Methods

15 patients provided signed written consent to Abbott or verbal consent to the Clinician to be enrolled. The enrolled Abbott Infinity™ IPGs were securely mapped to authorized Clinicians. Software on programming devices was upgraded without requiring any hardware or firmware changes. Patients initiated remote sessions and Clinicians securely connected to the IPGs using unique logins and multi-factor authentication. Stimulation changes were synchronized with integrated video and a failsafe mechanism ensured continuity of therapy in case of network failure.

Results

Of 15 dB patients, 13 have undergone remote programming. The average time to establish connection has been less than 1 min. There has been no perceptible difference in running system checks and of the order of 1 s for stimulation changes. Both English and Spanish speaking patients reported no difficulties using the platform. In one patient dysarthria was resolved and in another patient battery replacement was recommended remotely.

Conclusions

Remote programming with this new platform is both clinically viable and meaningful. We expect to collect more objective metrics including impact on QoL, access, change in perceived quality of care with the adoption of this technology by both patients and neurologists.

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## 119577

### Alteration of lysosomal enzymatic activities as risk factor of Parkinson's disease associated with mutations in the GBA gene

Anastasia Bezrukova[a], Katerina Basharova[a], Konstantin Senkevich[ab], Elizaveta Gracheva[c], Irina Miliukhina[bc], Galina Baydakova[d], Ekaterina Zakharova[d], Sofya Pchelina[abe], Tatiana Usenko[ab], *[a]Petersburg Nuclear Physics Institute named by B.P.Konstantinov of NRC «Kurchatov Institute», Molecular and Radiation Biophysics Division, Gatchina, Russian Federation, [b]Pavlov First Saint Petersburg State Medical University, Researcher Center, Saint-Petersburg, Russian Federation, [c]Institute of Human Brain of RAS, Department of Neurology, Saint-Petersburg, Russian Federation, [d]Research Center for Medical Genetics, Hereditary Metabolic Diseases Laboratory, Moscow, Russian Federation, [e]Institute of Experimental Medicine, Department of Biochemistry, Saint-Petersburg, Russian Federation*

Background and aims

Mutations in the GBA gene, encoding enzyme glucocerebrosidase (GCase), are the most common genetic risk factor of Parkinson's disease (PD). Deficiency of GCase due to GBA mutations is not enough for PD development. Our hypothesis was that changes in lysosomal activities could be a potential trigger for onset of GBA-PD. The aim was to determine more insight into association of lysosomal enzymatic activities with PD status in GBA mutation carriers.

Methods

13 GBA-PD patients, 15 asymptomatic GBA mutations carriers (GBA-Carriers), 132 PD patients and 135 controls were recruited. Enzyme activities of GCase, alpha-galactosidase (GLA), acid sphingomyelinase (ASM) were measured by LC-MS/MS in dry blood spots.

Results

GCase and ASM activities were decreased in GBA-PD compared to PD ($p < 0.0001$) and controls ($p < 0.01$). GCase activity was decreased in GBA-Carriers compared to PD ($p < 0.0001$) and controls ($p < 0.01$). Positive correlation was found between GCase and GLA activities in GBA-Carriers ($r = 0.56$, $p = 0.03$), AMS and GLA activities ($r = 0.21$, $p = 0.02$) in PD and between ASM and GCase activities in controls ($r = 0.35$, $p < 0.0001$). Negative correlation was revealed between GCase and GLA activities in PD ($r = -0.41$, $p < 0.0001$). Higher GLA activity was associated with higher PD risk (OR = 1.650, $p = 0.013$) and higher GCase activity with lower PD risk (OR = 0.301, $p = 0.003$) among GBA mutation carriers.

Conclusions

We revealed decreased GCase activity in all GBA mutations carriers (GBA-PD patients, GBA-Carriers). Our data suggest that alteration of other lysosomal enzymatic activities, ASM and GLA, may be involved in launch of GBA-PD pathogenic mechanism. The study was supported by the Russian Science Foundation grant No. 19–15-00315.

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## 119578

### Mental flexibility in Parkinson's disease with central fatigue: Data from the frontal assessment battery

Andrea Maffucci[a], Caterina Pauletti[a], Daniela Mannarelli[a], Alessia Petritis[a], Chiara Minelli[b], Francesco Fattapposta[a], *[a]Sapienza University of Rome, Human Neurosciences, Rome, Italy, [b]Univesity of Padova, Radiology, Padova, Italy*

Background and aims

Central fatigue is defined as a reduced energy level or an increased perception of effort, often associated to a failure in initiating and maintaining tasks that require self-motivation. It is common in Parkinson's disease population and it has been hypothesized to be related to a dysfunction in the striato-talamo-prefrontal loop. The aim of the present study was to explore the association between fatigue and executive functions as index of integrity of the striato-thalamo-prefrontal loop.

Methods

Twenty-nine non-demented PD patients without fatigue - PDnF, 28 non-demented PD patients with fatigue - PDF and 26 age and sex-matched controls underwent an evaluation with the Frontal Assessment Battery (FAB), MMSE, PSQI, BDI, STAI Y1-2, PDQ-39. Differences between groups in FAB scores (total and subitems) were analyzed by means of Kruskal-Wallis test. Moreover, a correlation between fatigue and FAB was also analyzed.

Results

Overall parkinsonian population displayed worse performance than controls in frontal scores especially inhibitory control ($p = 0.008$) and sensitivity to interference ($p = 0.014$). PDF displayed significantly worse than PDnF in verbal fluency ($p = 0.05$). Fatigue severity inversely correlated with executive performance ($p < 0.001$).

Conclusions

Phonemic fluency tasks are thought to reflect the simultaneous engagement of several executive functions such as attention, working memory, retrieval, information processing. The association of central fatigue with a deficit in mental flexibility, could support the hypothesis that central fatigue is a reliable index of the impairment of higher executive functions needed in order to effectively assess costs and benefits related to adaptive decision-making behavior.

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