

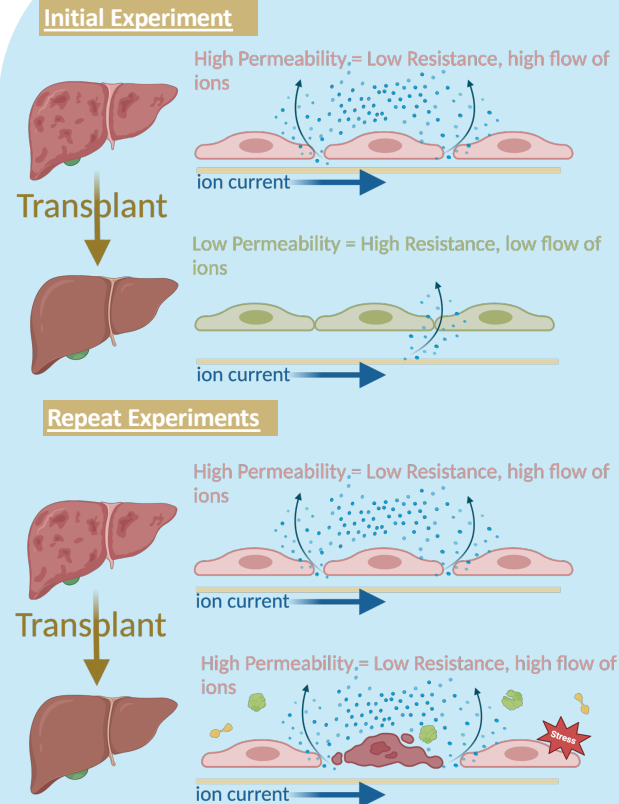
Plasma from Liver Transplant Patients with Persistent Ascites Increases Endothelial Permeability and has Decreased Vessel Integrity Proteins

Caitlin K. Robinson, Jessie G. Jiang, Preston Stafford, Ivan E. Rodriguez, Kirk Hansen, Hunter B. Moore, Trevor Nydam, Mitchell J. Cohen, Christopher Erickson

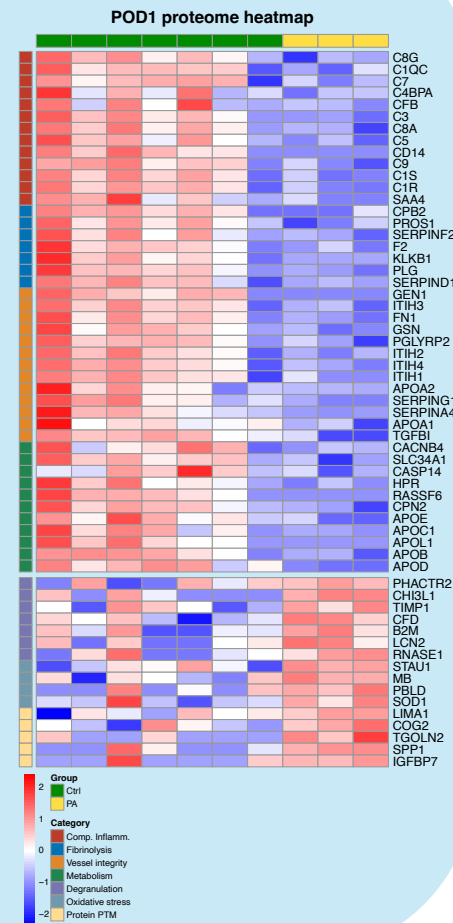
Methods

- Plasma collected from patients undergoing **liver transplant** with **post-operative ascites**.
- Samples from **before** and **after** surgery added to human umbilical vein endothelial cells (HUVECs)
- Permeability** change of cell-cell junctions of HUVECs measured with an **Electrical Cell-Substance Impedance Sensing Plate (ECIS)**
- Proteomic analysis** identified increased degranulation and oxidative stress, and decreased complement, coagulation and vessel integrity proteins **after** surgery
- To **determine if** endothelial permeabilities contribution to **post-operative ascites** and what **proteins** are implicated

Experimental Findings



Created with BioRender.com



Results

Endothelial permeability is **significantly increased** on POD1 in patients who develop post-operative ascites ($p=0.0034$) compared to controls.

Endothelial permeability is also increased significantly when compared to **all baseline plasma** ($p=0.0003$) & **post-operative patients without ascites** ($p<0.0001$).

Proteomic analysis demonstrated **increased** degranulation & oxidative stress, and **decreased** complement, coagulation, and vessel integrity proteins in these patients.



Visual Abstract Author:
Caitlin K. Robinson MPH
caitlin.k.robinson@cuanschutz.edu



Department of Surgery

UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

Conclusion Plasma from post-operative day 1 increases endothelial permeability *in vitro*. Proteomic findings suggest there are circulating mediators immediately surrounding transplant impacting endothelial integrity. These are important findings in uncovering a mechanism for post-operative ascites in liver transplant patients.