PD-3. PROSPECTIVE RANDOMIZED STUDY OF CONTINUOUS PARAVERTEBRAL FENTANYL-BUPIVACAINE INFUSION FOR POST-THORACOTOMY PAIN: (FENESTRATED CATHETER VERSUS ORDINARY CATHETER TECHNIQUES)

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Continuous paravertebral blockade has been described as a very effective method for controlling post-thoracotomy pain with less complications. In this pilot study, we compared the results of continuous paravertebral blockade using ordinary (single tip opening) catheter versus our modified (multiple fenestrated) catheter. After obtaining approval and informed patient consent, 40 consecutive patients aged 40 - 70 years, undergoing elective thoracotomy,and receiving the same anesthetic technique were randomly allocated to have a paravertebrally placed catheter before chest closure. Patients were classified into: Group I (20 patients): in whom we applied a fenestrated catheter in the paravertebral space extrapleural at the level of the surgical incision. 8-10 fenestrations were done using an 18-G sterile needle about 1cm distance apart and having about half the diameter of the tip opening. .GroupII (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 mg/mL at a rate of 8 mL/hr started after wound closure before extubation. This rate was modified according to the patient demand. 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 like nausea, vomiting, hypotension, pruritus or urine retention were recorded as well. Anatomical place of the injectate was confirmed by injection of iohexol (Omnipaque) while the patient was semi-sitting and computed tomography was performed.

Patients in group I showed better (lower) VAS at rest and during cough compared to patients in group II ($P < 0.05$). Sedation scores were the same without showing any significant difference between both groups. Ventilatory parameters was significantly better preserved in group I who had less respiratory rate (the highest RR was 26 breath/m in group I versus 29 breath/m in group II), higher oxygen saturation (the lowest saturation was95% in group I versus 93% in group II) and less post operative respiratory morbidity (P value < 0.05). Complications: nausea, pruritus, urine retention, numb heavy legs and confusion 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 (219ml versus 240ml in group II in the first 24 hours) explaining the lower incidence of complications. CT scan showed a down spread of the contrast media injected through the catheter paravertebrally with a range of 2-4 vertebral segments in group I versus 4-8 segments in group II.We recommend the use of the modified (fenestrated) catheter continuous paravertebral block for post-thoracotomy pain in view of its simplicity and safety.

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