

ANAESTHESIA FOR PATIENTS WITH RESPIRATORY DISEASE

(prevention of postoperative respiratory complications)

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ABSTRACT

Patients with respiratory diseases have increased chances of developing perioperative and postoperative complications. In order to minimise the risk of complications, these patients should be identified beforehand and their pulmonary function optimised.

There are multiple risk factors for the occurrence of PRC and they are associated with the patient, previous clinical conditions and characteristics of the anaesthetic surgical procedure.

Patient-related factors are: the advanced age, smoking cigarettes, obesity, patients with existing respiratory diseases, restrictive lung diseases and obstructive sleep apnea syndrome (OSA). Surgery-related factors include duration of the operation and whether it is elective or emergency surgery. Factors related to anesthesia are: the type of anesthesia - general anesthesia reported as a risk factor for PRC, the use of neuromuscular blockers, position during anesthesia.

Special attention should be paid to the early diagnosis of the PRC, and taking aggressive treatment to reduce the complications, and thus to mortality.

Strategies for reducing PRC are grouped into preoperative, intraoperative and postoperative. Preoperative strategies are smoking cessation, use of corticosteroids and bronchodilators in addition to respiratory therapy, empirical corticosteroid supplementation and respiratory physiotherapy.

Intraoperative strategies include lung protective mechanical ventilation (moderate PEEP 6-8 cm H₂O /low tidal volume 6-8 ml/kg /low plateau pressure); the use of volatile anesthetics, proper use of neostigmine, use of sugammadex and neuromuscular monitoring; moderate restrictive volumes of fluids, the use of LMA, neuroaxial anesthesia when ever it is possible and laparoscopic surgical approach.

Postoperative strategies are proper monitoring in the awakening room, the decision for transfer in the ICU, techniques for lung expansion (stimulating spirometry, breathing exercises, CPAP); extubation in Fowler's position, early mobilisation, use simple analgesics (paracetamol) and anti-inflammatory drugs. For the patients of invasive mechanical ventilation strategies include weaning protocols, pressure support mode, avoidance of deep sedation and analgesia and head kept at 30° deflection.

CONCLUSION

Preoperative evaluation of patients with respiratory diseases should be done in candidates for elective or emergency surgery, as there is a possibility of establishing measures that reduce the risk of complications during intra and postoperative periods. In the case of elective surgeries, the objectives of the preoperative assessment can be widely accomplished; namely, clinical stabilisation of lung disease, maximising lung function, smoking interruption, and on-time preoperative respiratory therapy.

Intrasurgical use of lung-protective ventilation with moderate PEEP, restrained use of fluids, increased use of volatile anesthetics (without hypotension), reasonable and careful titration of

muscle relaxants with appropriate monitoring for block reversal, minimisation of opioids, use of regional anaesthesia, and laparoscopic surgery when possible. Postoperative, pulmonary expansion techniques, Fowler position, early mobilisation.

Finally, patients with lung disease often have other diseases that need to be globally assessed for the risk of cardiovascular, metabolic, renal, and the risk of venous thromboembolism.

