



**ORIGINAL RESEARCH PAPER**

**Anaesthesiology**

**COMPARATIVE STUDY OF ULTRASOUND GUIDED BILATERAL SUBCOSTAL TRANSVERSUS ABDOMINIS PLANE BLOCK WITH BUPIVACAINE PLUS CLONIDINE AND BUPIVACAINE PLUS DEXMEDETOMIDINE IN LAPAROSCOPIC CHOLECYSTECTOMY UNDER GENERAL ANAESTHESIA**

**KEY WORDS:**

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**ABSTRACT**

This comparative study aims to compare the efficacy of bupivacaine plus clonidine and bupivacaine with dexmedetomidine by using USG guided subcostal TAP block in patients undergoing laparoscopic cholecystectomy.

**INTRODUCTION**

Laparoscopic cholecystectomy is usually associated with early recovery, no/less post operative pain, low cost-high benefit and better patient compliance as compared to open cholecystectomy and thus, it has reduced the hospital stay and now considered as a day care surgery. 1,2,3 it is minimally invasive but still few patients complaint moderate to severe pain in the early post operative phase<sup>4</sup>.

We can give patients subcostal transversus abdominis plane(TAP) block which can provide sensory block of the T7 to T12 nerves, classical posterior approach provide T10-L1 sensory block. The accuracy and quality of the block can be increased with the use of USG<sup>5</sup>.

Post-operative pain is menace and leads to adverse events such as prolonged immobilization, thromboembolism and pulmonary complications. Inadequate post operative analgesia will lead to patient's discomfort, extended hospital stays. Pain after laparoscopic cholecystectomy arises from trocar insertion sites, abdominal stretch due to pneumoperitoneum and hepatic bed visceral pain due to cholecystectomy<sup>6</sup>. Pain after laparoscopic cholecystectomy arises from trocar insertion sites, pneumoperitoneum induced abdominal stretch, and hepatic bed disturbances due to cholecystectomy<sup>6</sup>. Multimodal analgesia and various other modalities have been used to provide analgesia which includes opioids, non-steroidal anti-inflammatory drugs, thoracic epidural<sup>7</sup>.

**AIMS AND OBJECTIVES**

To compare the efficacy of bupivacaine plus clonidine and bupivacaine with dexmedetomidine by using USG guided subcostal TAP block in lap cholecystectomy.

**METHODOLOGY**

Hundred patients aged 15-55 years of ASA Physical status I and II were scheduled for an elective laparoscopic Cholecystectomy in a prospective, randomized, controlled clinical study. Group C received 18 mL of 0.25% bupivacaine with 0.25mcg/kg clonidine on each side and D group received 18ml 0.25% bupivacaine with 2ml of 0.25mcg/kg of dexmedetomidine on each side. Parameters such as duration of analgesia, quality of analgesia using visual analogue scale (VAS), time of rescue analgesia in 24-hour period were compared.

**Study Duration:** Two years (September 2020 to September 2022)

**Inclusion criteria:** Aged 18- 60 years, Undergoing elective Laparoscopic Cholecystectomy, American Society of

Anaesthesiologists (ASA) physical status I & II patients of either gender

**Exclusion criteria:** Patient refusal, ASA grade III & IV, Allergy to local anaesthetics, Chronic pain syndromes, Prolonged opioid medication, Coagulopathy

**OBSERVATIONS**

The mean age in group C patients was 34.78 years, weight 64.48kg, height 159.12 cm and BMI 25.56 kg/m<sup>2</sup> where as in group D age 36.26 years, weight 64.62, height 159.82cm and BMI 25.43 kg/m<sup>2</sup>. Sex distribution in group C female 45 and males 05, group D females 49 and males 01. Duration of surgery in group C 66.50 minutes and in Group D 67.50 minutes. Duration of analgesia in group C 8.56 ± 1.47 hours and group D 10.74± 1.82 hours. Time for rescue analgesia in group C 8.54±1.59 hours and in group D 10.72±1.23 hours. Visual analogue scale in group C was 8.56±1.47 hours and Group D 10.74±1.84. a significant difference was observed(P<0.01).

**Discussion**

We conducted a randomized, prospective study to compare the postoperative analgesic efficacy of subcostal TAP block with bupivacaine & clonidine versus bupivacaine with dexmedetomidine administered after induction in patients undergoing laparoscopic cholecystectomy under general anesthesia.

For breakthrough pain, we selected paracetamol intravenous infusion for rescue analgesia. Inj paracetamol 1gm intravenous infusion was given as first line rescue analgesia & injection tramadol 1 mg/kg intravenous or diclofenac 1 mg/kg intravenous infusion was given as the second line analgesia. Bilateral Subcostal TAP block has been demonstrated to provide excellent analgesia to the skin and musculature of the anterior abdominal wall in patients undergoing Laparoscopic Cholecystectomy.

Patients in subcostal TAP block with D Group had showed better pain score when compared to the patients with C group. The important outcome of our study is that the addition of dexmedetomidine to bupivacaine in subcostal TAP block provides prolonged postoperative analgesia and better pain control than bupivacaine with clonidine, without any significant complications. The duration of post operative analgesia was prolonged; VAS lower; and the need for rescue analgesia was less in both groups, better control with group D than group C was noted.

**CONCLUSION**

Ultrasound guided bilateral subcostal TAP with addition of

dexmedetomidine (0.50mcg/kg in total) to bupivacaine (0.25%) taken as group D provides better haemodynamic control and better post operative analgesia than bupivacaine (0.25%) plus clonidine (0.50mcg/kg in total).

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