

Abstract # 17

An Audit of Ultrasound Guided Brachial Plexus Block for Upper Limb Surgery

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Introduction: The key requirement for a successful regional block is to ensure optimal distribution of regional anaesthetic around the nerves, which is effectively achieved under sonographic visualization. Understanding anatomical sonography has helped ultrasound technology in conducting regional blocks, providing the advantage of performing the blocks under direct visualization. Studies have shown that ultrasound guided blocks offer improved quality and duration of block. Injury to adjacent structures, inadvertent intravascular injections of the local anaesthetic and painful contractions upon nerve stimulation are avoided.¹

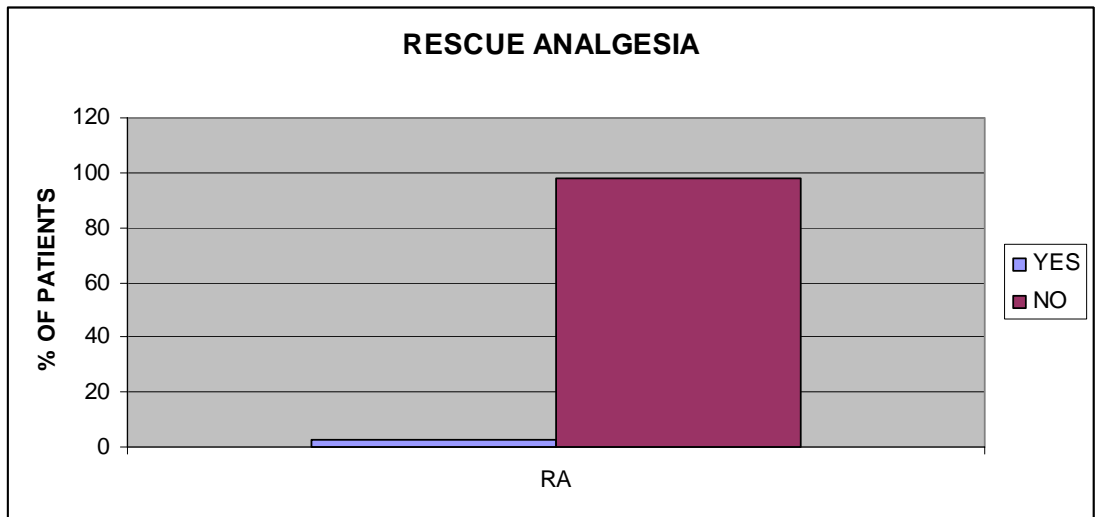
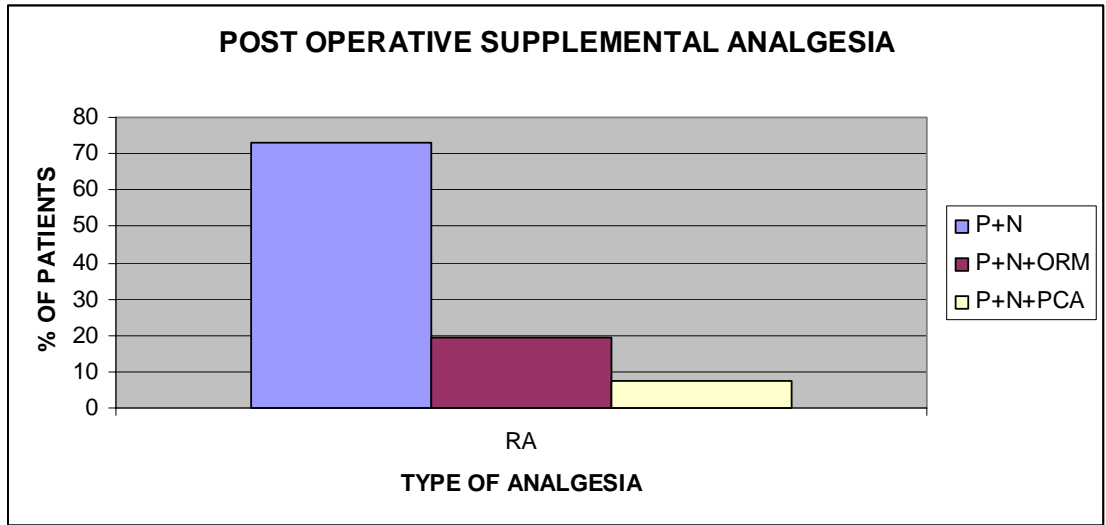
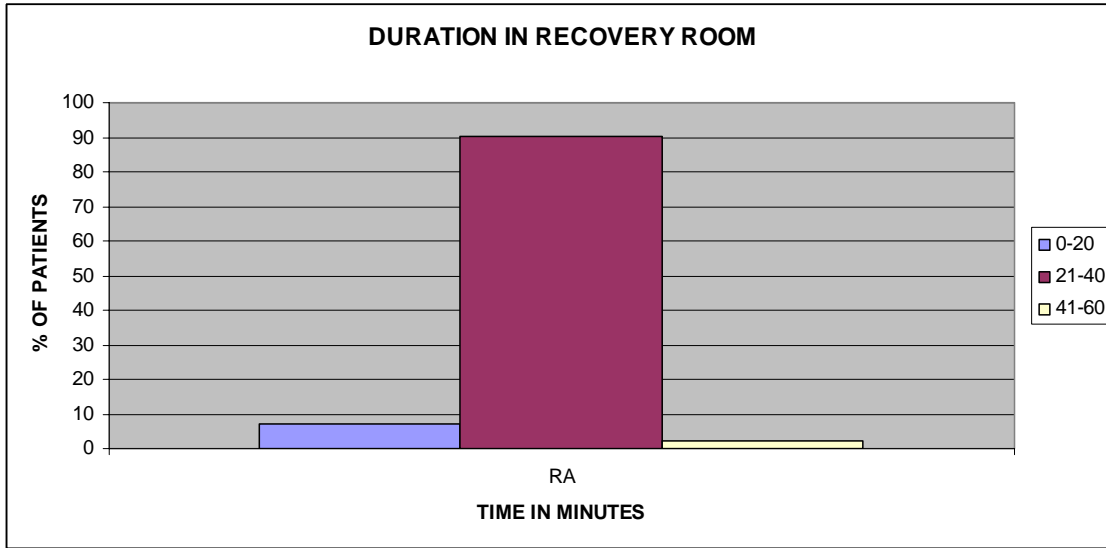
Aims and Methods: We decided to audit for the presence of a reliable and successful block, and to find out whether it would lead to improved postoperative conditions with respect to: a) duration in recovery room, b) analgesia, and c) Post operative nausea and vomiting (PONV).

The standards for the audit were decided as:

- 1) > 90 % blocks to be successful
- 2) > 90% of patients have successful analgesia with blocks.

Data of 41 patients who underwent upper limb surgery under ultrasound guided brachial plexus blocks was collected. All the blocks were performed under Sonosite ultrasound machine guidance with special sheathed needle and either bupivacaine or ropivacaine. Patient's age, sex, BMI, duration in recovery room, type of pain relief measures, antiemetic treatment measures were noted.

Results:



Discussion: The presence of a reliable and successful block reduced PONV, postoperative requirements of opioids and PONV, and shortened recovery stay. The average duration of block was 14±2 hours. > 90% of patients with the Ultrasound guided regional blocks had successful analgesia. 97% of patients did not require rescue analgesia and consequently spent less time in recovery room (30mins). >70% of patients required only paracetamol and NSAIDS for pain relief. Patients required significantly less morphine in 24 hours and 78% of patients did not require antiemetic treatment. None of the patients suffered from any of the complications of regional blocks.

Conclusion: We conclude that the use of Ultrasound guidance for regional blocks improves the quality of the blocks, avoids complications and thus significantly improves outcomes. It is therefore justified to expect anesthetists to acquire the skills to use ultrasound guidance and we recommend that training be given to acquire the skills in clinical practice. We aim to complete the audit loop by reauditing the Ultrasound guided blocks by comparing with nerve stimulator guided blocks as the standard.

References:

1) P.Marhofer et al. Ultrasound guidance for infraclavicular brachial plexus anaesthesia in children. Anaesthesia, volume 59, page542, July 2004.