P27

Gait alteration in dystonic patients

Miriam Caterino[1], D. Calderone[2], G. Cesarelli[3,4], A.M. Ponsiglione[2], P. Barone[1], R. Erro[1]

[1]Department of Medicine, Surgery and Dentistry "Scuola Medica Salernitana", University of Salerno, Baronissi, Salerno, Italy
[2]University of Naples Federico II, Department of Electrical Engineering and Information Technology, Naples, Italy
[3]University of Naples Federico II, Department of Chemical, Materials and Production Engineering, Naples, Italy
[4]Istituti Clinici Scientifici Maugeri IRCCS, Pavia, Italy

Introduction: Dystonia is a movement disorder characterized by sustained or intermittent muscle contractions causing abnormal, often repetitive, movements, postures, or both [1]. Preliminary evidence have suggested the presence of subclinical gait impairment in patients with cervical dystonia [2].

Objectives: To analyse the pattern of gait in patients with focal/segmental cranio-cervical dystonia and compare it with healthy controls (HC) matched for age.

Methods: Patients were evaluated with the Fahn-Marsden dystonia scale (F-M) and underwent a gait analysis using the BTS GaitLab system according to Davis Protocol in order to extract spatial and temporal gait parameters. Davis Protocol consists of four phases: anthropometric measurements, positioning of reflective markers on the patient, standing phase and walking phase. The Mann-Whitney U-Test was used to verify differences between patients and HC. A significance level of 0.05 was adopted.

Results: 8 patients (3M, 5F) with a mean disease duration of 14.5 ± 12.7 years, F-M total movement scale of 11.19 ± 5.9, F-M total disability scale of 2.25 ± 1.91, and 6 HC were enrolled. Patients performed worse than HC. Significant differences were found in cycle duration (p-value < 0,01), stance duration (p-value = 0,02), stance phase (p-value = 0,01), double support phase (p-value = 0,03) and mean velocity (p-value = 0,04).

Conclusion: We found significant differences between patients and HC in terms of gait speed, confirming a previous study [2]. We additionally found other significant differences such as increased cycle duration and stance phase, which may suggest a gait uncertainty in patients with dystonia. Additional analyses are underway to correlate demographic and clinical features of patients with their gait abnormalities.

References:

[1] Albanese A. et al. Phenomenology and classification of dystonia: a consensus update. Movement disorders vol. 28,7 (2013): 863-73.
[2] Esposito M, Dubbioso R, Peluso S, Picone A, Corrado B, Iammarone CS, Allocca R, Manganelli F, Santoro L, Fasano A. Cervical dystonia patients display subclinical gait changes, Parkinsonism and Related Disorders (2017).