



DEBATE

Is IV rtPA in patients with LVO still beneficial?

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From the Lisbon Stroke Summit, Lisbon, Portugal. 5–6 April 2019.

Abstract

Several trials have shown that endovascular treatment (EVT) following intravenous alteplase (IVT) improves outcome of patients with acute ischemic stroke and a proximal intracranial occlusion. A meta-analysis of five randomized trials (Hermes collaboration, Lancet 2016), which also included patients with contraindications for IVT, showed that the effect of EVT on outcome is not influenced by IVT. The question arises whether IVT is of additional benefit to patients eligible for EVT. Some authors point out possible side-effects of IVT pretreatment. Especially the effect of IVT pretreatment to delay and increase hemorrhagic complications is often described as a potential problem. Others, direct attention to the potential benefit of IVT pretreatment to facilitate mechanical removal of thrombi and the dissolution of distal emboli which might develop during EVT. Reviews on observational studies on the subject present contradictory results, probably because of the many confounders in these observational studies. Like confounding by indication as direct mechanical thrombectomy patients are mostly treated outside the 4,5 hour time window from onset, while patients

treated with IVT pre-treatment are always treated within 4,5 hour. Results of randomized clinical trials (RCT's) are therefore needed. Currently, several RCT's are investigating EVT with or without IVT. The ongoing MR CLEAN-NoIV: Multi-center Randomized Clinical trial of Endovascular Treatment for Acute ischemic stroke in the Netherlands NO IV trials, the SWIFT DIRECT: Solitaire With the Intention For Thrombectomy Plus Intravenous t-PA Versus DIRECT Solitaire Stent-retriever Thrombectomy in Acute Anterior Circulation Stroke, the DIRECT-MT: Direct Intra-arterial Thrombectomy in Order to Revascularize AIS patients with Large Vessel Occlusion Efficiently in Chinese Tertiary Hospitals and the DIRECT-SAFE: A Randomized Controlled Trial of DIRECT Endovascular Clot Retrieval Versus Standard Bridging Thrombolysis With Endovascular Clot Retrieval will provide definitive answers on the potential additional clinical benefit of IVT pretreatment in LVO patients receiving EVT. Results of the DIRECT-MT are expected at the beginning of 2020, later that year followed by results of the MR CLEAN-NoIV study.

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Citation: Roos, Y. Is IV rtPA in patients with LVO still beneficial?. International Journal of Clinical Neurosciences and Mental Health 2019; 6(Suppl. 1):D1

Published: 04 April 2019



Open Access Publication Available at <http://ijcnmh.arc-publishing.org>

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