Diagnostic Test for Acute Cerebral Ischemia

To the Editor:

We read with interest the article recently published by Lynch JR et al.1 The authors report that the knowledge of 1 marker of glial activation (S100β), 2 markers of inflammation (matrix metalloproteinase [MMP]-9 and vascular adhesion molecule [VCAM]) and 1 marker of thrombosis (von Willebrand factor [vWF]) in the first 6 hours can help identify patients with acute cerebral ischemia who could benefit from thrombolytic treatment. Thrombolysis is an effective therapy for ischemic stroke candidates to thrombolytic therapy. However, an increased expression of VCAM, MMP-9, and vWF is expected in ischemic stroke candidates to thrombolytic therapy. Therefore, biochemical markers analyzed in the study of Lynch et al1 are upregulated in ischemic stroke but interindividual variability is large.

Criticicism about the extensive use of thrombolysis is based on the lack of diagnostic procedures demonstrating the presence of an arterial occlusion and potentially salvageable ischemic tissue. Neuroimaging techniques can provide information about the presence of penumbra tissue and vessel occlusion in hyperacute phase of stroke,2 but biochemical markers cannot.

It therefore appears that biochemical markers are time-consuming and are not helpful for the rational selection of patients as candidates for thrombolysis for several reasons. First, given the variability of serum levels of the different biochemical markers among patients, this method cannot absolutely confirm or reject ischemic stroke diagnosis. Also, given the lack of information obtained with these markers about the presence of penumbra tissue or vascular occlusion, their utility in the emergent evaluation of ischemic stroke is very limited. Obviously, as Lynch et al1 point out further studies will be necessary to validate the use of these markers in clinical practice. Since time is critical in acute stroke management, patients with suspicion of ischemic stroke should be urgently taken to a hospital with expert stroke care.

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