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Effects of thoracic epidural block on oxygenation during one-lung ventilation: a pilot study

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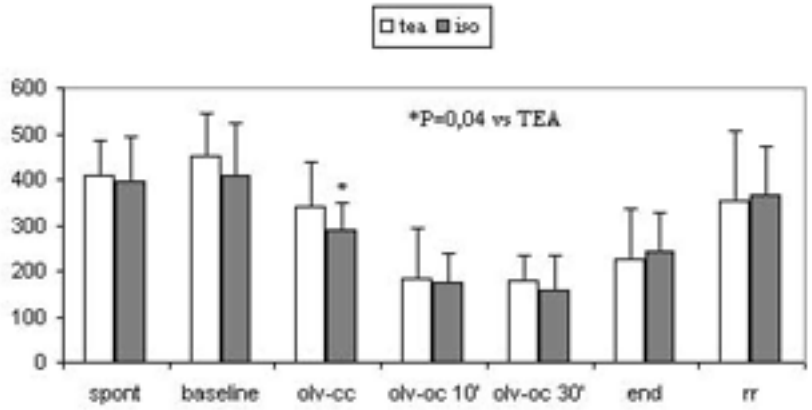
Background: The aim of this study was to evaluate the effects of thoracic epidural anesthesia on patients' oxygenation during one-lung ventilation (OLV).
Methods: Thirty-eight patients, ASA physical status I-III, undergoing thoracic surgery were randomly allocated to receive general anesthesia alone (group ISO, n = 16) or combined epidural-general anesthesia (group TEA, n = 22)
After induction (fentanyl 1 mcg/kg, thiopental 6 mg/kg, and atracurium bromide 0.5 mg/kg), general anesthesia was maintained with either isoflurane (End tidal concentrations: 0.6 - 1.5%) or epidural anesthesia (5 ml of 1% lidocaine every 60 min, after an initial 100 mcg bolus of fentanyl) combined isoflurane (End tidal concentrations: 0.3 – 0.6%). Lungs were mechanically ventilated with a 50% oxygen in nitrous oxide mixture, while isoflurane concentrations were adjusted to maintain cardiovascular stability. Arterial blood gasses were measured before surgery during two-lung ventilation, in lateral position with OLV-closed chest, 10 and 30 min after OLV-open chest, and at the end of surgery.
Results: Changes in PaO2/FiO2 ratio are reported in the figure:
11 patients (45,8%) of group TEA and 9 patients (56,2%) of group ISO required 100% oxygen to maintain SpO2>92% (P=0,748)
Conclusions: The higher values of PaO2/FiO2 observed during OLV before chest open in patients receiving TEA were probably related to a reduced shunt because of vasodilatation of pulmonary vessels; however, thoracic epidural anesthesia did non-further affect patients' oxygenation during OLV.



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