PULMONARY INFLAMMATORY RESPONSE MODULATION BY ESMOLOL IN A ONE-LUNG VENTILATION EXPERIMENTAL MODEL DURING LUNG RESECTION SURGERY

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BACKGROUND AND GOAL OF STUDY

One-lung ventilation (OLV) is usually needed in **lung resection surgery (LRS)** and is associated with lung **inflammatory response (LIR)**. **Esmolol (E)** modulates this response in different clinical settings. The aim of this study was to determine the role of E on the LIR induced by LRS with OLV.

MATERIAL AND METHODS

21 mini-pigs were randomly assigned to 3 different groups: CONTROL (C), ESMOLOL (E), or SHAM (S). E group received and intravenous **esmolol bolus** (0.5 mg/kg) after induction, and then a **continuous perfusion** of 0.05 mg/kg/min during the whole procedure. S group underwent a left thoracotomy without being exposed to LRS or OLV. At the end of LRS the animals were awakened and after 24 hours they lung biopsies were obtained under general anesthesia. **Bronchoalveolar lavages** and **lung biopsies** were analysed to measure diferente **biomarkers of inflammation** and **glycocalix damage**. Data is expressed as mean $\pm$ standard deviation. **ANOVA** test was used to determine differences between 3 groups. **Mann-Whitney** test was used to compare C vs E groups. Values of **p<0,05** were considered **significant**.

RESULTS

CONCLUSIONS

Intraoperative **esmolol** continuous perfusion during lung resection surgery **attenuates the inflammatory response** intraoperatively and 24h post surgery.

These antiinflammatory effects may be related to the **blockage of the catecholaminergic receptors** expressed by inflammatory response cells in the airway.