The effect of dropped foot stimulation on walking speed for People with Multiple Sclerosis (PwMS) – a longitudinal study
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Introduction
Functional Electrical Stimulation (FES) in the form of a dropped foot stimulator has been shown to assist with mobility1 and improved quality of life for people with Multiple Sclerosis (PwMS)2. The progressive nature of Multiple Sclerosis (MS) usually results in a loss of mobility3 and increased risk of falls4. The data collected from 351 PwMS attending the Birmingham FES Service demonstrates the maintenance of mobility with orthotic effect over four years even with deterioration of their MS. Orthotic effect is achieved by measuring speed at baseline without stimulator with speed at given time period using a simulator.

References

Method
In September 2014 clinical retrospective data from 351 PwMS provided with a dropped foot stimulator was collated, filtered and 257 analysed. Primary Group (PG) = 257 PwMS using FES for 18 week Subset (SS) = 50 PwMS using FES for 208 weeks

PwMS
Average age = 53 years
Time from diagnosis to starting FES
PG = 11.85 yrs, SS = 14yrs
Using a walking stick
PG = 238, SS = 45
PwMS who rejected Ankle Foot Orthosis
PG = 99, SS = 17

Medical device
PACE dropped foot stimulator purchased from OML using surface electrodes, footswitch trigger & wires.

Outcome Measures
10m walking test recorded at Baseline, 18 weeks and 208 weeks.
Frequency of trips, confidence of walks & pain of walking

Results
N = 37
N = 30
N = 50
4 year WkSp

Discussion and conclusion
Walking speed data shows the benefit of a dropped foot stimulator in increasing and maintaining speed of mobility for PwMS over a 4 year period. An increase in speed may relate to a safer walking pattern and improved confidence of mobility as shown in other studies5. The maintenance of safe mobility has the potential to enhance quality of life for PwMS and reduce the cost of healthcare. Further analysis of the data set is required.

The findings support the use of FES to provide a continued orthotic effect to maintain mobility for the deteriorating condition of MS.

References