TCS/23/07 - Utility of cardiovascular biomarkers to predict patient outcomes in kidney transplantation

Blood markers of heart damage (e.g., a protein called troponin) have revolutionised our ability to diagnose, predict the risk of, and manage heart attacks and heart failure in the general population. We want to find out if these same markers are useful in patients needing a kidney transplant. This is particularly important as heart disease is the commonest cause of death in these patients, and the riskiest period for heart disease is while waiting for, and immediately after, the kidney transplant operation. Overall, kidney transplantation restores kidney function and improves quality of life in patients with kidney failure who otherwise would need regular dialysis, but we are currently unable to identify those patients with kidney failure who might benefit most from an early kidney transplant or those patients who are at the greatest risk of heart disease. We will bring together experts in heart and kidney medicine and data science to help understand whether these readily available tests can improve our ability to predict who will benefit most from a kidney transplant, and who is at greatest risk. As these blood markers are already in routine use in the general population, our findings can be rapidly introduced into routine clinical care, providing an accessible, affordable, and patient-friendly way of improving the identification and management of heart disease in patients awaiting kidney transplants.