

THERAPEUTIC RHYTHMIC AS A COGNITIVE INTERVENTION FOR PARKINSON'S DISEASE

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Objective:

There is substantial evidence for cognitive dysfunctions in Parkinson's disease (PD). Apart from generalized intellectual deterioration, dysfunctions in attention and memory have been reported. Previous studies demonstrated the efficacy of Music Therapy (MT) on motor and emotional symptoms of PD, but only few studies focused on the effect in cognitive functions.

The aim of the present study was to quantitatively test the motor and cognitive effect of MT in PD. We expected that the training and learning of sensomotor's specialist skills could have improved motor and cognitive performance in patients.

Material:

Cognitive functions were evaluated with the Montreal Cognitive Assessment (MOCA) for the global cognitive profile, the Rey Auditory-Verbal Learning Test (RAVLT) for memory functions (short-term and delayed recall), and the Visual Attention Task (VAT), with the computer controlled procedure, for the attentive functions. For the psychological section we assessed mood (Self-rating Depression Scale, SDS) and, anxiety (State-trait anxiety inventory, STAI-Y2). Severity of PD were evaluated with the UPDRS (part III).

Methods:

Thirteen idiopathic non-demented PD patients (men 6, women 7; [mean±SD] age 68,82±4,90 years; education 14,64±2,91 years) participated in 10 sessions of MT consisting in a specific technique finalized to rhythm learning. At baseline, after 10 MT sessions and, after four weeks patients were tested with standardized evaluation for motor and cognitive functions. Non parametric Wilcoxon Test was used to test the effect of the treatment.

Results:

Data from 11 patients were analyzed, two patients were excluded because they were involved in other treatments during the same period. Our results showed that MT produced a significant improvement in the VAT compared to baseline condition ($p=0.04$), but failed to change other cognitive functions (MOCA: $p>0.05$; RAVLT: $p>0.05$). The improvement in VAT disappeared after 4 weeks. No improvement in motor performance, neither psychological scales was found.

Discussion:

These preliminary findings encourage the use of the MT in associations to traditional cognitive rehabilitation therapies for PD patients. Previous data suppose that MT can produce a compensation of the cerebello-thalamo-cortical network leading to beneficial effects. Moreover, because MT involves multiple sensory modalities and motor planning, preparation, and execution systems we suppose that can be a multimodal stimulator for brain plasticity.

Conclusions:

Our findings supported the hypothesis that this innovative MT was able to stimulate attentive functions through music and rhythm. Future studies, including a greater number of patients and follow-up evaluations, are needed to confirm promising results of this study.

Demographic and clinical features of PD patients (mean±SD)

Age (years)	68.8 (4.90)
Sex (male/female)	5/6
Education (years)	14.64 (2.91)
Duration of disease (years)	7.45 (6.92)
UPDRS III (motor part)	24.8 (5.5)
H&Y stage	2.09 (0.3)
MMSE	28.12 (1.6)

Results

