**Fibroscan study Plain English summary**

There are approximately 30,000 adults in the United Kingdom receiving dialysis (blood cleaning) treatment for advanced kidney disease. Advanced kidney disease is associated with reduced quality of life and increased risk of hospital admission and death. For certain people with kidney disease treated with dialysis, receiving a kidney transplant is not possible. For other people who are treated with dialysis remaining healthy and well is crucial prior to receiving a transplant. It is therefore important to try and investigate the reasons behind poor outcomes in order to improve treatment strategies for people receiving dialysis.

A significant proportion of people (approximately 25%) receiving haemodialysis (a treatment where blood is removed from a person’s body and then ‘cleaned’ by a machine before being returned to the patient) have elevated measurements of inflammation on blood testing that cannot be easily explained by other medical conditions. One possible source of inflammation in this group of patients is the impaired ability of the liver to effectively decontaminate the blood from toxins and other waste products, some of which originate from the gut. There are many conditions, including diabetes, obesity, raised blood pressure and longstanding infection with hepatitis viruses, that can cause both kidney and liver impairment and there is also evidence that links kidney disease to the worsening of liver disease. There is evidence that people with normal liver function blood tests can have impaired liver function, especially in those receiving dialysis treatment, and so additional investigations to investigate liver function are required.

This study aims to establish the proportion of people treated with dialysis who have evidence of increased liver stiffness (a measurement of liver impairment). It will also aim, using blood tests, to try and assess the risk of liver stiffness in people treated with dialysis. Additional aims of the study are to establish if increased liver stiffness in people treated with dialysis is linked to reduced life expectancy and developing other significant medical problems. We will also aim to see if there is a relationship between excess fluid in the body and increased liver stiffness.

This study involves analysis of some blood tests (which can be taken while on dialysis), a painless ultrasound scan of the liver called a FibroScan and an assessment of the amount of fluid in your body. Examination with FibroScan is a technique used to assess liver stiffness without invasive investigation. The scan takes 5-10 minutes to perform, with immediate results. The FibroScan and fluid assessments will be performed before and after dialysis to look for differences before and after fluid has been removed on dialysis. Participants will be asked to fast for 3 hours prior to undergoing each FibroScan test which will be performed both before and after dialysis. Participants will be able to eat in between each FibroScan assessment. Routine blood tests performed as part of usual dialysis care as well as other blood measurements of inflammation and liver function will also be performed as part of this study.

In addition, as part of this study, participants will also be asked 2 questions about their mood. This will help to assess if there is any evidence of a relationship between mood, amount of fluid in the body and liver stiffness.

In addition, as part of this study, participants will also be asked 2 questions about their mood. This will help to assess if there is any evidence of a relationship between mood, amount of fluid in the body and gut leakiness.

Following completion of the above investigations, study participants will not be required to perform any further study assessments. The assessments described above should take 40 minutes in total to complete.

Participants will be followed up for 2 years following the initial set of investigations. Follow up will involve review of the participants medical records and will not entail any extra study visits.

This study aims to help establish if there is significant evidence of impaired liver stiffness in patients treated with dialysis and if increased liver stiffness is linked to worse health outcomes and excess fluid in the body. The results of this study will help to establish how significant the problem of increased liver stiffness is in people treated with dialysis and may help to inform future research about the impact of abnormal liver function in, and also treatments, in people treated with dialysis.