Quantitative EEG Diagnostic of Dementia Subtype

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PORTO, PORTUGAL — Quantitative EEG shows promise as a clinical diagnostic tool that is sensitive enough to distinguish mild from moderate subcortical dementia, according to one study presented at the Fourth International Congress on Vascular Dementia.

The researchers used both visual and quantitative EEG to evaluate 31 patients with subcortical vascular dementia (mean age 72 years, 19 women) and 14 healthy controls (mean age 70 years, 8 women). Subcortical vascular dementia was diagnosed using the National Institute of Neurological Disorders and Stroke–Association Internationale pour la Recherche et l'Enseignement en Neurosciences (NINDS-AIREN) criteria and criteria developed by Timo Erkinjuntti of the University of Helsinki. Sixteen patients had mild cognitive impairment (19-23 on the MMSE) and 15 patients had moderate cognitive impairment (11-18 on the MMSE).

EEG was performed for 20 minutes with eyes closed. There was no significant difference between the visual EEG results for the two subcortical vascular dementia subgroups. There was a significant difference on the visual EEG results between the control group and both subcortical vascular dementia subgroups. Visual EEG results did not correlate with cognitive impairment as measured by the MMSE.

There were significant differences between the quantitative EEG results for the patients with mild and moderate dementia for all parameters. There was a significant correlation between all parameters and cognitive impairment, measured by the MMSE. The cholinergic deficit in subcortical vascular dementia may change bioelectric activity in ways not readily evident on visual inspection of EEG, but the calculational power of quantitative EEG is great enough to pick up these changes. ■

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