

Original Research Article

# TAP Block in Abdominal Surgery: An Observational Study to Determine the Need for Diclofenac as a Post-Operative Analgesic Drug

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## Abstract:

**Background:** The aim of the study is to determine the Need for Diclofenac as a rescue Analgesic Drug after giving TAP block for postoperative analgesia.

**Result:** Mean duration for first rescue analgesic requirement was 1 hour and 9 min. Result shows that mean duration for first rescue analgesic requirement was found to be statistically significant. 28 Patients (93.3%) required rescue analgesia in first 8 hour post-operative period, 02 patient (6.4%) did not require rescue Analgesia which is statistically significant (P =0.023)

**Conclusion:** TAP block provides longer duration of postoperative analgesia, reduces postoperative Diclofenac sodium requirement when compared to port site infiltration of local anaesthetic. TAP block is devoid of complications. It provides reliable and effective postoperative analgesia in patients.

**Keywords:** TAP Block, lower Abdominal Surgery, Diclofenac & Analgesic.

**Study Designed:** Observational Study.

## 1. Introduction

Dr Rafi in 2001 described TAP block as an advanced regional block, in which local anesthetics can be delivered into the TAP in a single shot in the triangle of Petit. In 2004, McDonnell et al, provided evidence for the anatomical basis of TAP block[1]. He demonstrated that sensory loss in the abdominal area after local anesthetic injection in the transversus abdominis plane. As this regional technique is a recently developed and promising modality for providing efficient postoperative analgesia, many clinical trials are under progress to find its use in various types of surgeries[2].

The Transversus abdominis plane is situated in between the internal oblique and transversus abdominis muscle[3]. It contains the nerve fibres supplying anterior abdominal wall and can

be blocked by local anaesthetics. A study demonstrated the efficacy of TAP block in reducing morphine consumption after abdominal surgeries[4].

Another meta-analysis proved that, in addition to effective pain relief, the requirement of opioids and their side effects were reduced by TAP block. TAP block done under USG guidance have the additional advantage of monitoring the needle course and the spread of local anaesthetic solution which helps in improving safety and efficacy of the block[5].

## **2. Material & Method**

Present study was conducted at Sukhsagar medical College and Hospital For 6 months between December 2022 to May 2023 after approval by institutional ethics committee .

In preoperative waiting room detailed history and physical examination was done. On arrival of patient in the operating room. Standard anaesthesia monitors like Pulse Oximetry, Noninvasive BP, and ECG were connected and baseline values of HR, BP, SPO2 were recorded. Peripheral I.V access was secured.

After identifying the lumbar triangle of Petit (a space bounded by the iliac crest, latissimus dorsi muscle, and external oblique muscle) was used as a landmark, and a sensation of two “ pops ” indicates the correct needle position. The first pop occurs after penetration of the fascia of the external oblique muscle, and the second occurs after penetration of the internal oblique muscle. a 27-gauge needle is advanced and placed between the internal oblique abdominal and the transversus abdominis muscle. After aspiration, 0.1mL/kg of local anesthetic solution is injected.

After observing closely for a signs of local anaesthetic toxicity and post-op complications, patients were shifted to the post-operative ward, patients who requested rescue analgesic were given diclofenac sodium aqueous 75 mg intravenous.[6] Presence and severity of pain, time for first rescue analgesia demand, and total dose of Diclofenac as rescue analgesia to the patient was noted.

### **INCLUSION CRITERIA:**

1. ASA grade I and II patients
2. Lower abdominal surgeries
3. age between 20 to 60 years

### **EXCLUSION CRITERIA:**

1. ASA grade III & IV patient
2. Patient refusal
3. Local anaesthetic allergy
4. Skin condition precluding the block

### 3. Results

**Table 1: Age distribution**

Age	No.	Percentage	P-Value
Up to 20 year	02	6.7%	0.256
21- 30 years	06	20%	
31 - 40 years	07	23.3%	
41 - 40 years	06	20%	
51 - 40 years	05	16.7%	
Above 60 years	04	13.3%	

The table shows the comparison of age distribution, result shows that statistically no significant difference was found with regards to age distribution.

**Table 2: Gender distribution**

Age	No.	Percentage	P-Value
Male	20	66.7%	0.390
Female	10	33.3%	
Total	30	100%	

Majority of the participants in males, 66.7% were males and 33.3% were females. Results show that statistically no significant difference was found in gender distribution.

**Table 3: 1st rescue Analgesic time**

Mean	S.D.	t-Value	P-Value
69	66	26.253	0.0005

Mean duration for first rescue analgesic requirement was 1 hour and 9 min. Result shows that mean duration for first rescue analgesic requirement was found to be statistically significant

**Table 4: Rescue Analgesic**

Yes/No	No.	Percentage	P-Value
Yes	28	93.3	0.023
No	02	6.4	

28 Patients (93.3%) required rescue analgesia in first 8 hour post-operative period, 02 patient (6.4%) did not require rescue Analgesia which is statistically significant (P =0.023)

### 4. Discussion

Result of our study showed that, 22 patients (73.4%) in group S, and 29 Patients (96.7%) in group P required rescue analgesia at 8 hours postoperatively. 8 patients (26.6%) in group S did not require rescue analgesia, whereas in group P only 1 patient (3.3%) did not require rescue analgesia and the difference was found to be statistically significant (P =0.023). Thus,

patients requiring rescue analgesia was lower in TAP block group when compared to port site infiltration group and the difference was found to be statistically significant[7].

BEENA et al in 2013 demonstrated that rescue analgesic Diclofenac requirement was lower in ultrasound guided transversus abdominis plane block group ( 103.8 ± 32 mg) when compared to placebo group (235.8±47.5 mg) at 24 hours post operatively which correlates with the findings of our study[8].

Similar results were found in the study conducted by S.TOLCHARD ET AL, results of which showed that TAP BLOCK provided nearly 50% reduction in the usage of rescue analgesia in the first 8 hours postoperatively. Our results also concurred with the study conducted by SUSEELA ET AL which showed that patient who received subcostal TAP block had lower rescue analgesic requirement (48.69 +36.14mg) when compared to port site infiltration group (141.8+ 60.01 mg). There were no reference studies which compared hemodynamic variables like HR and BP. In our study, Group P showed a statistically significant increase in heart rate and blood pressure at first hour post operatively when compared to Group S. The comparison of mean arterial pressure between two groups showed no significant difference (P- value >0.05) except during the 1st hour postoperatively (p- value=0.007).

Complications like peritoneal and visceral puncture related to subcostal tap block were not encountered in our study. Farooq M CAREY M. in 2008 reported liver trauma with blunt regional anaesthesia needle while performing transverse abdominis plane block. Familiarity with anatomy, safe monitoring and injection technique, knowledge of local anaesthetic pharmacology and toxicity would prevent the possibility of complications[9]. The use of ultrasound to confirm the needle position is a promising approach to further reduce the risk of complications.

#### **4. Conclusion**

TAP block provides longer duration of postoperative analgesia, reduces postoperative opioid consumption when compared to port site infiltration of local anaesthetic. TAP block is devoid of complications. It provides reliable and effective postoperative analgesia in patients.

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