6.06 Ex-Vivo Lung Perfused Porcine Lungs as a Surgical Research Tool

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Background: Ex-vivo lung perfusion (EVLP) has been widely used as a tool to increase the donor pool of marginal lungs for lung transplant. Current research is carried out on animal models such as porcine animal models for pharmaceutical purposes and to study lung function post EVLP. To date surgical research using EVLP lungs has been scarce. **Methods:** Two 20kg porcine models were assessed for viability using the Toronto EVLP Protocol. Hourly blood gas analysis, airway pressure, volumes, peripheral vascular resistance, and dynamic compliance of the lungs were assessed over 24 hours. The lungs were perfused with a high glucose, electrolyte enriched media. They were ventilated at recommended Toronto EVLP airway pressures (0.7mL/kg). **Results:** Blood gas analysis showed increasing lactate from 0.8-12 between the two porcine lungs. Pulmonary vascular resistance increased as expected over the course of 24 hours from 1029-2623dyns/cm^3. Airway pressures and volumes remained consistent throughout the EVLP. Dynamic compliance of the lungs decreased over the 24 hours and varied between 4-6cmH2O. **Conclusions:** EVLP Porcine models can be used as a surgical research tool due to their stability in small volume studies over a period of 24 hours. **Keywords:** Lung Transplant, EVLP, Regenerative Medicine. **Disclosures: Funding:** This research was supported by grant P1-06 from CURAM. **Conflict of Interest**: The authors declare that they have no conflict of interest.