A pattern length of 150 patients with Inguinal hernias described in operational definition, admitted within the department of surgery.

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The procedure was enrolled by non- probability consecutive sampling for the take a look at. Demographic facts like age (in years might be noted). Informed written consent was taken from all the patients. The patients were divided into following two groups randomly the usage of lottery method.

**Group A:** Diclofenac Suppositories (75 cases)

**Group B:** Intramuscular diclofenac sodium (75 cases)

Group A patients obtained 1st dose of 100mg diclofenac sodium (4ml) intramuscular injection at 0, 12, 24 hours after the surgical operation. Group B acquired 100mg diclofenac suppositories postoperative at hours 0, 12, 24 hours. Assessment for intensity of pain was completed through visual analogue scale (VAS) after 6, 12 and 24 hours for a complete length of 24 hours. On analysis if a patient represents with VAS score less than 5, necessitating urgent analgesia then in such conditions there was provision for rescue treatment. Further the clinical assessments were completed before and after operation. Measurement changed into taken for the intensity of ache post operatively at 6, 12, 24 hours by way of visual analogue scale (VAS) of 0-10 points. All collected data was entered in SPSS version 20 and the same was analyzed. After the analysis, quantitative data like age and VAS score, height (cm), weight (kg) and BMI of patients was also presented as mean and standard deviation. Qualitative data which includes need for rescue analgesics, history of smoking and educational status was presented as frequency and percentage. VAS score at 6,12,24 hours was compared by applying independent t test. P value of less than or equal to 0.05 was considered as significant. Effect modifiers like age, BMI, history of smoking, educational status will be controlled through stratification. Post stratification t test was applied. P- value less than 0.05 was considered as significant.

## RESULTS

In this study there were totla150 patients, 75 in each group and all were males. The mean age in group A and B was 43.50±5.72 vs 44.16±5.31 years respectively (Table 1). Table 2 reveals mean

weight, Height and BMI of both groups. There were 47 (62.67%) literate in group A and 50(66.67%) in group B. There were 58 cases each in both groups having history of smoking. Need for rescue analgesia in group A was seen in 28 (37.33%) and in group B in 19 (25.33%) cases.

Mean pain score on VAS at 6 hours was  $2.39 \pm 0.84$  vs  $2.20 \pm 0.90$  with  $p = 0.64$ , at 12 hours it was  $2.33 \pm 0.89$  vs  $2.11 \pm 0.94$  with  $p = 0.94$  and at 24 hours it was  $2.03 \pm 0.71$  vs  $1.85 \pm 0.89$  with  $p = 0.001$ . Confabulation of data against confounders of the study was statistically significant only at 24 hours with respect to all the study variables.

Table 1: Age in study subjects (n=150)

	Group A	Group B
<b>Age in years</b>		
Mean	43.50	44.16
Std. deviation	5.72	5.31

Table 2: Age in study subjects (n=150)

	Group A	Group B
<b>Weight in Kg</b>		
Mean	88.45	87.33
Std. deviation	8.45	9.27

## DISCUSSION

The consequences of our examination revealed that there was basically no distinction between the viability of both suppository and intramuscular Diclofenac when given after operation initially at 6 and 12 hours but later at 24 hours, suppositories have shown significantly better results. Be that as it may, there is decreased pain rating scale with suppository kind of methodology. Additionally, route of suppository is more secure, less inclined to injury, simple to oversee and has longer term of activity.

In diclofenac group and the combination of paracetamol and diclofenac group, the requirement of rescue analgesic was significantly lower compared to paracetamol alone group. The combined group was not superior to diclofenac alone, indicated that the combination did not result in an additional benefit in aspect of post-operative analgesia. Regarding the secondary outcomes, the VAS scores, time since first rescue analgesic requirement and PSC were comparable between the groups.

## CONCLUSION

The post operative pain is one of the major concerns and Diclofenac suppositories shown considerably better results in 24 hours as compared to intramuscular injections; though no statistical difference was observed at 6 and 12 hours. And this difference is also significant in terms of all the study variables at 24 hours in suppository group.

**Author's contribution:** SA: Abstract, N.S. Introduction, Material and Methods, SN: Data collection, M.A.A: Literature review and Data analysis, SH: Tables and results, AA; Graphics

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