Neurobiology of Poststroke Depression

To the Editor:

Eriksson et al. find that the substantial proportion of stroke patients reporting depressive mood but not using treatment with antidepressants suggests that patient selection for treatment should be more precise. This may be accomplished by monitoring speech hesitation pauses (SHPs), which are behavioral correlates of mood. Neurobiological features are demonstrated by (1) the correlation of rate and variability in duration of SHPs with the left and right hemisphere, respectively; and (2) the association of the reduction of blood pressure with longer, less recurrent SHPs of about 2 seconds.

These responses are linked to the feeling of rhythmical and prefrontal cortex modulation of dopamine lateralized to the right hemisphere during the delayed alternation task. This hypothesis is supported by (1) optimum response organization and working memory at intermediate dopamine tone in a mediofrontalstriatal activation system, a study demonstrating that auditory training induces asymmetrical changes in cortical neural activity; (2) a report that pauses convey meaning beyond words; (3) the role of silence in expressing the inexpressible (Aldous Huxley); and (4) the much-quoted “Heard melodies are sweet, but those unheard are sweeter” (John Keats). Therefore, the analysis of SHPs on a time-base may be included in the development of a comprehensive measure of poststroke depression, optimal poststroke assessment intervals, and determination of a representative population reference.

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