Reviewer’s report

Title: Interleukin-10 facilitates selection of patients for systemic thrombolysis

Version: 2 Date: 8 January 2013

Reviewer: Francesco Brigo

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In this prospective study 595 patients with ischemic stroke within 12h from the event onset were studied, and 184 patients underwent thrombolysis (according to SISTMOST protocol). The main outcome was modified Rankin scale <3 at 3 Months. Serum levels of several cytokines were determined at admission. Furthermore, Authors evaluated the utility of two parameters, the Clinical-Diffusion mismatch (CDM; NIHSS score #8 & DWI lesion volume #25 mL) and Perfusion-Difussion mismatch (PDM; difference >20% between initial DWI and MMT lesion volumes) as surrogate of ischemic brain at risk of infarction.

Patients treated with t-PA with PDM had significantly higher IL-10 levels at admission (p<0.0001), whereas patients with CDM showed significantly higher levels of IL-10 (p<0.0001) and Glu and TNF-# (all p<0.05), and lower levels of NSE and active MMP-9 (all p<0.0001). Conversely, IL-10 # 30 pg/mL predicted good functional outcome at 3 months (specificity 88%, sensibility 86 %), and was associated with good outcome in both patients with PDM and CDM.

Authors concluded that IL-10 serum levels may be of help in facilitating the selection of patients with ischemic stroke and PDM/CDM for systemic thrombolysis.

Overall considered, the article is excellent both in its theoretical and methodological aspects.

I have only few discretionary revisions to suggest (that the author can choose to ignore, but which may be of interest for readers, especially for their implication in daily practice).

Results of this study are extremely intriguing, as they might have a direct application in (future) daily practice. Authors may comment about the feasibility of the measurements of molecular markers in real “daily“ practice: what about the costs and the time needed to obtain such measurements?

Authors may also further comment on the variables which may affect the levels of these markers (anemia, inflammations, infections, treatments).

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I declare that I have no competing interests.