**Using the Speckle Doppler to Quantify Perfusion Quality in Kidney and Pancreas Grafts on vascular reperfusion. A Pilot Study.**

Kidney and Pancreas transplantation is considered the treatment of choice for many people with End Stage Renal Disease and Type 1 diabetes because quality of life and survival is often better after transplantation. However the quality of organs varies and also the quality of perfusion once they are transplanted. The immediate determinant of the survival of any transplanted allograft often depends on the overall quality of perfusion of the organ. The assessment of perfusion is currently visually and empirically done and reported by the surgical team, with low objectivity. We plan to use the Laser Speckle Doppler technique in both kidney and pancreas transplantation to objectively study the quality of blood flow to the kidney and pancreas after transplantation. This doppler will provide continuous, non-invasive blood flow monitoring of the microvascular environment of the transplanted organ. The strength of the technique is in evaluating changes in flow over an area of interest or the whole transplanted organ and accurately numerically quantifying the flow. The laser speckle doppler technique is now well established and has been used in various clinical and research setting as the most convenient means of assessing tissue blood flow. It has however not yet been used in kidney and pancreas transplantation.