Comparison Of Paravertebral Block And Interpleural Block In Patients Undergoing Breast Surgery Under General Anaesthesia : A Prospective Randomized Study

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Background and Aims

Interpleural and paravertebral blocks are indicated for providing intra operative and post operative analgesia in unilateral surgeries of the chest and abdomen including breast surgery. The aim of this prospective randomized study was to evaluate the intra operative analgesic requirement, haemodynamic parameters, efficacy and duration of postoperative analgesia and the possibility of home readiness of patients receiving paravertebral block or interpleural block as an adjuvant to general anaesthesia.

Methods

Sixty ASA grade I-III patients in the age group of 20-80 years scheduled for breast surgery were randomly allocated into 3 groups after induction of general anaesthesia. Group A (Control) did not receive any block. Group B (PVB) received paravertebral block in single space at T3-T4 level. Group C (IPB) received interpleural block in 3rd/4th intercostal space in the mid axillary line. 20 ml of 0.5% bupivacaine hydrochloride and clonidine 2 μ g/kg was used for administration of the blocks.

Results

The mean heart rate and blood pressure was comparable and stable throughout the intra operative period in the three groups. 65% patients required intra operative fentanyl supplements in control group while only 15% patients in PVB group and 35% patients in IPB group required intra operative fentanyl supplement. { p (A/B/C) = 0.005, p (B/C) = 0.144}. The mean dose of intra operative fentanyl supplements was 51.54 µg in

control group, 30.00 µg in PVB group and 34.29 µg in IPB group {p(A/B/C) = 0.014, p(B/C) = 0.588}. Patients of PVB group had the longest time to first rescue analgesic requirement (13.8 hrs) followed by IPB group (9.6 hrs) and Control group (6.5 hrs) had the lowest time to first rescue analgesic requirement. All the twenty patients required diclofenac for pain relief in first 24 hrs in control group, while 35% patients in group B and 30% patients in group C did not required any rescue analgesic in first 24 hours {p(A/B/C) = 0.015, p(B/C) =0.736 }. Five patients in control group while only one patient each in PVB and IPB group required narcotic analgesic {one dose of tramadol (50mg)}for pain relief in first 24 hrs. The mean VAS score at rest as well as on movement was significantly lower in group B (PVB) and group C (IPB) compared to group A (Control) with VAS score in group B being the lowest at all points of time. The mean VAS score at rest as well as on movement of group B and group C was clinically comparable at all points of time. Mean sedation score was comparable among the three groups. At 6 hours postoperatively the number of patients who achieved dischargibility criteria were significantly higher in both the block groups compared to the control group. Nearly all patients achieved this criteria by 24 hrs. The incidence of nausea and vomiting was similar in the three groups. None of the other complications were noted.

Conclusion

The use of paravertebral block or interpleural block with bupivacaine and clonidine is a safe and effective technique. It enhances the intraoperative and postoperative analgesia, provides better mobility with minimal block related complications in patients undergoing breast surgery, when compared to general anaesthesia alone.