Information Sheet for Parkinson's disease patients

You will be given a copy of this Information Sheet

Study title

Study on the effects of single nucleotide polymorphisms in aquaporin-4 (AQP4) gene on the clinical phenotype in patients with idiopathic and familial Parkinson's Disease.

Sponsor: University of Exeter

Invitation

You are invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

What is the purpose of the study?

Parkinson's disease (PD) is a neurological condition which worsens over time and mainly affects body movements. In PD, we know that there is a build-up of certain proteins inside the brain, the most important of which is called α-synuclein. The build-up of this protein is thought to negatively affect, and ultimately kill, brain cells. It is not known how or why this protein builds up in the brain. If more information was available, drugs could be created with the aim of delaying or completely stopping the progression of the disease.

Very recently, it was discovered that the brain has its own system to get rid of waste and that this system works best during sleep. It is called the "glymphatic system", and researchers believe that reduced activity of this system is responsible for the build- up of unwanted molecules inside the brain. A protein called Aquaporin 4 (AQP4) plays an important role in the glymphatic system running effectively. It is thought that changes in the AQP4 protein may reduce glymphatic system function and contribute to the development of neurodegenerative diseases, such as Parkinson's disease and Alzheimer's disease. Research has shown us that certain genetic changes in the AQP4 gene are associated with the progression of

Alzheimer's disease. These AQP4 genetic changes are very common in the general population and do not directly cause a specific disease or condition, however, they might increase (or decrease) the overall risk in developing a condition during an individual's life. So far, no study has ever checked whether having certain genetic changes in the AQP4 gene influences the course of Parkinson's disease.

With this study, our aim is to learn whether the presence of certain genetic changes in the AQP4 gene are linked to the development of random and hereditary forms of Parkinson's Disease. Moreover, since it is believed that the glymphatic system works best during sleep, we will measure the role of sleep disturbances in disease features.

Why have I been chosen?

You have been chosen because you have a diagnosis of Parkinson's disease and fit inclusion criteria for the study.

Do I have to take part?

No, it is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you have agreed to take part you are still free to withdraw at any time without giving any reasons and this will not affect the standard of hospital care you receive.

What is involved in this study if I take part?

If you are suitable, and agree to undergo this study, we will ask you to attend the Royal Devon & Exeter Hospital Research Site premises for clinical assessments.

If you agree to take part to this study, you will be contacted for an appointment that will be on a weekday.

This is a cross-sectional study. During this time, there will be one assessment that will need to be performed in the clinic and one assessments that will be done at home.

If you experience any distress during the study, including worsening of any preexisting neuropsychiatric symptoms, we will endeavor to provide you with any support you may require. You can contact the research team at anytime indicated below.

No lifestyle restrictions are required to take part in this study.

The study will be structured as follows:

Clinical Study Visit

The visit will last up to 1 hour and will take place in the Royal Devon & Exeter Hospital Research Site premises. Before any study procedure, a Consultant who is part of the study team will thoroughly explain all study procedures to you and will

happily answer any queries you might have. This Patient Information Sheet will be given to you to keep for your records. You can re-contact the research team within 15 days to let them know whether or not you would like to take part to the study, otherwise the research team will contact you to ask. If you are happy to participate, a visit at the Royal Devon & Exeter Hospital Research site Clinical Research Facility will be arranged for the clinical assessment. There, you will sign the consent form, a copy of which will be given to you for your records. No research related activity can take place until you have given your informed consent. We will then assess your suitability to take part in the study and will conduct a demographic questionnaire and a specific neurological examination. The process will take around 20 minutes. We will ensure all data collected will be anonymized i.e. no researchers will be able to identify you from the data. Stored data may be used in future research. On the same day, we will ask you to provide a blood sample for the genetic analysis and to measure the levels of some substances that can be altered in Parkinson's disease. The blood collection will be done in a room that is close to the examination room. The total amount of blood taken will be about 6 teaspoons (40 mL). The blood collected will be sent to the main research site, located in Exeter, and there preprocessed, stored, and sent out to other laboratories for analysis.

After this procedure, you will be asked to wear a wristwatch device called Actigraph, which monitors your sleep. It has a long-life battery, so no maintenance

is needed. The watch will be either handed to you at the end of the visit, or will be posted to you, along with a pre-paid envelope, and a sleep diary. You will be requested to wear this device for 14 days and, will be asked to send it back to the research staff in a pre-paid envelope that we will give to you. You will be instructed by the investigator on anything related to the use of this instrument. Moreover, a sleep diary will be given to you to keep notes of your nighttime sleep during this period; this can be sent back by post along with the Actigraph. The Actigraph is water resistant and can be worn in the shower, bath, or swimming pool. The only restriction is that it cannot be worn when in saltwater (i.e. the ocean). If you do remove it, please note the date/time that it is removed and put back on in your Sleep Diary. You can find a picture of the Actigraph device below.

Finally, you will be instructed on how to use an online website to perform some tests and questionnaires that you can comfortably do at home. There are nine short online questionnaires to be completed, which deal with aspects of daily life that can be affected by Parkinson's disease, such as the speed and comfort to perform daily activities, quality of sleep, and mood. There are five cognitive tests to complete, which aim to measure attention and memory.

Home Study Visit

At home, you will wear the Actigraph for 14 days and complete some questionnaires and tests via an email link provided through "Smart Survey" (Copyright ©2022 SmartSurvey) and "CANTAB" (Copyright ©2022 Cambridge Cognition Ltd). It will take about one hour to complete these tests. The Smart Survey is set up so that you can save your tests and resume at a later time. The results will be available immediately to the investigators. If you feel any distress, anxiety or any other symptoms during this home procedure, you can contact one of the study members and you may withdraw from the study. If you do not have access to the devices that are required to perform these tests and questionnaires, you can perform them at the NHS Trust Research Site, or we will endeavor to provide you with the necessary equipment. It is important that all questionnaires and tests are performed without any external help, to ensure that the results are as reliable as possible.

Figure 1: an example of an actigraph

Summary of steps

Clinical Study Visit	**Home Study Visit**
Screening assessment and consent form Clinical assessment (about 20 minutes) Blood sample (up to 15 minutes) Instructions on how to use the Actigraph	Performance of the online neuropsychological tests, and questionnaires Wearing of the Actigraph for 14 days
Instruction on how to use the online assessment	

We have a small travel budget to reimburse you and your carer for transportation costs to and from hospital and for refreshments throughout your visit (up to £25).

Please keep any travel tickets or parking receipts. You will need to provide these to the research team in order to receive a refund.

What are the possible risks of taking part?

Blood collection: Venous collection of blood is a minimally invasive procedure: the insertion of the needle into a vein may cause brief discomfort as the needle penetrates the skin. Side effects are very rare and do not entail any major complications (i.e. pain, numbness, bruising etc.).

What are the possible benefits of taking part?

This study does not include procedures or tests that provide any direct benefits to you. However, genetic counselling may be required if particular results come back from the lab. Genetic results will only be disclosed to you if you decide that you want to know this information. If genetic counselling is necessary, we will organize this for you. In addition, this study will improve our understanding of Parkinson's disease and may help us to provide the means for the creation of better drugs to treat this disease.

What if something goes wrong?

The University of Exeter has insurance cover in place to cover its legal liability for injury or illness arising from this study. If you are following a private insurance scheme, you should notify your insurer that you are taking part in this study. If you are harmed due to someone's negligence, then you may have grounds for a legal action. In case you are harmed for negligence during or as consequence of procedures carried out by NHS staff, for example because of blood sample collection, NHS indemnity scheme will apply.

Will my taking part in this study be kept confidential?

The University of Exeter is sponsor for this study based in the United Kingdom. We will be using information from you and your medical records in order to undertake this study and will act as the data processor for this study. This means that we are responsible for looking after your information and using it properly.

In 2018 regulatory changes in the way that data is processed came into force, with the EU General Data Protection Regulation 2018 (GDPR) and the Data Protection Act 2018 (DPA 2018). Since the UK left the EU, the key principles of EU GDPR have been adopted in the UK GDPR (a 'UK-only' version) and the DPA 2018 still applies.

The University of Exeter terms its lawful basis to process personal data for the purposes of carrying out research as being in the 'public interest'. The University

continues to be transparent about its processing of your personal data and the participant information sheet should provide a clear explanation of how your data will be collected, processed, stored and destroyed. If you have any queries about the University's processing of your personal data that cannot be resolved by the research team, further information can be obtained from the University of Exeter's Data Protection Officer via the link; https://www.exeter.ac.uk/aboutoursite/dataprotection/dpo/

If you have any concerns about how your data is controlled and managed for this study, then please contact the Sponsor Representative: Pam Baxter, Research Governance Manager (Contact details at the end of the information sheet).

There are two possible scenarios

(1) Enrolment from NHS clinic: patients enrolled at the Royal Devon University Healthcare NHS Foundation Trust (RDUH), where the identifiable information will be transferred to the University of Exeter

(2) Enrolment from non-NHS source: Patient enrolled at the University of Exeter, where the identifiable information will not be transferred to the RDUH Trust.

The University of Exeter will use your name and contact details to contact you about the research study, and make sure that relevant information about the study is

recorded for your care, and to oversee the quality of the study. Individuals from the University of Exeter or regulatory authorities may look at your medical and research records to check the accuracy of the research study, where it is relevant to you taking part in the research. The RDUH Trust will securely pass these details to the University of Exeter along with the information collected from you. The only people at the University of Exeter who will have access to information that identifies you, will be people who need to contact you regarding the research study or to audit the data collection process. The people who analyse the information will not be able to identify you and will not be able to find out your name or contact details.

Healthcare records may be in paper or electronic format and will typically include laboratory test results, radiological imaging (e.g. ultrasound scans, X-rays, MRI etc), clinical notes, routine observations, prescription charts (a list of medicines given to you) and other study-specific information which is collected as part of the research. Such information may be valuable to support your normal health care now, or in the future. If you are not already an NHS Trust patient, we will need to register you.

Although information collected as part of this study will be available in your medical records, a duty of confidentiality applies, and staff within the NHS may only access

your records if they have a legitimate and lawful reason to do so. If you have any concerns about this, please speak with your study doctor.

All information collected in this study will be kept strictly confidential and stored either on an encrypted password protected computer, or in a locked cabinet in a secure office at the University of Exeter, which can only be accessed by the research team. You will be allocated a unique participant number, to ensure your information will be protected and cannot be identified outside of the research team. Any personally identifiable information will be stored separately and securely from information obtained from the research, it will only be kept for 10 years after the study has finished and securely destroyed at the end of the 10 years.

Your rights to access, to change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained. To safeguard your rights, we will use the minimum personally-identifiable information possible.

The University of Exeter will keep identifiable information about you from this study for 10 years after the study has finished. We will use this information for research purposes only.

If you consent to take part in the research, with your permission we will write to your GP to inform him/her that you are participating in this study.

You can find out more about how we use your information by contacting the Chief investigator Prof. Marios Politis (m.politis@exeter.ac.uk) or the study team:

Study Doctor:

Dr Alana Terry

Email: a.terry4@exeter.ac.uk

Study Co-ordinator:

Mrs Holly Wright Tel: 01392 722935 (Available Tuesday-Friday) Email: h.wright3@exeter.ac.uk or neuro@exeter.ac.uk

All employees working in the NHS are bound by a legal duty of confidence to protect personal information and therefore any information you give during this study will be kept confidential. Should we be concerned about your health or wellbeing we may discuss this with your clinical care team/GP.

Your anonymised data may be used in future ethically approved research studies, we will ask for your consent for this. The information will not identify you and will not be combined with other information in a way that could identify you. The

information will only be used for the purpose of health and care research and cannot be used to contact you or to affect your care. It will not be used to make decisions about future services available to you, such as insurance.

The blood samples that you will donate will be kept securely and anonymously stored in biobanks. These may be used in future ethically approved research studies.

What will happen to the results of the research study?

The results of the research are likely to be published in a peer-reviewed scientific journal. You will not be identified in any report/publication.

If you wish, feedback will be sent to you from the research doctor with the results, which will be in a manner understandable to a non-medical person.

Who is organising and funding the research?

The study is funded by City Electrical Factors and sponsored by the University of Exeter.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given a favorable opinion by the London - Bromley.

Contact for Further Information

If you have any questions or there is anything you wish to discuss please contact your local research team in the first instance:

Exeter

Name: Holly Wright

Job Title: Research Project Manager

Email: h.wright3@exeter.ac.uk or neuro@exeter.ac.uk

Telephone: 01392 722935

Or the Chief Investigator Prof. Marios Politis (m.politis@exeter.ac.uk) or the study team:

Study Doctor:

Dr Alana Terry Email: a.terry4@exeter.ac.uk

Study Co-ordinator:

Mrs Holly Wright Email: h.wright3@exeter.ac.uk or neuro@exeter.ac.uk Tel: 01392 722935 (available Tuesday – Friday)

Sponsor Representative:

Ms Pam Baxter

Research Governance Manager

University of Exeter

Research Ethics and Governance Office, Lafrowda House, St Germans Road,

Exeter, Devon, EX4 6TL Tel: 01392 723588 http://www.exeter.ac.uk/cgr/researchethics/

The study team is located at the London Offices, University of Exeter College of Medicine and Health, Translation and Innovation Hub, Central Working 4th Floor, 80 Wood Lane, White City, London, W12 0BZ.

If you agree to participate in this study, please sign the consent form. You will be given a copy of the information sheet and a signed consent form to keep for your records.