

Original Article**Ultrasound guided truncal blocks for post operative analgesia – A study of 100 cases for the first time in Bangladesh**Khanum NA¹, Muhit MSB², Ahmed NC³, Haque LD⁴, Ibrahim KE⁵, Amin NF⁶¹Sr Consultant, ²Asst Prof, ³MO, ⁴Consultant, ⁵HOD, ⁶Dept of Anaesthesia, analgesia and ICU, Bangladesh Medical College, Dhanmondi, Dhaka**Corresponding Author:** E-mail**Abstract**

Ultrasound guided (USG) nerve block techniques have been used for post operative analgesia for truncal operations to limit the perioperative use of NSAID and opioids. USG visualization offers safe blocks by optimal needle positioning, direct visualization of peripheral nerves and local anesthetic distribution. In Bangladesh, first ultrasound guided nerve block studies were started in the Dept. of Anesthesia, Analgesia and ICU of Bangladesh Medical College hospital. This Study has been carried out in the operation theatre and post operative room. Ultrasound guided Rectus sheath block, Subcostal TAP block, Classical TAP block, Ilio inguinal and Ilio hypogastric nerve block provide post operative analgesia of the abdominal wall. PEC 1, PEC 2 and Serratus Anterior plain block provide post operative analgesia for anterior chest wall. This study was done with 100 patients coming for abdominal surgeries and anterior chest wall surgeries. These blocks were given after induction and before giving incision in case of general anesthesia or after operation in case of spinal anesthesia. This study is an audit of ultrasound guided nerve blocks in terms of analgesia score, patient satisfaction, outcome of anesthesia and complications.

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Introduction:

Many multimodal analgesia techniques have been applied to provide analgesia for truncal operations aiming at limiting the perioperative use of NSAID and opioids thus limiting side effects. Ultrasound guided nerve block is one of the recent development in pain interventions. Ultrasound visualization of anatomical structures is the only method offering safe blocks of superior quality by optimal needle positioning. It allows direct visualization of peripheral nerves, the block needle and local anesthetic distribution. In Bangladesh, the first ultrasound guided nerve block study was started in the Dept. of Anesthesia, Analgesia and ICU of Bangladesh Medical College hospital. It was carried out in the operation theatre as well as in the post operative room of this department.

Aims and objectives:

Aims of ultrasound guided truncal blocks are to reduce postoperative consumption of NSAID and opioids and also to reduce nausea, vomiting, pruritus and rates of complications. It decrease stress reflex in case of general anaesthesia.

Materials:

This study has been done with 100 patients coming for abdominal surgeries and chest wall surgery (such as

Radical mastectomy). These blocks were given after induction and before giving incision in case of general anesthesia or after operation in case of spinal anesthesia.

Equipment required were: Ultrasound machine (Sonosite Micromax) with a linear transducer (6-12 MHz) and a curvilinear transducer (5-2 MHz), gel, two 20ml and one 3ml syringe, Sterile probe cover, sterile gloves, A 50-100mm 21 gauge needle.

Method:

After obtaining ethical committee approval and written informed patient consent, 100 patients were randomly enrolled for the study. Pec 1, Pec 2, and serratus anterior plain block for mastectomy⁷, Subcostal transversus abdominis plane (TAP) block for upper abdomen operation^{1,2}, Classical TAP block for lower abdomen operation^{1,2}, bilateral rectus sheath block (RBS) for upper midline incision³, Ilio-inguinal and iliohypogastric (II and IH) block for hernia, appendectomy operation(5,6) were performed. The blocks were performed with 0.25% bupivacaine where <30ml LA is sufficient and 0.25% bupivacaine and 0.1% lignocaine with adrenaline in 50/50 ratio where more than 20ml local anesthetic was required. Visual analogue score for pain, opioids (tramadol and pethedine) and NSAID consumption, patient satisfaction, rescue analgesic and any complication were recorded by blinded anesthesiologist.

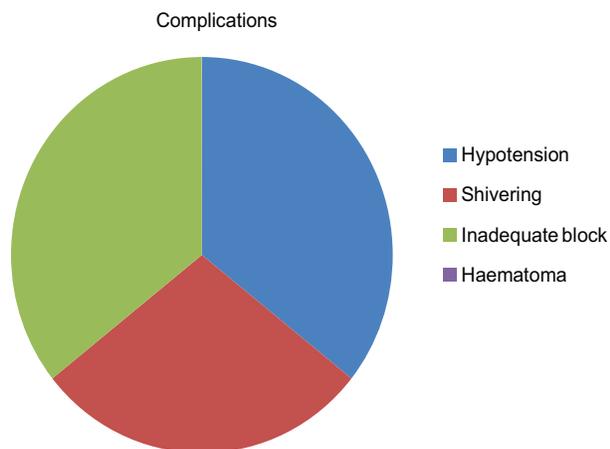
Result

Types of block	Total # of patient	Average VAS of Pain	Average Patient satisfaction***	Rescue analgesic - # of pt	Any complication (%)
RSB	60	1.5	2.6	0	Hypotension -6.7% Shivering - 3.3
Classical TAP	20	1.0	1.0	3	Inadequate block -15%
SubcostalTAP	10	0.7	2.4	0	Shivering -10
II & IH	7	1.7	2.6	0	Hypotension- 14.3 Shivering -14.3
PECs	3	2.0	1.7	2	Inadequate block-60

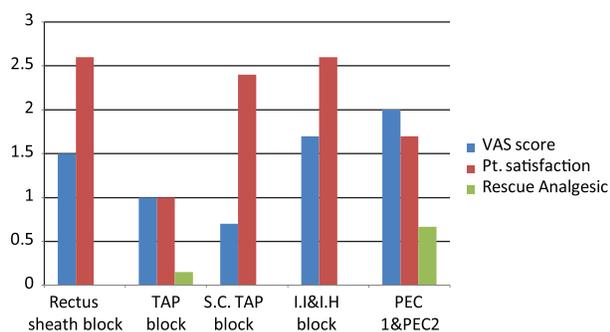
***Patient Satisfaction (1=low, 2=Medium, 3=High)

Results:

Ultrasound guided truncal blocks can reduce post operative pain scores and opioid and NSAID consumption in patients undergoing general and spinal anesthesia. Patient satisfaction is high. Ultrasound guidance increases the possibility of accurate deposition of local anesthetic around the nerves in the appropriate plain.



Graphical presentation of complications - total



Graphical presentation of data

Discussion:

Ultrasound guided truncal blocks are easy techniques to learn. Good analgesia was provided to patients undergoing truncal operations to reduce related side effects. Truncal blocks improve patient comfort. Adequate pain relief after abdominal and thoracic surgeries allows the patient to continue optimum respiratory function, which is not possible with heavy doses of opioids or inadequate pain relief. More studies can be conducted in the future to establish the usefulness of ultrasound guided blocks in the management of postoperative pain, not only limited to trunk but also in case of limbs and head-neck surgeries.

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