

Perfusion and Adsorption for Liver grafts ex-situ treatment: A Case Report

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Introduction

The increased use of extended criteria donors (ECD) lead to the increasing use of ex-situ organ treatments (MP) with many goals: graft injury mitigation, assessment and prolonged preservation prior to transplantation. The aim of this study is to investigate the combination of hypothermic MP (HMP) with inflammatory mediators' adsorption by means of the integration of an apheresis device which efficacy was already explored in HMP experimental settings.

Results

One ECD graft underwent HMP procedure with adsorption inclusion. The average temperature was $8 \pm 0,7^{\circ}\text{C}$. Target vascular pressures were: 25 mmHg for the artery and 5 mmHg for the portal vein. During the treatment, both vascular resistances decreased (58% arterial, 38% portal) indicating an improval in perfusion conditions. Overall, no complications were recorded. Cytokines have not been analyzed yet.

Methods

Liver grafts from ECD undergo HMP with PerLife[®] system (Aferetica, Bologna, Italy), performing a dual 90 minutes perfusion with the integration of PerSorb (CytoSorbents INC, New Jersey, USA) for inflammatory cytokines remodulation by chemical-physical interaction with the perfusate. Perfusate sampling is performed since the beginning (t0) until the end (tend), every 30 minutes. In order to assess the efficacy of the removal, pre and post sorbent sampling is performed at each timing. Additional sampling is performed in the static preservation solution, to characterize perfusate cytokine levels before MP start. Target cytokines are IL-6, IL-10, TNF-alfa.

Conclusion

In this very preliminary experience, cytokine adsorption resulted safe and feasible in high-risk liver treatment. The efficacy of adsorption will be analyzed upon cytokine analysis completion.

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