

Stimulation of the cerebellum for the treatment of Parkinson's disease and dyskinesia

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Name of Fellow

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Institution

Funder

ANR

Contact information of fellow

Country

France

Title of project/programme

Stimulation of the cerebellum for the treatment of Parkinson's disease and dyskinesia

Source of funding information

ANR

Total sum awarded (Euro)

€ 293,280

Start date of award

01/01/13

Total duration of award in years

4.0

The project/programme is most relevant to:

Parkinson's disease & PD-related disorders

Keywords

Research Abstract

Stimulation of the cerebellum for the treatment of Parkinson's disease and dyskinesia
We want to study the role of the cerebellum in Parkinson's disease and levodopa-induced dyskinesia to better understand how this region contributes to the development of these diseases, and how stimulation of this area could help to improve the symptoms.

Role of the cerebellum in Parkinson's disease and dyskinesia

Levodopa is currently the best therapy for patients with Parkinson's disease. This drug is a precursor of dopamine and its administration compensates dopaminergic deficits in the disease. In fact, it significantly improves the motor symptoms (mainly bradykinesia and rigidity) that are directly correlated with brain dopamine deficiency. However, after 2 years of treatment with levodopa, a third of patients develop severe motor complications such as dyskinesias, and up to 50% of patients suffer within 5 years after the start of treatment. Additional treatments should be introduced at this stage of the disease. Interestingly, repeated transcranial stimulation of the cerebellar cortex has recently been proposed for the long-term reduction of dyskinesias due to levodopa without reducing its benefits.

My project is focused on studying the role of the cerebellum in Parkinson's disease and exploring the therapeutic potential of repetitive cerebellar stimulation for the treatment of levodopa-induced dyskinesias. My specific questions are:

? Stimulation of the cerebellum affect levodopa induced dyskinesias?

? The cerebellum participates in pathological neuronal activity in Parkinson's disease?

Methods

To answer our questions, we use a multidisciplinary approach based on optogenetic methods (mouse line that expresses the channel-rhodopsin in Purkinje cells), behavioral (motor tests) and in vivo electrophysiology in the motor circuit in animal models of the disease.

Types:

Fellowships

Member States:

France

Diseases:

Parkinson's disease & PD-related disorders

Years:

2016

Database Categories:

N/A

Database Tags:

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