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Treadmill training in Parkinson's patients after deep Brain stimulation: Effects on Gait kinematic

Objective: To evaluate gait kinematic parameters in patients with PD with bilateral subthalamic nucleus DBS before and after of 2 gait training protocols.

Design: 12 patients completed the protocols (age: 60.9 ± 10.6 years; disease duration: 20 ± 7 years; and time since DBS surgery: 20 ± 4 months). The same set of patients underwent 2 trainings protocols and 4 gait analysis (before and after each training). They received 8 weeks of treadmill training without body weight support (16 sessions) in conjunction with physiotherapy program followed by 6 weeks of wash out period, followed by 8 weeks of body-weight-supported treadmill training in conjunction with a same physiotherapy program. The Gait Kinematic Analysis involved 8 infrared cameras that detected 19 reflective spherical markers attached in limb lower of patients. Statistical analysis used the Wilcoxon test (p ≤ 0.05).

Results: Both the training no showed significant differences in linear variables. As the angular variables, only training with support showed significant increase of ranges of motion: pelvis tilt, obliquity and rotation amplitude; hip adduction-abduction and rotation amplitude; percentage of peak flexion in swing phase; foot progression amplitude.

Conclusion: The body weight supported treadmill training may promote increase of mobility of lower limbs during gait and it could be a targeted intervention for PD patients treated with DBS.

Speaker Biography

Luna NMS has completed her PhD and Master degree in biomechanics at University of São Paulo, Postdoctoral in aging and Parkinson´s Disease at University São Judas Tadeu. Physical therapist, with specialization in Sport Traumato-Orthopedics at Federal University of São Paulo. Professor at University Anhembi Morumbi and pos grad teacher in University Estácio de Sá. She also works as a researcher in the following fields: Gait training; Cognition and Parkinson´s Disease.

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