Efficacy of clonidine as an adjuvant to ropivacaine in ultrasound guided transversus abdominis plane block in adult renal transplant recipients

Primary Author: Sayan Nath M.D. Anesthesiology  
All India Institute of Medical Sciences

Co-Authors: Anjolie Chhabra, M.D. Anesthesiology; Dalim Kumar Baidya, M.D. Anesthesiology; Ganga Prasad, M.D. Anesthesiology; Mahesh Kumar Arora, M.D. Anesthesiology; Rajeshwari Subhramaniam, M.D. Anesthesiology; Virinder Kumar Bansal, M.S. General Surgery;

Introduction: Both single shot and continuous catheter transversus abdominis plane (TAP) block has shown variable results in adult renal transplantation surgeries. Clonidine has been successfully used as an adjuvant for increasing effectiveness of TAP block in Caesarean section but its effect in chronic kidney disease patients undergoing renal transplantation has not been studied.

Objectives: To evaluate TAP block with ropivacaine with and without clonidine for adult renal transplantation surgeries in terms of analgesic efficacy by comparing post-operative 24-hour morphine consumption and visual analogue pain scores and comparison of the hemodynamic parameters in both the groups.

Methods: Prospective randomized double blind interventional study conducted in 40 adult patients scheduled for renal transplantation. Patients were randomly allocated into 2 groups i.e. Gr.1 (USG –ropiTAP) (Ropivacaine 0.5% 20ml), Gr.2 (USG-cloniTAP) (Ropivacaine 0.5% plus clonidine 2μg/kg, total volume 20ml). USG guided single shot TAP block was given post induction of general anesthesia. Intraoperative analgesic requirement and hemodynamics were noted. Post operative pain scores (VAS 0-100), morphine consumption in patient controlled analgesia pump and rescue morphine consumption were compared at 0, 2, 6, 12 and 24 hours. Side effects like nausea-vomiting, respiratory depression, pruritus and hemodynamic alterations were compared between the groups.

Results: Pain scores were similar among the groups in postoperative period at all observed time points. The 24 hour total morphine consumption 27(8-28) [median(range)]mg vs 31.5(9-53)mg and need for rescue analgesia did not vary between the two groups. The time to first analgesic requirement in post operative period were comparable. Intraoperative total fentanyl consumption 3.1 Å± 0.02 (mean Å± SD)μg/kg was higher in the USG-ropiTAP group compared to the USG-cloniTAP group(2.3 Å±0.5μg/kg) (p=0.002). The number of patients having intraoperative hypotension requiring ephedrine boluses were significantly higher in the USG-cloniTAP group(47.4% patients) compared to the USG-ropiTAP group(2% patients) (p=0.014). No significant post-operative side effect was observed in any group.

Conclusion: Addition of clonidine at a dose of 2μg/kg in single shot TAP block for adult renal transplant recipients provided better intraoperative analgesia but caused significant hemodynamic
alterations without any clinical advantage for post operative analgesia. Thus we do not recommend the usage of clonidine at this dosage in TAP block for such patients.