Thrombolysis in acute ischaemic stroke

Simone Vidale1 and Elio Agostoni2

1 Department of Neurology and Stroke Unit, Sant’Anna Hospital, Como, Italy
2 Department of Neurology and Stroke Unit, Niguarda Ca’ Granda Hospital, Milan, Italy

Correspondence to: Simone Vidale, M.D., Department of Neurology and Stroke Unit, Sant’Anna Hospital, Via Napoleona, 60, 22100 Como, Italy. E-mail: simone.vidale@hsacomo.org

Sir,

We read with interest the recent paper by Balami et al. (2013) concerning thrombolysis in stroke patients. In medicine, every procedure requires a careful evaluation of benefit-to-risk ratio, and thrombolysis is no exception. As reported by the authors, the selection of patients is crucial to obtain the best benefit with the lowest risk. Time to treatment is critical in this selection and the reduction of the avoidable delay represents the key factor in improving the number of potentially treatable patients. Optimal management of the acute phase could contribute to obtaining this result, with a pre-notification of single specialists involved in stroke care (from pre-hospital to in-hospital setting) (Fassbender et al., 2013). This facilitation might contribute to achieving the timing that is recommended for referral to clinical examination and multimodal stroke imaging. This instrumental evaluation has received, in recent years, a significant evolution in technology and a concomitant wide distribution. The use of CT or MRI angiography for extra- and intracranial arteries contributes to a better definition of the site of the arterial occlusion and the size of the clot. Therefore, the introduction of these investigations in selected patients during routine management could contribute in the facilitation of adequate and effective treatment (Costalat et al., 2011). Balami et al. (2013) report that the presence of isolated ataxia or hemianopia could represent a relative contraindication to intravenous thrombolysis. However, these symptoms are referred to the posterior circulation and for this reason related to a potentially high life-threatening risk. In these cases it might be useful to obtain an angiographic study of arteries by CT scan to evaluate the posterior circulation if arterial subocclusion/occlusion is suspected. Other emerging factors are the lipid profile or a concomitant use of statins. To date, some data have shown an increased risk of haemorrhagic transformation in patients using statins or with low levels of high-density lipoprotein cholesterol (Nardi et al., 2012). If these observations are confirmed, lipid profile may be another relative contraindication to thrombolytic treatment. Finally, concerning the efficiency of thrombolytic therapy, we must distinguish between a clinical and a radiological outcome. Despite a recanalization of the vessel in approximately half of patients, a clinical improvement does not occur in all patients. This condition can be summarized by the concept of the revascularization-outcome paradox (Cohen et al., 2013). Good clinical outcomes have not always been achieved with high rates of recanalization and may be due to futile recanalization, when the tissue is no longer viable. Another critical point is also represented by the reocclusion after an initial and successful recanalization. Therefore, two factors appear to be mandatory for a selection of patients: the time from symptom onset and the status of collaterals that supply the penumbra area. Taken together, we could reverse the title of the review and the aim of the future studies should be the science of patient selection in the art of stroke thrombolysis.

References


Cohen JE, Leker RR. Revascularization-outcome paradox: not only time and collaterals status, but also complete