6.05 A Systematic Review of the Contribution of Small Animal Ex vivo Lung Perfusion Models to Lung Transplantation Research

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Background: Lung transplantation (LTX) has been limited worldwide due to viable donor shortage. Extensive research has been carried out using ex-vivo lung perfusion (EVLP) in attempt to address this issue. This systematic review sought to assess the role of small animal models in EVLP research focusing primarily on re-perfusion injury (RPI). **Methods:** Using a predefined pro forma, a strategic literature search was performed extracting all relevant data from included studies. Qualitative synthesis using thematic analysis was used to present key effect measures. Methodology quality, bias risk, and certainty assessment was performed using the Modified Downs and Black Checklist and a GRADE-CERQual approach. **Results:** In total, 13 studies comprising of 10 rat-based and three murine-based DCD models met inclusion criteria. All included studies investigated RPI, either as a primary or secondary outcome, exploring alternative EVLP protocol variables, potential inflammatory and proteomic RPI markers, and novel RPI targeted therapies. **Conclusions:** The rat model was found to be the most established and contributing small animal EVLPresearch platform. Collective findings of these studies all appear promising in mitigating RPI incidence and improving LTx success. **Keywords:** Lung Transplant; Ex-vivo lung perfusion.**Conflict of Interest**: The authors declare that they have no conflict of interest **Funding**: This study was non-funded.