ESOT Transplant Fellowship – Research progress report

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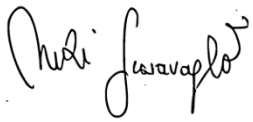
My ESOT fellowship project focused on understanding the molecular mechanisms underlying ischemic cholangiopathy, a major unresolved complication following liver transplantation, to identify biomarkers and potential therapeutic targets. Despite advances in machine perfusion, we still lack reliable predictive biomarkers and specific therapeutic targets. As such, biliary complications remain a significant barrier for the improvement of post-transplant outcomes.

During the fellowship, I established workflows to characterise injured cholangiocytes in samples obtained during normothermic machine perfusion and integrated these findings with in vitro models of cholangiocyte ischemic injury already established in the lab. This allowed us to begin dissecting the downstream inflammatory and profibrogenic pathways associated with ischaemic biliary injury.

Although this project is still ongoing, important progress has been achieved over the past year. We have generated preliminary mechanistic data supporting a role for H19 in promoting a pro-inflammatory and profibrogenic microenvironment following ischemic cholangiocyte injury. In parallel, I gained hands-on experience in using long-term normothermic machine perfusion as an experimental platform for therapeutic testing through my contribution to a translational study led by the Sampaziotis group's senior postdoctoral researcher, Teresa Brevini [PMID: 40774626]. Importantly, this work improved my ability to interpret molecular findings in the context of organ performance during perfusion, with the aim of developing robust biomarkers and actionable therapeutic strategies.

One of the most significant outcomes of this fellowship has been the ability to leverage the data and experience generated during this year to secure further funding. Building directly on the preliminary data generated during the ESOT transplant fellowship, I successfully obtained additional competitive funding to continue this line of investigation within the Sampaziotis group, with a particular focus on therapeutic testing on the pump. This reflects the role of the ESOT fellowship as a catalyst for my research development.

ESOT Transplant fellow
Dr Miki Scaravaglio



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