A New Therapy to Treat Membranous Nephropathy, a Rare Kidney Disease

BACKGROUND

Membranous nephropathy (MN) is a rare kidney disease mainly affecting adults in middle age. In the UK, about 800 new cases are diagnosed each year.

Damage to tiny filters in the kidney results in the loss of large amounts of blood protein into the urine (proteinuria) which over time causes swelling of tissues often around the ankles, stomach and face.

Current treatment for MN is often only started once spontaneous remission is unlikely (after 6-12 months) because of the serious side effects of immunosuppressive drugs, but this delay risks losing kidney function. Treatment is only effective at inducing a complete remission in about 30% of cases. The remaining 70% of patients risk losing their kidney function and require dialysis or kidney transplantation.

Recent research shows that 80% of MN patients have an autoantibody in their blood that recognises a receptor in the kidney called PLA2R. Research undertaken at The University of Manchester has shown that this autoantibody is linked to kidney damage seen in MN.

We are about to commence trialing a novel treatment for MN that is focused on removing the autoantibody from the affected person as soon as possible to preserve kidney function and stop further damage.

We have identified the area on the PLA2R receptor that the anti-PLA2R autoantibody recognises and binds. We can synthesise this peptide cheaply to produce a column that is coated with our peptide. By passing blood through such a column (which we are calling the PLARIA column), we can specifically remove the autoantibody rapidly and safely from the blood of a patient with MN.

We hope that the results of our trials will allow us to progress to larger, more comprehensive studies proving the efficacy and superiority of this therapy over that which is currently in use, and aim to carry out this work with an industrial partner on board.

THE TECHNOLOGY

- A novel immunotherapy to treat MN
- Will be trialed in Manchester starting in 2017

BENEFITS

- A potentially superior treatment option to current therapy for MN as it can avoid the serious side-effects associated with immunosuppressive drugs
- A potentially superior treatment option to current therapy for MN as it offers greater hope for the preservation of kidney function

APPLICATIONS

- The technology is being developed as a therapeutic for MN patients, focusing on removing the antibody that is implicated in 80% if MN cases.
- There is scope to develop this therapy to target the remaining 20% of MN cases.

INTELLECTUAL PROPERTY

A patent application has been filed in the US and Europe and another is currently in preparation.

OPPORTUNITY

The technology will be of interest to medtech companies that have an interest in kidney disease and immunotherapy. We would like to collaborate with an industry partner for further preclinical and clinical investigations with a view to ultimately licensing the technology.

CONTACT

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