



DEBATE

TNK has come to stay

Juan F. Arenillas¹

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Abstract

Recombinant tissue plasminogen activator (rt-PA) is the approved thrombolytic drug to treat acute ischemic stroke patients with significant disability within the first 4.5 hours after symptom onset. This drug has well known efficacy and safety limitations, such as low recanalization rate in large-artery occlusions and risk for hemorrhagic transformation, that have encouraged the development of new reperfusion therapies for stroke, including newer thrombolytic drugs. Another disadvantage is the need for i.v. perfusion during one hour, which leads to technical requirements. Tenecteplase (TNK) is a genetically modified variant of rt-PA with a higher specificity for fibrin and a longer half-life, which allows for a single bolus administration. It was chosen as the preferable thrombolytic drug for ST elevation myocardial infarction due to a lower rate of systemic hemorrhagic complications as compared with rt-PA. There is a growing body of evidence supporting a transition from rt-PA towards TNK also for acute cerebral ischemia. A randomized clinical trial conducted in ischemic stroke patients with acute large artery occlusion and evidence of salvageable tissue on CT perfusion, showed superiority of TNK over rt-PA in efficacy

and safety. Other clinical trials were based on plain CT and showed comparable efficacy and safety of rt-PA vs. TNK. Recently, the EXTEND-ia-TNK clinical trial has shown that TNK before endovascular therapy is associated with a higher incidence of reperfusion and better functional outcome as compared with rt-PA. After this evidence, in our center we have amended our protocol to start using TNK before thrombectomy when bridging therapy is indicated, while we wait for the results of EXTEND-TNK with a larger sample. Futile transfers for thrombectomy are a clinical and organizational problem. The easiness and rapidness of administration, together with a higher efficacy in the setting of large-artery occlusions amenable for endovascular therapy, make it a very attractive thrombolytic drug in the setting of drip-and-ship patients for endovascular therapy. Regarding the time window for administration, giving its favorable safety profile, RCTs such as TEMPO-2 are under conduct to test whether TNK could also be given within the first 12 hours in high-risk minor stroke patients. Transition from rt-PA towards TNK in acute ischemic stroke is already happening. Finally, economical arguments also favor TNK.

¹Stroke Program. Department of Neurology. Hospital Clínico Universitario, Valladolid, Spain

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