Treating Festinating Speech with Altered Auditory Feedback in Parkinson's Disease--A Preliminary Report

E. Wang, L. Verhagen Metman

Speech symptoms in Parkinson's disease, termed as "festinating speech" or palilalia, have not been treated successfully either pharmacologically or surgically. This is a preliminary report of a large study testing the hypothesis that the use of altered auditory feedback (AAF) will improve speech intelligibility in patients with PD and festinating speech. Ten patients with idiopathic PD and speech impairment served as subjects. They all met the inclusion criteria and were tested during their "on" medication state. Blinded to the testing conditions, the subjects produced controlled monologue and reading samples, under six conditions (two baseline, two placebo and two feedback). The placebo and feedback conditions required subjects wear an in-the-ear device in one ear. The device was connected to a PC computer to control the settings. For each subject, an effective combination of AAF was determined and programmed. Except for the 1st baseline condition, the rest five testing conditions were randomized for each subject. The speech samples were digitized real time using a head-worn microphone. The samples were rated for speech intelligibility using the UPDRS-III item 18 and for speaking rate using a three-point scale by 20 graduate student clinicians. They were blinded to the testing conditions under which the speech samples were produced. The results show that speech intelligibility was consistently improved under the AAF condition for monologue but not for reading tasks. The speaking rate rating remained unchanged for the monologue task but statistically different for the reading task. The results were discussed in terms of speech motor control.