Speech characteristics associated with three genotypes of ataxia

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This study explores whether the speech characteristics of three genotypes of spino-cerebellar ataxia (SCA) form different clinical subgroups. Masters student of speech-language pathology judged the severity of speech samples that were previously obtained from speakers with ataxic dysarthria. The speakers had been genetically subgrouped into three genotypes: SCA1, SCA5, and SCA6. Four speech tasks were utilized in the rating study: diadochokinesis, word repetition, sentence reading and picture description. The speech samples were rated using two sets of parameters: primary (e.g., articulation, rate, rhythm) and secondary parameters (e.g., imprecise consonants, excess and equal stress, harsh voice). Speakers with ataxic dysarthria exhibited deficits in speech dimensions such as imprecise consonants, excess and equal stress, and prolonged phonemes. The characteristics, harsh voice and strained-strangled voice, differentiated ataxic subtypes. While diadochokinesis was more often rated as manifesting more severe impairment, word repetition, sentence reading and picture description were more sensitive than diadochokinesis in identifying the subgroups. These results support previous studies that characterize ataxic dysarthria, and lend further information about speech characteristics of genetic subtypes. The findings suggest that a speech dimension related to voice could function as a key parameter in differentiating subtypes of ataxic dysarthria.

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