Sevoflurane versus propofol for lung resection surgery and long-term survival (3 years): a prospective analysis

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BACKGROUND AND GOAL OF STUDY

Recent publications have suggested differential effects of anaesthetic agents on cancer cell growth. Previously, we found that patients anaesthetized with sevoflurane had a significantly lower mortality in the first year than patients anaesthetized with propofol. This retrospective analysis investigated the association of anaesthetic technique (propofol versus sevoflurane) with long-term survival in patients receiving elective lung resection surgery (LRS) in a comprehensive cancer Center over 3 years.

MATERIALS AND METHODS

We excluded patients who received non-oncological LRS. Long-term follow up of prospective RCT in which patients were randomly assigned to maintain anaesthesia with sevoflurane or propofol. Opioids and neuromuscular block drugs were used according to the anaesthesiologist's criteria. All patients received the same intra and postoperative analgesia via paravertebral thoracic catheter. Overall survival was estimated for each group using the Kaplan-Meier curve. Estimated survival curves were compared using the log-rank test. p was set at 0.05.

RESULTS

150 patients undergoing oncologic LRS were included in the study, 73 in the sevoflurane group and 77 in the propofol group. Patients' characteristics were similar in both groups. No differences were found in mortality at first month, sixth month, and third year after the surgery. The mortality at first year was higher in the propofol group ($p < 0.05$). Mean survival was similar in both groups (806 days in sevoflurane group and 752 days in propofol group). The Kaplan-Meier curve is showed in Figure 1.

Mortality	SEVO (n=73)	PROPO (n=77)	P value
First month	0	3 (3.9%)	0.088
Sixth month	1 (1.3%)	6 (7.8%)	0.062
One-year	2 (2.7%)	11 (14.3%)	0.012
Third-year	17 (23.3%)	26 (33.8%)	0.156

CONCLUSIONS

There appears to be no significant differences in overall survival after oncological LRS with the use of sevoflurane compared to propofol.

De la Gala F, et al. Postoperative pulmonary complications, pulmonary and systemic inflammatory responses after lung resection surgery with prolonged one-lung ventilation. RCT comparing intravenous and inhalational anaesthesia. Br J Anaesth 2017;119(4):655-63.