PROSPECTIVE RANDOMIZED STUDY OF CONTINUOUS PARAVertebral Fentanyl- Bupivacaine Infusion FOR POST-THORACOTOMY Pain: (Fenestrated Catheter Versus Ordinary Catheter Techniques)


Introduction: Continuous paravertebral blockade has been described as a very effective method for controlling post-thoracotomy pain with less complications.

Patients and methods: Forty consecutive patients aged 40 - 70 years, undergoing elective thoracotomy were randomly allocated to have a paravertebrally placed catheter before chest closure. Group I (20 patients): in whom we applied a fenestrated catheter in the paravertebral space at the level of the surgical incision. 8-10 fenestrations were done using an 18-G sterile needle. Group II (20 patients): in whom we applied an ordinary (single tip opening) catheter the same way. Patients received continuous infusion of bupivacaine 0.125% + fentanyl 2 g/mL at a rate of 8 mL/hr started after wound closure before extubation. The visual analogue scale for pain (VAS) was assessed at rest and during cough, sedation score, systolic and diastolic blood pressures, respiratory rate, and O2 saturation using pulse oximetry every 4 hours for the first 48 postoperative hours. Unwanted effects were recorded as well. Anatomical place of the injectate was confirmed by injection of iohexol (Omnipaque).

Results: Patients in group I showed better (lower) VAS at rest and during cough compared to patients in group II. Ventilatory parameters was significantly better preserved in group I who had less respiratory rate, higher oxygen saturation and less post operative respiratory morbidity. Complications occurred more frequently in group II (p<0.05). The total infused volume of the study medication over the first 24 hours, was considerably less in group I. CT scan showed a down spread of the contrast media injected through the catheter paravertebrally with an area range of 2-4 vertebral segments in group I versus 4-8 segments in group II.

Conclusion: We recommend the use of the modified (fenestrated) catheter continuous paravertebral block for post-thoracotomy pain in view of its simplicity and safety.