Category :**Respiratory: mechanical ventilation**

A37 - ***Mechanical ventilation strategy during cardiopulmonary bypass. impact on outcomes and pulmonary complications in the intensive care unit.***

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Introduction:

The immediate post-operative phase following cardiac surgery is a delicate and difficult phase in which serious complications can occur. One of the most dangerous complications is respiratory insufficiency, which is aggravated by the restriction of chest movement, haemodilution and non-physiological blood circulation during cardiopulmonary bypass (CPB). The impact of mechanical ventilation settings during CPB on the postoperative period is still debated.

Methods:

Prospective, randomised, controlled study at one centre. Adult patients undergoing on-pump cardiac surgery (coronary artery bypass grafting (CABG)) by sternotomy for coronary artery disease were included.
Patients were randomised into two groups – one group that received mechanical ventilation and one group that did not receive ventilation during CPB. The main endpoint was PaO2/FiO2 as a marker for the quality of ventilation and perfusion measured in the ICU in the immediate postoperative period. Secondary endpoints were driving pressure, minute ventilation and postoperative pulmonary complications such as atelectasis and acute respiratory distress syndrome. Atelectasis was diagnosed using the USI method. The patients in both groups were comparable with regard to the primary parameters.

Results:

Fifty-two consecutive patients were included, 25 and 27 in each group. No significant difference was found in the PaO2/FiO2 ratio in the groups (p=0.06). A significant difference was found in driving pressure 10.13 ± 2.76 vs. 8.75 ± 3.1 cmH2O with p-value=0.03. More complications such as acute respiratory distress syndrome and USI signs of atelectasis (5 vs. 16) were observed in the non- ventilated group. Results are shown in tab.1.

Conclusion:

Conclusion: Prolonged absence of mechanical ventilation during CPB may lead to an increase in cases of atelectasis. Maintaining mechanical ventilation during CPB may be beneficial for patients undergoing cardiac surgery. Strategy of mechanical ventilation during CPB need in further research.

Table:

	Ventilated group (n=25) [Mean ±]	Non ventilated group (n=27) [Mean ±]	p value (CI 95)
PaO2/FiO2	315.33 ±67.31	283.86 ±76.26	0.06
Driving pressure	10.13 ± 2.76	8.75 ± 3.1	0.03
MV	6.48±3.15	8.05±2.93	0.06
PCO2	43.17±17.82	39.26±21.64	0.27
ARDS	0	1(3.7%)	
Atelectasis	5 (20%)	16 (59.2%)	

Results