عنوان مقاله:

Correlation between Acoustic Parameters and Disease Severity and Duration in Patients with Multiple Sclerosis

محل انتشار:

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خلاصه مقاله:

Background: Since in multiple sclerosis (MS), changes in speech and voice quality often precede other signs and symptoms; early diagnosis of these changes is necessary. In this study, an acoustic examination of phonation subsystem was performed. Due to the progressive nature of multiple sclerosis, the aim of this study was to examine the correlation between acoustic parameters of voice quality and disease severity and duration. Methods:This descriptive-analytic study was performed on ۴۳ patients with multiple sclerosis. The disease severity was detected by a neurologist based on the Expanded Disability Status Scale (EDSS) for each patient. Acoustic analysis was performed during the production of sustained vowel /a/ and accordingly, the maximum phonation time (MPT), perturbation of the frequency (jitter), perturbation of amplitude (shimmer), the maximum and minimum frequency, and the highest and lowest intensity were evaluated. All the acoustic analyses were performed using PRAAT software. Data were statistically analyzed using Spearman's correlation coefficient by SPSS version ۲۱. Results:The lowest intensity showed a significant correlation with disease severity (P=۰.۰۰). Also, the highest and lowest intensity showed a significant correlation with disease duration (P=۰.۰۲۲ and P=۰.۰۰۲). Conclusion:One of the earlier symptoms of central nervous system impairment resulting from multiple sclerosis is changes in phonation subsystem and voice quality. These changes may appear at any clinical stages; however, the symptoms might get worse over time, with the progression of the disease. Therefore, immediate acoustic assessments and interventions can prevent more degradation of voice quality.

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