Upper Limb Function as an Outcome Predictor in Acute Stroke

To the Editor:

The article by the Early Prediction of functional Outcome after Stroke study (EPOS) investigators demonstrated how the active finger extension scale may be a strong predictor of recovery in patients with stroke. This finding has for a long time been considered a relevant item in daily clinical practice with the purpose of planning tailored rehabilitation programs. A diffused and useful tool for the assessment of distal limb motor function is the Canadian Neurological Scale. This scale is well known and validated among both neurological and physiatric settings with good interrater reliability. A multicentric study was designed for a similar purpose focusing on early cerebral Neurological Scale scores and involving 3 Italian intensive rehabilitation centers.

The EPOS study is the first prospective cohort study to show that accurate prediction of upper limb function is possible in the very acute phase of stroke by using simple bedside clinical tests but the overall impression, raised in our group, is that the study represents a selected population of minor strokes.

We fear that the results of the study may be hardly comparable with other experiences for many aspects: (1) factors modifying the natural history of the disease. In the study, 39 patients were treated in the acute phase with recombinant tissue plasminogen activator. A nearly 20% prevalence of recombinant tissue plasminogen activator-treated subjects may be considered an exceptional performance for many well-established stroke centers. Moreover, it is not clear which was the rehabilitative approach adopted in the treatment of the population; (2) study design/selection bias. Because no data concerning the disability of patients enrolled are available (ie, modified Rankin Scale), we speculate that the study results are consistent with a selection of milder clinical pictures (median National Institutes of Health Stroke Scale score 7; interquartile range, 4 and 14). Also, the Trunk Control Test scores (median, 74) reported at admission are coherent with this hypothesis focusing the attention on 2 candi-

date variables of the multiple regression model as shown in Table 2 of the article, sensory loss (National Institutes of Health Stroke Scale item 8; OR, 9.15; 3.36 to 24.89; P=0.001) and Bamford subtypes (0, total anterior circulation infarct/partial anterior circulation infarct; 1, lacunar infarct; OR, 10.56; 4.31 to 25.85; P=0.001). The authors reported that collinearity between the determinants included was defined if their correlation coefficient was >0.7 (as screening criterion for the multivariate model). We may argue that in the EPOS cohort, no correlation was found between the motor impairment scales adopted and the National Institutes of Health Stroke Scale scores, which is quite unexpected without considering a concomitant selection bias; (3) patterns of brain damage. A detailed imaging evaluation of the index event would provide data on frequent acute phase confounders that may bias the study. Brain edema or hemorrhagic transformations may lead to global sensory loss compromising the motor performance assessment of the subjects. Also, the lacunar strokes were more represented in the population and found, as expected, a good predictor of better performance at 6 months.

Disclosures

None.

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