

**ORIGINAL RESEARCH**

# A Comparative Analysis of Postoperative Analgesia between Fascia Iliaca Compartment Block and Anterior Quadratus Lumborum Block in Proximal Femur Fracture: An Institutional Based Study

Ankur Kumar<sup>1</sup>, Vineet Tyagi<sup>2</sup>, Gaurav<sup>3</sup>, Bilal Ahmad<sup>4</sup>

<sup>1,2,4</sup>Assistant Professor, Department of Anaesthesiology, Muzaffarnagar Medical College & Hospital, Muzaffarnagar, Uttar Pradesh, India.

<sup>3</sup>Assistant Professor, Department of Anaesthesiology, Autonomous State Medical College, Shahjahanpur, Uttar Pradesh, India.

**Corresponding Author:**

Dr. Bilal Ahmad,

Assistant Professor, Department of Anaesthesiology, Muzaffarnagar Medical College & Hospital, Muzaffarnagar, Uttar Pradesh, India.

**Email:** [bilaldifferent@gmail.com](mailto:bilaldifferent@gmail.com)

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**ABSTRACT**

**Background:** To compare postoperative analgesia of fascia iliaca compartment block and anterior quadratus lumborum block in proximal femur fracture

**Materials & Methods:** A total of 80 patients were enrolled and were divided into two study groups with 40 patients in each group as follows: Group 1: Patients undergoing Fascia Iliaca Compartment Block, and Group 2: Patients undergoing Anterior Quadratus Lumborum Block. The visual analogue scale (VAS) was used to measure postoperative discomfort. All the results were recorded in Microsoft excel sheet followed by statistical analysis.

**Results:** Mean time to first analgesic requirement among patients of group 1 and group 2 was significantly higher among patients of group 2 in comparison to patients of group 1. Total rescue analgesic requirement was significantly higher among patients of group 1 in comparison to patients of group 2. Postoperative pain perception was substantially more remarkable in the group 1 than in the group 2 commencing at minute 30.

**Conclusion:** In comparison to patients who got fascia iliaca compartment block, those who underwent postoperative anterior quadratus lumborum block for proximal femur fractures showed delayed first rescue analgesia.

**Key words:** Fascia Iliaca Compartment Block, Anterior Quadratus Lumborum Block.

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**INTRODUCTION**

Proximal femoral Fractures account for a large proportion of hospitalization among trauma cases. An overwhelming majority of these patients (>90%) are aged above 50 years. The incidence of these fractures is 2–3 times more in females as compared to male population. They are classified on basis of anatomical location of fracture into: neck of femur fracture, inter trochanteric fracture and subtrochanteric fracture. Each of these fracture types require special methods of

treatment and have their own set of complications and controversies regarding the optimal method of management.<sup>1-3</sup>

Above the age of 50 years old, there is a 2 to 3 times increase in incidence, preferentially affecting the female gender. When looking for seasonal variation, higher incidence in the winter months have been reported, although no distribution among the type of proximal femur fractures have been described.<sup>4, 5</sup> Hence; the present study was conducted for comparing

postoperative analgesia of fascia iliaca compartment block and anterior quadratus lumborum block in proximal femur fracture.

## MATERIALS & METHODS

The present research aimed of comparing postoperative analgesia of fascia iliaca compartment block and anterior quadratus lumborum block in proximal femur fracture was conducted in Department of Anesthesia, Muzaffarnagar Medical College & Hospital, Muzaffarnagar, Uttar Pradesh, India. A total of 80 patients were enrolled and were divided into two study groups with 40 patients in each group as follows:

Group 1: Patients undergoing fascia iliaca compartment block, and

Group 2: Patients undergoing anterior quadratus lumborum block

Following spinal anesthesia, patients in both groups were placed in the lateral decubitus position. Following the procedure, patients were taken to the postoperative intermediate care unit, where they were closely watched and studied for any aftereffects. The visual analogue scale (VAS) was used to measure postoperative discomfort. All the results were recorded in Microsoft excel sheet followed by statistical analysis. Student t test and chi-square test were used for evaluation of level of significance.

## RESULTS

Among patients of group 1 and group 2, mean age of the subjects was 68.4 years and 66.9 years respectively. More than 50 percent of the patients of both the study groups were males. More than 70 percent of the patients of both the study group were of ASA grade II. Non-significant results were obtained while comparing the type of operation among patients of both the study groups. Mean time to first analgesic requirement among patients of group 1 and group 2 was significantly higher among patients of group 2 in comparison to patients of group 1. Total rescue analgesic requirement was significantly higher among patients of group 1 in comparison to patients of group 2. Postoperative pain perception was substantially more remarkable in the group 1 than in the group 2 commencing at minute 30.

**Table 1: Type of operation**

Type of operation	Group 1	Group 2	p-value
Intertrochanteric	22	20	0.124
Neck	12	13	
Subtrochanteric	6	7	

**Table 2: Comparison of analgesic variables**

Variables	Group 1	Group 2	p-value
Total rescue	15.3	8.7	0.01

analgesia (mg)			(Significant)
Mean time to first rescue analgesia (Hours)	9.3	13.1	0.00 (Significant)

## DISCUSSION

Pain management is an integral part of providing care in the emergency setting. Lower extremity pain from hip fractures, burns, and other trauma is a common presenting complaint. Opioid medications can be associated with respiratory depression, hypotension, mental status changes, and vomiting. NSAIDs can increase bleeding risk and exacerbate underlying gastrointestinal (GI) problems. Acetaminophen alone is often not sufficient for severe pain. Hip fractures, in particular, can cause considerable pain, and often occur in elderly adults with multiple comorbidities which make analgesia challenging. A fascia iliaca compartment block can provide superior analgesia with minimal side effects. It can be deployed in a relatively quick fashion after a small amount of training and can be executed with high success rates under ultrasound guidance.<sup>6-10</sup> Hence; the present study was conducted for comparing Postoperative Analgesia of Fascia Iliaca Compartment Block and Anterior Quadratus Lumborum Block in Proximal Femur Fracture.

Among patients of group 1 and group 2, mean age of the subjects was 68.4 years and 66.9 years respectively. More than 50 percent of the patients of both the study groups were males. More than 70 percent of the patients of both the study group were of ASA grade II. Non-significant results were obtained while comparing the type of operation among patients of both the study groups. Mean time to first analgesic requirement among patients of group 1 and group 2 was significantly higher among patients of group 2 in comparison to patients of group 1. The analgesic efficacy of ultrasound-guided transmuscular quadratus lumborum block combined with fascia iliaca compartment block for elderly patients undergoing total hip arthroplasty was investigated in a previous study conducted by Xia Q et al. The patients were randomly assigned to receive only transmuscular quadratus lumborum block (group Q) or transmuscular quadratus lumborum block combined with fascia iliaca compartment block (group QF) with ultrasound guidance. Fifty patients were included, and their data were analyzed. The cumulative sufentanil consumption in group QF was significantly lower during the first 24 h after surgery than that in group Q, and the cumulative sufentanil consumption in group QF was reduced at 6-12 and 12-18 h after surgery. There was no statistically significant difference in complications postoperatively between the two groups. Their study provided a multimodal, opioid-sparing analgesic regimen for elderly patients undergoing total hip arthroplasty.<sup>11</sup>

Total rescue analgesic requirement was significantly higher among patients of group 1 in comparison to patients of group 2. Postoperative pain perception was substantially more remarkable in the group 1 than in the group 2 commencing at minute 30. The duration of analgesia provided by two different QLB approaches; the posterior QLB (QLB-2) and transmuscular QLB (QLB-3) in patients undergoing surgical repair of unilateral inguinal hernia was compared in a previous study conducted by Ahmed A et al. At the end of the surgical procedure and before recovery from general anesthesia, Patients were randomly assigned into two groups to receive either posterior QLB (Group QLB-2) or transmuscular QLB (Group QLB-3) using 20 ml 0.25% bupivacaine. Ultrasound guided postsurgical transmuscular approach of QLB (QLB-3) using 20 ml 0.25% bupivacaine produces more postoperative analgesic effect and less postoperative opioid consumption when compared to posterior QLB approach (QLB-2) in patients underwent unilateral inguinal hernia repair under general anesthesia.<sup>12</sup>

## CONCLUSION

In comparison to patients who got Fascia Iliaca Compartment Block, those who underwent postoperative anterior Anterior Quadratus Lumborum Block for proximal femur fractures showed delayed first rescue analgesia.

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