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OPTIMIZATION OF LUNG FUNCTION DURING EX-VIVO LUNG PERFUSION

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Objectives:
Ex-vivo lung perfusion is a tool

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We describe a successful case of lung transplant using a graft tailored with the help of selective blood samples obtained from each pulmonary vein.

Case Description:
We accepted the lungs from a 46 years old controlled donor after cardiac death. OTO score at time of proposal was 9 due to a right lung opacity reported on chest X-ray and PaO2/FiO2 of 276 mmHg. Lungs procurement was performed after treatment withdrawal and institution of normothermic regional perfusion. After retrieval, lungs were stored in ice and subsequently evaluated with ex vivo lung perfusion (EVLP) at recipient site. EVLP was performed with an open atrium technique and hematocrit 3-5%. The first assessment at 1 hour revealed a difference in terms of PaO2/FiO2 between the two lungs: 586 mmHg left and 292 mmHg right. Inspection of the lungs demonstrated a non-ventilated area in the posterior part of the right lower lobe without improvement after recruitment maneuvers. We performed a new evaluation collecting blood samples from each pulmonary vein showing the following PaO2/FiO2 (mmHg): right upper and middle lobe 354; right lower lobe 281; left upper lobe 573; left lower lobe 358. We decided to perform an atypical resection of the right lower lobe during EVLP. Final assessment after 4 hours was PaO2/FiO2 (mmHg) 370 and 490 in the right left lung, respectively. The lungs were allocated to a 45 years old woman with end-stage idiopathic pulmonary fibrosis (LAS 68.6). We performed a bilateral lung transplant on central VA-ECMO due to severe pulmonary hypertension. We did not observe primary graft dysfunction and ICU stay lasted 6 days. Patient was discharged from hospital in post-op day 30 and she is alive at 3 months from surgery.

Conclusions:
We believe that selective lobar assessment during EVLP in particular cases could help to optimize graft function.

Disclosure: No significant relationships.

Keywords: lung resection, selective blood gas analysis, lung transplantation, ex-vivo lung perfusion

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