ship. The head-position error score, reflecting distance from the target over time, achieved an overall accuracy of group prediction of 94\% (χ² = 13.2, p < 0.001) with a sensitivity of 100\%.

Our results suggest that the presence of frontal PWMLs in otherwise cognitively normal elderly subjects is associated with subclinical motor dysfunction. Of course, performance on tests of psychomotor function (such as digit symbol substitution and motor tracking) can also be affected by deficits in other functions, especially attention. However, subjects with PWMLs performed as well as those without PWMLs on nonmotor evaluations (e.g., digit span backward and paragraph recall), which also require attention for their execution. Thus, we believe that these frontal PWMLs are primarily interfering with motor/psychomotor activity.

Our findings raise a number of questions. Is the presence of frontal PWMLs partly responsible for the often-reported observation of psychomotor slowing with advancing age? Are PWMLs related to “failing” in the elderly? Do frontal PWMLs herald the subsequent development of a more widespread cognitive decline? A recent report linking the presence of PWMLs with both mild cognitive impairment and motor dysfunction in elderly subjects\(^7\) implies that the answer to this last question may be affirmative. Our findings point to a relation between the presence of PWMLs and motor deficits and suggest that patients with PWMLs be followed longitudinally with more comprehensive neuropsychological and neuroimaging evaluations to determine if they are at increased risk for the development of clinically significant motor dysfunctions or other disorders.

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References

Letters to the Editor

Disability and Rehabilitation After Stroke

To the Editor:

We read with great interest the recent articles by Dombovy et al\(^8\) on disability and rehabilitation after stroke and by Bernspång et al\(^9\) on the impact of motor and perceptual impairments on self-care ability in stroke patients. The two articles are important contributions in predicting the pattern of recovery from stroke as well as in health care and rehabilitation planning. While the authors have identified factors such as age, presence of comorbidities,\(^1\) and motor and perceptual impairments\(^2\) as indicative of worsening disability in stroke victims, we wish to draw attention to the presence of poststroke depression as an additional factor determining rehabilitation outcome after stroke.

In a recent study, we found that in-hospital depression was an important prognostic factor for physical impairment 2 years after stroke.\(^3\) In another study, we found that there was a significant positive correlation between depression and physical impairment 3 and 6 months and 1 and 2 years after stroke.\(^4\) In a 5-year study, Berrios et al\(^\text{al}^{9}\) found that long-term recovery in general neurologic patients (including those with strokes) who were depressed was significantly worse than in similar patients who were not depressed. Sinyor et al\(^\text{al}^{9}\) also noted that nondepressed patients showed a slight increase or no change in physical impairment with time whereas depressed patients had more functional impairment during the first 6 months after stroke. It is interesting to note that Dombovy et al\(^\text{al}^{8}\) found a stabilization of functional status only 6 months after the stroke. Since these early months seem critical to physical recovery, early-onset poststroke depressions may, by bringing about a lack of motivation to participate actively in rehabilitation therapy, exert a negative influence on physical recovery that extends beyond the duration of the depression itself.

We have also documented the existence of a dementia of poststroke depression that is manifested by poorer scores on many perceptual tasks.\(^7\) These tasks are quite similar to those used by Bernspång et al.\(^9\) Patients who are affected by poststroke depression exhibit a greater degree of cognitive impairment than do nondepressed stroke patients with similar lesions. Thus, although dementia following stroke can result from multiple etiologies such as lesion location, number, and volume, the presence of depression further amplifies the degree of dementia in these patients. Since approximately 30–40\% of patients suffer from poststroke depression immediately after stroke,\(^9\) the effect of depression may have significantly influenced the findings in both articles.

We recently compared the recovery in activities of daily living in patients with an in-hospital diagnosis of major depression, minor depression, and no depression using the Johns Hopkins Functioning Inventory (JHFI) as a measure of impairment. Patients were matched across the three diagnostic groups for degree of in-hospital impairment on the JHFI. At 2 years’ follow-up, nondepressed patients were significantly better than patients from either depressed group. These findings emphasize the need to evaluate stroke patients for depression as well as other variables before assessing the relative impact of these variables on long-term outcome and rehabilitation.

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Letters to the Editor 1055

Disability and Rehabilitation After Stroke

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References


The following is in response:

To the Editor:

We have read and discussed with considerable interest the comments made by Drs. Parikh, Robinson, and Price and agree that depression may well influence functional ability after stroke. The 30–40% prevalence of patients suffering from poststroke depression is in good agreement with results previously published from our institute.1 However, we also believe that motor control per se, as we have evaluated it, can be influenced by depression to only a very marginal extent.

In dementia, perceptual disturbances are generally acknowledged to occur reasonably frequently. We recently demonstrated that higher-order perceptual deficits, which occur extremely rarely in clinically healthy 60-year-olds, are not that uncommon in healthy subjects aged 80.

In two investigations2,3 in which we studied the prevalence of motor and perceptual impairments in a representative sample of all 4–6 year survivors of stroke, we found that depression was quite rare. Using the method of Folstein et al.,5 we excluded all patients with dementia and found that the model for motor and perceptual functions at follow-up was identical to that described in our article in Stroke.6 The predictive power of the model was still better at late than at early follow-up. Nevertheless, we agree with Parikh et al that many different aspects of function/impairment must be evaluated to give a comprehensive picture of poststroke patients.

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Disability and rehabilitation after stroke.
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