

Feasibility and Acceptability of Lee Silverman Voice Treatment for patients with hereditary ataxia

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Objective: This study aimed to assess the feasibility and acceptability of Lee Silverman Voice Treatment (LSVT) provided via Skype for patients with hereditary ataxia.

Background: Ataxic dysarthria due to hereditary ataxia affects all levels of speech production such as breath support, voice quality, articulation and prosody and can lead to significant communication impairment. Yet there are currently no evidence based speech treatments available for people with this disease. As a result, patients are often not offered treatment despite significant impact on communication related quality of life. This study investigated whether LSVT, a speech treatment focusing on increasing loudness, can improve communication in these speakers.

Method: 20 patients were recruited to the study and 19 completed treatment. Of these 17 had been diagnosed with Friedreich's ataxia, one with SCA6, one with SPG7, and one with unspecified cerebellar ataxia. An extended version of LSVT, consisting of 2 sessions a week over 8 weeks was provided via Skype. Two baseline (2 weeks apart) and two post-treatment measures (immediately following and 8 weeks after treatment) were collected. Materials included a range of speech tasks, questionnaires and a patient interview. Pre- and post-treatment comparisons focused on acoustic and perceptual speech parameters, including voice quality, breath support, intelligibility and naturalness, as well as impact and communication participation.

Results: Results indicate improvements in breath support and in voice quality for sustained vowels and connected speech, both for acoustic and perceptual measures. Most of these improvements were maintained longer term. No changes were evident for intelligibility or naturalness, however, patient reported outcomes were positive for most participants, both in the speech and psycho-social domains. There were no negative reports with regard to fatigue, and the majority of patients preferred Skype delivery over face to face provision.

Conclusion: The study suggests, along with a recent pilot study by Vogel et al. (2019) that speech treatment can have a beneficial impact on communication in patients with hereditary ataxia and should therefore be provided by clinicians.

This study has also been presented at the International Ataxia Research Conference, 14-16 November 2019, Washington DC, and the 2020 Motor Speech Conference, 19-23 February 2020, Santa Barbara, California

References: Vogel, A. P., Stoll, L. H., Oettinger, A., Rommel, N., Kraus, E.-M., Timmann, D., . . . Synofzik, M. (2019). Speech treatment improves dysarthria in multisystemic ataxia: a rater-blinded, controlled pilot-study in ARSACS. *Journal of Neurology*, 266(5), 1260-1266. doi: <https://doi.org/10.1007/s00415-019-09258-4>

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