JPND research
EU Joint Programme – Neurodegenerative Disease Research

GBA-PARK

GBA1 mutations in Parkinson disease: clinical and biochemical prodrome, risk profile and pathogenetic modelling for therapeutic intervention

Changes in the GBA gene are found in approximately 10% of patients with Parkinson disease (PD). This represents the most important risk factor for PD discovered to date. Each GBA mutation carrier has up to a 30x increased risk for developing PD during his or her life. Research to date shows that individuals with the GBA mutation begin to show early changes in certain features such as loss of smell, subtle movement problems etc. Together with certain alterations in blood and spinal fluid, these clinical findings can be used to identify the group most at risk of developing PD amongst GBA mutation carriers. In addition, even PD patients without mutations of this gene show alterations of the activity of the GBA enzyme in the brain. This means that some of the lessons we learn from GBA carriers may be applicable to PD patients in general. This overlap of GBA-related PD to PD in general is particularly important in terms of developing therapies that might be applicable to all PD.

The project partners have developed large cohorts of GBA mutation carriers and propose to harmonize the study of these individuals across countries. This will provide a very large group with which to study the evolution of PD from its earliest stages before diagnosis and to develop a biomarker profile to identify those most at risk of PD. The researchers are also actively pursuing the study of how GBA mutations cause PD and have already identified a new potential drug class (small molecule chaperones) that have shown promise in cell and animal models of GBA-related PD. The project partners will collaborate in the use of these models, as well as samples taken from patients, to further develop and test these agents towards their use in clinical trials.

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Duration: 3 years

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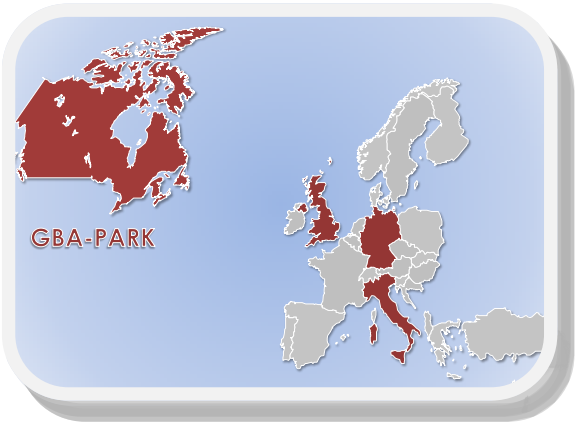

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