Abstract

Title: The effect of rhythmic auditory stimulation on gait in patients with Multiple Sclerosis

Objectives: We aimed to evaluate the effect of rhythmic auditory stimulation on gait in patients with multiple sclerosis using GAITRite and Timed 25-Foot Walk test (T25FW). Furthermore, we investigated the effect of rhythmic auditory stimulation on the patients' subjective perception of their gait using the standardised MSWS-12 questionnaire.

Methods: Twenty-eight individuals were recruited for the study. The intervention group comprised 14 patients (2 men, 12 women, average age - 34 years) with the diagnosis of multiple sclerosis of ≤ 6.0 on Kurtzke Expanded Disability Status Scale. The control group comprised 14 healthy individuals (2 men, 12 women, average age - 36 yrs). All recruited individuals must have been older than 18 years old. The intervention group walked for 20 minutes a day for 6 weeks while listening to rhythmic music with cadence set 15% higher than the cadence of their gait. The control group had no intervention. Individual gait parameters in both groups were measured before and after the 6 weeks using the GAITRite device. The following parameters were analysed: step duration, step length, step velocity, cadence, length of double support, length of single support. Walking speed was measured using the T25FW. Subjective perception of patients' gait was measured by the MSWS-12 questionnaire.

Results

We report that rhythmic auditory stimulation autotherapy resulted in a significant increase in walking speed in patients with multiple sclerosis (p=0,00009), as well as in a significant improvement in subjective perception of their gait (p=0,001).

Key words: Multiple sclerosis, rhythmic auditory stimulation, gait, GAITRite, T25FW, MSWS-12