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 Canadian 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 were coherent with this hypothesis focusing the attention on 2 candidate 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.

Francesco Corea, MD, PhD
Federico Scarponi, MD
Mauro Zampolini, MD
Brain Injury Unit
Department of Rehabilitation
Ospedale S. Giovanni Battista
Foligno, Italy

Upper Limb Function as an Outcome Predictor in Acute Stroke
Francesco Corea, Federico Scarponi and Mauro Zampolini

Stroke. 2010;41:e466; originally published online May 13, 2010;
doi: 10.1161/STROKEAHA.110.583252
Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2010 American Heart Association, Inc. All rights reserved.
Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://stroke.ahajournals.org/content/41/7/e466

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Stroke can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Stroke is online at:
http://stroke.ahajournals.org/subscriptions/