University Hospitals of North Midlands NHS Trust

Intercalation Research Project

Project Title:	**Long term changes in metabolism and obesity during peritoneal dialysis**
Lead Supervisor: **Name:** **Department:** **Email Address:** **Telephone:**	Dr Mark Lambie. Renal unit lambiem@doctors.org.uk
Co-supervisor: **Name:** **Department:** **Email Address:** **Telephone:**	Dr Emma Elphick Prof Simon Davies Renal Unit

Aims

Please outline the aims of your proposal (250 words):

Peritoneal dialysis (PD) supports patients with end stage renal failure through toxin and water removal, but this requires a significant glucose load intra-peritoneally in the dialysate, a high proportion of which is absorbed. This is likely to lead to adverse metabolic changes with central obesity and impaired glucose metabolism predisposing to diabetes however the extent of the impact dialysate composition is unclear. We aim to describe the association between dialysate and metabolic changes over time in PD patients using two existing cohort studies.

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Research Plan & Methodology

Explain how you intend to carry out the study. This includes the sampling strategy you intend to use, the data collection process and an analysis plan (750 words):

We will use the Global Fluid Study, an existing multinational observational cohort study of over 1000 PD patients with dialysate and plasma samples taken repeatedly every 6 months. By the time of this project, we will have measurements in plasma of a wide variety of cardiometabolic and inflammatory markers. Inclusion criteria will be any Global Fluid Study patient with a measurement within the first 6 months, and at least 3 total measurements to avoid problems with convergence.

The main analysis for this project will be longitudinal modelling of these markers, including IL-6, adiponectin, glycated albumin/fructosamine, LFT's, and HDL and LDL cholesterol as well as BMI. Initial investigation will be describing the changes in each of these with time and assessing patterns. Subsequent investigations will use BMI as the dependent variable and assess determinants of this, including standard demographic information as well as dialysate composition including glucose load. This will use multilevel modelling with a random intercept at patient level and random slopes as necessary.

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Student Summary

Give a brief summary of how the project will be appealing to students (250 words):

This project will develop clinically important evidence to directly inform the management of PD patients so the student will be directly contributing to improved patient care. The student will also acquire particular skills in:

Study Design, Data management, Statistical analysis, Presentation, Paper writing.

It is expected that this project will lead to several conference presentations and a first author publication for the student as well as greatly improving a student's critical appraisal of evidence.

They will be closely supervised and supported throughout the project by Dr Mark Lambie and also Dr Emma Elphick, a previous intercalating MPhil. There will be formal weekly meetings plus informal contact in between as necessary.

Supervision Plan

Highlight the supervisory support available to the student (250 words):

Weekly meetings with Drs Mark Lambie and Emma Elphick and bimonthly with Simon Davies. Ad hoc meetings with statisticians as necessary.

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Signatures & Declarations

Please ensure that all signatures are collected – otherwise your application may be delayed:

Principal Investigator:	Mark Lambie
Signature:	
Clinical Director :	
Signature:	

Deadline: xxxx

***Note: All applications must have ethical approval before they are considered**

Please submit the electronic version of your intercalation project to Keira.Watts@uhns.nhs.uk. If you have any enquiries, feel free to contact the Academic Development Team by phone or e-mail on 75385.