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NHS Foundation Trust

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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.

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 individuals' 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 or impacts the course 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 progression.

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 King's College Hospital (KCH) premises for clinical assessments. KCH is a world-renowned centre in the study of neurodegenerative diseases.

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

In total, this study will last for 12 months. During this time, there will be two assessments that will need to be performed in the clinic and two assessments that will be done at home.

If you experience any distress during the study, including worsening of any pre-existing 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:

Baseline Clinic Visit 1

The visit will last up to 1 hour and will take place within the KCH 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 Clinical Research Facility of the NIHR-Wellcome Trust at King's College Hospital of 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).

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. You will be requested to wear this device for 14 days and, will be asked to send it back to King's College 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 eight 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 Baseline Visit

At home, you will wear the Actigraph for 14 days and complete some questionnaires and tests that are available on the website. It will take about one hour to complete these tests and questionnaires for the home baseline visit, and for the subsequent visit. The online software 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 King's College Hospital, 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.

Clinic Follow-up (12 months):

12 months after the first visit, we will ask you to come back to the clinic and repeat the clinical examination. This time, there will be no need to provide a blood

sample. Again, you will be given the Actigraph and will be instructed on how to use it for 14 days and post it back to the Centre in a pre-paid envelope.

Home Follow-up (12 months):

At home, you will wear the Actigraph for 14 days and perform the same online questionnaires and tests as before. 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.

Summary of steps

Clinical Baseline Visit 1	**Home Baseline Visit 1**	**Clinical Follow-up Visit at 12 months**	**Home Follow-up Visit at 12 months**
Screening assessment and consent form Clinical assessment (about 20 minutes) Blood sample (up to 15 minutes)	Performance of the online neuropsychological tests, and questionnaires Wearing of the	Clinical assessment (about 20 minutes) Instructions on how to use the Actigraph Instruction on how to use the online	Performance of the online neuropsychological tests, and questionnaires Wearing of the

Instructions on how to use the Actigraph Instruction on how to use the online assessment	Actigraph for 14 days	assessment	Actigraph for 14 days

We will reimburse you and your carer for the transportation costs to and from hospital and will provide refreshments throughout your visit. 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?

King's College London holds insurance policies, which apply to this study. If you experience serious and enduring harm or injury as a result of taking part in this study, you may be eligible to claim compensation without having to prove that King's College London is at fault. This does not affect your legal rights to seek compensation. As this is NHS-based research, NHS insurance schemes apply throughout this study. In addition, 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 to take legal action. Regardless of this, if you wish to complain, or have any concerns about any aspect of the way you have been treated during the course of this study then you should immediately inform the investigators (Prof Marios Politis, marios.politis@kcl.ac.uk, 0207 848 5682, or Dr Gennaro Pagano, gennaro.pagano@kcl.ac.uk, 0794 980 5013, or Dr George Dervenoulas, george.dervenoulas@kcl.ac.uk, 0793 150 9277, or Dr Edoardo de Natale, edoardo.de_natale@kcl.ac.uk, 0750 374 1242, or Dr Giacomo Tondo, giacomo.tondo@kcl.ac.uk, 0740 439 3149). The normal National Health Service complaint mechanisms are also available to you. Our Patient Advice & Liaison Service is located at King's College Hospital, Ground Floor Hambleden Wing, near the main entrance on Bessemer Road. Opening hours: Mon-Fri 9 am to 5 pm. Tel: 0203 299 3601. If you are still not satisfied with the response, you may

contact the King's College Hospital Research and Development office Tel: 0203 299 1980, or the Institute of Psychiatry Tel: 0207 848 0251, Fax: 0207 848 0147.

Will my taking part in this study be kept confidential?

All information collected about you during the course of the research will be kept strictly confidential. Any information about you that leaves the hospital will have your name, address and any other identifying details removed so that you cannot be recognized from it.

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 and in an event of any incidental findings.

King's College London is the 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 controller for this study. This means that we are responsible for looking after your information and using it properly. King's College London will keep identifiable information about you for 10 years after the study has finished.

Your rights to access, 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.

KCH will collect information about you for this research study from KCL. KCL will not provide any identifying information about you to KCH. We will use this information for research purposes only.

This 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.

You can find out more about how we use your information by contacting Dr Gennaro Pagano on 0794 980 5013 or Dr Giacomo Tondo, on 0740 439 3149 or Dr George Dervenoulas on 0793 150 9277 or Dr Edoardo de Natale on 0750 374 1242 or Prof Marios Politis on 0207 848 5682.

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 the Michael J. Fox Foundation for Parkinson's Research, sponsored by King's College London and co-sponsored by King's College Hospital NHS Foundation Trust.

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 phone Dr Gennaro Pagano on 0794 980 5013 or Dr Giacomo Tondo, on 0740 439 3149 or Dr George Dervenoulas on 0793 150 9277 or Dr Edoardo R. de Natale on 0750 374 1242 or Prof Marios Politis on 0207 848 5682. They will be your point of contact throughout the duration of the study. You can contact any of them for anything related to the study procedures 9am to 5pm, Monday to Friday (not including bank holidays). You can also contact them if you wish to withdraw from the study. Additionally, the Patient Advice and Liaison Service of KCH can be

contacted on 0203 299 3601, 9am to 4.30pm, Monday to Friday (not including bank holidays).

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