Method for predicting L-DOPA induced dyskinesia early onset and severity

Executive summary

A research group, with wide experience in Pharmacogenetics, has found a method for predicting the L-DOPA induced dyskinesia (LID) early onset and severity in patients with Parkinson's disease (PD).

The group is looking for a licensee, but other collaborations may be considered (e.g. financial resources).

Introduction

L-DOPA induced dyskinesia (LID) is characterised by the presence of abnormal, involuntary movements and it is one of the most frequent and disabling side effect observed in Parkinson's disease (PD) patients. Up to 80% of patients will experience LID within 5 years of treatment. Despite of this fact, L-DOPA still is the gold-standard treatment for this condition.

Even though, currently there is no procedure to predict which PD patient will be more susceptible to L-DOPA and will develop earlier and/or more severe LID.

Description

The invention is based on the fact that specific combinations of genetic variations (single nucleotide polymorphisms, SNPs) lead to differential sensitivity to L-DOPA in PD patients. Thus, these SNPs affect the early onset and severity of LID. All variations studied are found in genes involved in the mTOR signalling pathway, which is known to display an important role on PD.

Different assays have been performed in order to assess the effect of individual SNPs or their combination on LID early onset or severity. SNP genotyping was performed in a cohort of 1,819 subjects composed by 898 PD cases and 921 unrelated healthy controls (CT). Statistical analyses were performed for both independent and combined markers.

The present invention can help to avoid and/or mitigate this important side effect of L-DOPA, as well as the high costs that its treatment has for the public healthcare system. Mild to moderate effective strategies to improve LID do exist, such as intraduodenal L-DOPA infusion after surgical procedure. However, it has a weekly cost of 700 euros per patient, making it unaffordable for healthcare system.

Advantages

- The presence of a specific combination of these genetic variants in a particular patient allows the individualisation of L-DOPA treatment maximising its effectivity and reducing LID appearance.
- The invention could lead to an important economic saving for the institutions dealing with PD treatment costs.

Current stage of development

This invention is in a solid stage of development. Currently, there is an ongoing development plan to validate the candidate SNPs with a second, independent population of PD patients and controls.

Goal

The group is looking for a license agreement, but other collaborations may be considered.

Patent

Priority patent application filed

Reference

UBTT304

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