Profiling Parkinson’s disease

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Observational non invasive

Summary

ID

NL-OMON21445

Source
NTR

Brief title
ProPark

Health condition

Parkinson's disease

Sponsors and support

Primary sponsor: Amsterdam UMC, location VUmc
Source(s) of monetary or material Support: ZonMw (40-46000-98-101) and commercial and non-commercial partners (AbbVie Pharmaceuticals BV, Centre of Human Drug Research, Hoffmann-La Roche Ltd, Hersenstichting, Lundbeck A/S, Parkinson Vereniging, PHARMO Institute NV, Stichting Alkemade-Keuls, Stichting de Merel)

Intervention

Outcome measures

Primary outcome

Main clinical outcomes related to characterization of ADRs
The main endpoints of this part of the study are the occurrence of the following ADRs and their potential relation with genetic markers. The occurrence of the ADRs are defined as follows:

- For excessive daytimes sleepiness: a score ≥5 on the daytime sleepiness (DS) section of the SCOPA-SLEEP;
- Sleep disruption (SCOPA-SLEEP domain sleeping at night ≥7, wearables*(restlessness during sleep))
- For separate impulse control disorders (ICDs): scores ≥6 (gambling), ≥7 (eating, hobbyism/punding), ≥8 (buying, sex) on the related sections of the QUIP-RS; for the combined ICDs: a score ≥10 on the total score.
- Presence of hallucinations: defined as a score ≥ 1 on items 2-13 of the SAPS-PD.
- Presence of dyskinesia's: defined as a score ≥1 on item 4.1 of the MDS-UPDRS & wearables*.
- Presence of motor fluctuations: defined as a score ≥1 on item 4.3 of the MDS-UPDRS & wearables*.
- Presence of orthostatic hypotension: defined by a fall in systolic blood pressure of at least 20mm Hg or diastolic blood pressure of at least 10mm Hg when a person assumes a standing position.

*The outcome features derived from the wearables are not yet available, as these will be developed by means of machine learning algorithms after completion of the entire dataset. Due to the nature of the machine learning algorithm, we cannot indicate which outcome features will be identified by the algorithm as most indicative of the presence of ADRs (i.e. dyskinesia's, sleep disruption and motor fluctuations).

Main clinical outcomes related to phenotypic characterization(disease severity and progression) as measured along two axis:

I. Predominately non-dopaminergic symptoms:
- Cognition
- Global cognition: Montreal Cognitive Assessment
- Visuospatal functioning (Pentagon drawing;)
- Depression (Beck Depression Inventory-II)
- Apathy (Apathy Evaluation Scale for Parkinson Disease (AES-12PD))
- Anxiety (Parkinson Anxiety Scale)
- Postural instability and gait disorder(PIGD) (PIGD items from the MDS-UP-DRS)
- Autonomic dysfunction (SCOPA-AUT)

II. Dopaminergic symptoms (MDS-UPDRS score; except items on PIGD)

Wearables
The outcome features derived from the wearables are not yet available, as these will be developed by means of machine learning algorithms after completion of the entire dataset. Due to the nature of the machine learning algorithm, we cannot indicate which outcome features will be identified by the algorithm as most indicative of disease severity and progression.

Main biomarkers related outcomes
Blood
- Serum
- Total α-syn levels

- Plasma
- Total α-synlevels
- Whole blood
- Hemoglobin, red blood cell count

Skin
- Percentage α-syn immunostaining in 5 serial 6 □m-thick sections of paraffin-embedded skin biopsy

Secondary outcome

Biobank containing comprehensive and uniformly acquired longitudinal clinical data and biological samples for identification and validation of biomarker panels and data-driven approaches to unravel heterogeneity in the Parkinson's phenotype (i.e. rate of progression, cognitive and neuropsychiatric impairment and motor dysfunction), treatment response and occurrence of ADRs

Study description

Background summary

Rationale: Pharmacologic treatment of Parkinson's disease (PD) is mainly aiming to alleviate motor or neuropsychiatric symptoms and does not alter disease progression. Treatment follows a "one-size-fits-all" approach and does not consider genetic factors underlying between-patient differences in treatment response and susceptibility to adverse drug reactions (ADRs).

Primary objective: To evaluate the role of existing and novel quantitative biomarkers in understanding the heterogeneity in the Parkinson's phenotype (i.e. rate of progression, cognitive and neuropsychiatric impairment and motor dysfunction) and predicting treatment response as well as the occurrence of ADRs over a three-year period.

Secondary Objective: To develop a biobank containing comprehensive and uniformly acquired longitudinal clinical data and biological samples for identification and validation of biomarker panels and data-driven approaches to unravel heterogeneity in the Parkinson's phenotype (i.e. rate of progression, cognitive and neuropsychiatric impairment and motor dysfunction), treatment response and occurrence of ADRs.

Study design: longitudinal cohort study

Study population: 1250 patients diagnosed with PD with a disease duration of less than 10 years (since diagnosis), as well as 265 healthy, age and gender-matched controls.

Main study parameters/endpoints: main study parameters are biomarker concentrations (i.e. blood & feces), skin alpha-synuclein (α-syn) aggregation, treatment response, ADR

occurrence and cognitive and neuropsychiatric scores.

Nature and extent of the burden and risks associated with participation, benefit and group relatedness: Participants are invited to come to one of the study sites in Leiden (LUMC), Amsterdam (Amsterdam UMC, location AMC or VUmc), Rotterdam (Erasmus), Utrecht/Woerden (Antonius) or Amersfoort (Meander) for 2 hours of data collection (annually at T0, T1, T2 and T3). Additionally, these visits come with a 35 min (at T1, T2, T3) to 50 min (at T0) phone interview, 145 min (T1, T2, T3) to 160 min (T0) online questionnaires and one week of wearable sensor data collection at home (T0, T1, T2 and T3). The semi-annual follow-ups (T0.5, T1.5, T2.5) consist of a phone interview of 10 min, 115 min of online questionnaires and 1 week of wearable sensor data collection. Controls will be assessed twice (T0 and T2). All clinical study assessments are not part of standard clinical practice but are generally well tolerated. Only at Amsterdam UMC, location VUmc, a part of the clinical assessment and questionnaires at baseline are performed in standard clinical practice in de novo Parkinson patients (i.e. day screening). Assessments and questionnaires that overlap with ProPark (except for the MDS-UPDRS, SAPS-PD, Hoehn & Yahr and orthostatic hypotension) will not be administered twice. With approval from the participant, the results of the overlapping assessments and questionnaires from the day screening will be used for ProPark. Blood, feces (annually) and skin biopsies (only at T0 and T2 and only in 400 patients and 100 controls) will be collected. Blood sampling and skin biopsies come with a small discomfort. Risks associated with a venous blood puncture and skin biopsies include a local hematoma and, rarely, an infection. These risks will be minimized by the applied puncture procedures carried out by experienced physicians/nurses. Wrist and lower back sensors will be worn daily for up to 24 hours, twice a year for a one week period by patients (adding up to a total of 7 weeks throughout the study) and twice for a one week period by controls (adding up to a total of 2 weeks throughout the study).These small electronic devices are easily applied and pose no significant safety issues.

Study objective

-

Study design

Patients will be clinically assessed at baseline and during annual follow-ups in the hospital and at home (T0, T1, T2, T3) and during semi-annual follow-ups at home (T0.5, T1.5, T2.5).

Contacts

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Eligibility criteria

Inclusion criteria

Patients
In order to be eligible to participate in this study, a patient must meet ALL of the following criteria:
- Recently diagnosed with PD (N=625; time since Parkinson diagnosis ≤ 2 years) or not recently diagnosed with PD (N=625; time since Parkinson diagnosis > 2 & ≤ 10 years) (Time since Parkinson diagnosis (in years) made by a neurologist according to the Movement Disorder Society clinical diagnostic criteria for Parkinson's disease; In order to obtain a good representation of the PD population an even distribution with respect to gender and age (age categories: <55 years, 55-65 years and >65 years) in both patient groups, will be attempted;
- 18 years or older;
- Able to read and understand Dutch;
- Providing IRB-approved Informed Consent;
- Willing, competent and able to comply with all aspects of the protocol, including follow-up schedule and biospecimen collections.

Controls
- 18 years or older;
- Healthy (self-report);
- Similar distribution with respect to gender and age as the patient groups will be attempted;
- Providing IRB-approved Informed Consent;
- Willing, competent and able to comply with all aspects of the protocol, including follow-up schedule and biospecimen collections.

Exclusion criteria

A potential participant who meets ANY of the following criteria will be excluded from participation in this study:

Patients
- Patients who received brain surgery for Parkinson’s disease, patients who currently use levodopa continuous intestinal gel or patients who are currently receiving apomorphine treatment.
- Presence of co-morbidities that would hamper interpretation of parkinsonian disability, in

the opinion of the investigator;
- MoCa score of ≤16 (indicates dementia);
- Unwillingness to be informed of unexpected medical findings;
- Note: patients with a disease duration of ≤ 2 yrs, are excluded if:
- they are current, recent or past participant in The Personalized Parkinson Project (“de Parkinson op maat studie”) from Radboudumc.
- Patients with a disease duration of > 2 & ≤ 10 yrs, are only excluded if they are currently a participant in The Personalized Parkinson Project (“de Parkinson op maat studie”) from Radboudumc.

Controls
- A history of neurological disorders that affect the brain or central nervous system;
- Abnormal findings at general neurological examination;
- Unwillingness to be informed of unexpected medical findings.

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	29-07-2021
Enrollment:	1515
Type:	Anticipated

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Positive opinion

Date:	13-10-2021
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL9788
Other	METc VUmc : 2019.515

Study results