Effects of a WalkAide Home Assessment Program on walking ability and Quality of Life in people with Multiple Sclerosis: a preliminary report

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Background: Foot drop, a common gait deviation in people with Multiple Sclerosis (MS), leads to impaired gait, balance and mobility. The WalkAide Functional Electrical Stimulation system (WA) has been shown to increase gait speed and improve walking ability and Quality of Life (QoL). **Purpose**: to determine the effect of a two week WA Home Assessment Program (WA-HAP) on gait speed, walking ability and QoL for those with MS related foot drop. **Methods**: Subjects completed a measure of gait speed (Timed 25 Foot Walk -T25FW) and two self-report measures: the MS Walking Scale (MSWS 12), a measure of the impact of MS on walking ability, and the MS Impact Scale (MSIS), a measure of the impact of MS on QoL. All measures were taken without the WA before the WA-HAP and with the WA after the two week program. Subjects wore the WA full time as a Neuroprosthesis during the two week program at home and in the community. **Results**: 10 subjects (7 female and 3 male) have completed the study to date. The mean age and mean duration of disease were 49.36 ± 11.32 and 9.89 ± 7.84 years respectively. Use of the WA resulted in a significant decrease in the time to complete the T25FW ($p = .008$), a significant decrease in both the Physical subscale ($p = .007$) and the total score on the MSIS ($p = .009$), and a significant decrease in the MSWS 12 standardized score ($p = .0004$). A near significant decrease was also seen in the Psychological subscale score on the MSIS ($p = .055$). **Conclusions**: This preliminary data suggests that use of the WA over a period of time as short as two weeks can significantly improve gait speed, decrease the impact of MS on walking ability and improve Quality of Life.

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