Results Twenty-two patients with a mean age of 48.2 ± 12 years and a mean EDSS of 4.2 (median 4.7). At 6 weeks, spatiotemporal parameters and the results of the 6MWT were not significantly different even though we observed a significant improvement for the GAS, the MSWS-12 score (P=0.015), and the TUG Test (P=0.003). However, at 3 months, there was a significant benefit on injected (0.005) and non-injected (0.01) step length measured by GaitRITE but not on support distribution (0.18; 0.38). This may explain the decrease in gait fatigability and the increase of speed on the 6MWT (0.02), although neither the TUG Test nor the MSWS-12 Scale showed improvement. Eighty percent of patients had reached their objective on GAS.

Discussion – conclusion These results confirm the interest of toxin as a treatment for focal spasticity of the triceps surae with a significant improvement of gait. Further studies are needed to clarify guidelines for administration (dosage, intervals). The best results on gait parameters are obtained after 3 months, confirmation of the hypothesis of central effect of toxin. Botulinum toxin should probably be discussed early in the management of spasticity in MS patients.

Keywords Multiple sclerosis; Gait; Toxin; Spasticity; Triceps surae

Disclosure of interest The authors have not supplied their declaration of competing interest.

http://dx.doi.org/10.1016/j.rehab.2017.07.045

CO169

The effect of Fampridine (4-aminopyridine) in physical activity during weekdays and weekends in persons with multiple sclerosis

Yoshimasa Sagawa ^{1,*}, Eric Watelain², Thierry Moulin³, Pierre Decavel¹

¹ Laboratory of clinical functional exploration of movement, university hospital of Besançon, Besançon, France

² LAMIH UMR CNRS/UVHC 8201, university of Valenciennes, Valenciennes, France

³ Department of neurology, university hospital of Besançon, Besançon, France

* Corresponding author.

E-mail address: sagawajunior@gmail.com (Y. Sagawa)

Objective Fampridine (4-aminopyridine) improves walking in persons with multiple sclerosis (PwMS) in a standardized context. However, little is known about its impact on PwMS's physical activity in a real context. Indeed, the International Classification of Functioning Disability and Health defines the performance as a reflection of what an individual does in his/her life, providing crucial information on how she/he interacts with his/her environment. The aim of our study was to determine if Fampridine has an impact on physical activity of PwMS in their real-life environment during weekdays and weekends.

Material/patients and methods In this monocentric open label trial, 42 PwMS (mean [SD] age: 51.2 [12.6] y) and 16 healthy persons (47.9 [7.6] y) were included. The level of physical activity in reallife condition was measured with accelerometers during weekdays and weekends before and after 14 days of Fampridine treatment prescribed according to guidelines of the French Health Products Safety Agency (10 mg twice daily).

Results For PwMS after Fampridine treatment, the only significant difference was the average number of counts on the Sunday (P=0.03, d=0.3). For the comparisons among weekdays, Saturday and Sunday, no significant difference was found for all parameters studied. For the comparisons between groups, PwMS had a number of counts that was significantly smaller than the control group even after Fampridine treatment ($P=[0.04-10^{-4}]$). However, after Fampridine treatment, the effect sizes decreased for all parameters, especially for the Sunday (before d = 1.2, after d = 0.7 SD).

Discussion – conclusion Fampridine improved the level of activity on the Sunday in PwMS. Fampridine did not change the level of activity between weekdays and weekends for the PwMS group, although there was a decrease in the difference between PwMS and controls on the Sunday. These evidences confirms previous results suggesting modest benefits of Fampridine in the daily physical activity behavior of PwMS. Our results suggest that, despite Fampridine decreasing the difference between PwMS and healthy peers, other therapeutic strategies would be necessary to increase patients' level of activity in daily life.

Keywords Multiple sclerosis; Accelerometry; Motor activity; Gait

Disclosure of interest The authors have not supplied their declaration of competing interest.

CrossMark

http://dx.doi.org/10.1016/j.rehab.2017.07.046

CO170

Multiple sclerosis and clinical gait analysis Fampridine short- and long-term Fampridine effects: A systematic review

Yoshimasa Sagawa^{*,1}, Magaly Lecat¹, Eloi Magnin², Brigitte Lucas³, Vincent Gremeaux⁴, Pierre Decavel¹ ¹ Laboratory of clinical functional exploration of movement,

university hospital of Besançon, Besançon, France

² Department of neurology, university hospital of Besançon,

Besançon, France

³ Department of rehabilitation, centre Divio, Dijon, France

⁴ Department of rehabilitation, university hospital of Dijon, Dijon, France

* Corresponding author.

E-mail address: sagawajunior@gmail.com (Y. Sagawa)

Objective Gait impairment is one of the most common and most disabling symptoms in Persons with Multiple Sclerosis (PwMS). Fampridine (4-aminopyridine), a potassium-channel inhibitor, has demonstrated a positive effect on gait speed in PwMS with a gait disturbance. The effects on gait speed are well established after 14 days of treatment but the long-term effects have not yet been demonstrated. This study reviewed the short- and long-term effects of Fampridine on gait in PwMS.

Material/patients and methods This systematic review was conducted according to the PRISMA statement. Prospective, randomized, controlled and non-randomized studies can be found on MEDLINE, Embase and COCHRANE databases. Studies were considered long-term if treatment exceeded 28 days. This limit was chosen by doubling the treatment efficacy period of 14 days, as determined by the French National Authority for Health. Outcomes of interest were gait parameters after treatment.

Results From the 498 studies identified, 18 (2200 patients) fulfilled all eligibility criteria. Five of these articles reported significant improvement in the Timed 25-Foot Walk (T25FW) test after 14 days of treatment (range: 11.2–34.8%). Only three studies followed-up patients for > 1 year and one of them showed a non-significant 20% improvement in the T25FW. Only one study investigated spatiotemporal gait parameters other than speed (for > 3 months), reporting improved gait cadence (11%) and step length (12.8%).

Discussion – conclusion Fampridine seems to improve gait speed in PwMS, in the short and long-term. Further long-term studies are needed on related gait (spatiotemporal, kinematics) and functional parameters.

Keywords Multiple sclerosis; Gait; Walk; Fampridine

Disclosure of interest The authors have not supplied their declaration of competing interest.

http://dx.doi.org/10.1016/j.rehab.2017.07.047

