COGNITIVE TRAINING: AN ALTERNATIVE REHABILITATION PROGRAM IN PARKINSON’S DISEASE, A PILOT STUDY

M.E. Domellöf¹, E. Elgh², L. Forsgren¹

¹Department of Pharmacology and Clinical Neuroscience, Neurology, ²Department of Community Medicine and Rehabilitation, Geriatric Medicine, Umeå University, Umeå, Sweden

Introduction: The cognitive deficits shown in patients with early PD are related to the dorsal striatum, such as reduced flexibility and updating in working memory. Training these abilities in early stages of the disease could be beneficial. Previous studies in healthy adults have shown that a period of working memory training influence the binding potential of dopaminergic neurons and can lead to an activity increase in striatum related to increased cognitive performance.

Aims: The aim of the present pilot study is to investigate if training on updating will lead to better cognitive performance and to evaluate the effect in relation to dopamine function in individuals with newly diagnosed PD.

Methods: 3 male participants underwent a 5 week long training program. Dopaminergic function was assessed with iodobenzamide (IBZM) single photon emission computed tomography (SPECT) and a battery of neuropsychological tests was performed a year apart before and after the training period.

Results: In line with previous studies the training seems to have some effect on the trained tasks. The learning curves were similar to those seen in healthy elderly performing the same training program in a previous study. Individual data showed one person with weaker performance of tests measuring executive functions had a harder time to incorporate the training. Ongoing analysis of the IBZM data will reveal if there has been a change in dopamine function on an individual basis.

Conclusions: Due to the small sample the preliminary results are not statistically proven but the findings are promising.