DEFUSE 3

Sheinberg DL, McCarthy DJ, Peterson EC, Starke RM. DEFUSE - 3: Reinforcing evidence for extended endovascular intervention time window for ischemic stroke. World Neurosurg. 2018 Feb 16. pii: S1878-8750(18)30335-8. doi: 10.1016/j.wneu.2018.02.064. [Epub ahead of print] PubMed PMID: 29458184 [1].

Prospective randomized Phase III multicenter controlled trial of patients with acute ischemic anterior circulation strokes due to large artery occlusion treated between 6-16 hours of stroke onset with endovascular thrombectomy therapy vs. control.

The primary endpoint, the modified Rankin Score, will be assessed at 3 months. The patients' participation in the study concludes at that time (3 months from stroke onset). The study will randomize up to 476 patients over 4 years. The purpose of DEFUSE 3 is to assess the safety and efficacy of thrombectomy in carefully selected patients in an extended time window. Only the devices listed in this protocol will be used. Selection of the specific device (or devices) is determined by the individual endovascular therapist.

Patients who meet the inclusion criteria will undergo either CT Perfusion/CT Angiogram or MR DWI/PWI/MRA studies prior to randomization. Patients who have evidence of an ICA or MCA M1 occlusion and a Target Mismatch Profile will be randomized in a 1:1 ratio to treatment with one or more DEFUSE 3 approved thrombectomy devices (only the devices listed in this protocol are approved for use in DEFUSE 3) plus standard medical therapy versus standard medical therapy alone. Patients who are enrolled, but not randomized, will receive standard therapy according to local guidelines. Baseline data, and information about early stroke therapies, will be captured for this group of patients.

Randomization of a maximum of 476 patients is planned. A novel adaptive design will identify, at interim analyses, the group with the best prospect for showing benefit from endovascular treatment, based on baseline core lesion volumes and the times since stroke onset. Interim analyses will be conducted at 200 and 340 patients, at which time the study may stop for efficacy/futility, or the inclusion criteria may be adjusted in the case of futility.

Endovascular thrombectomy for ischemic stroke 6 to 16 hours after a patient was last known to be well plus standard medical therapy resulted in better functional outcomes than standard medical therapy alone among patients with proximal middle-cerebral-artery or internal-carotid-artery occlusion and a region of tissue that was ischemic but not yet infarcted. (Funded by the National Institute of Neurological Disorders and Stroke; DEFUSE 3 ClinicalTrials.gov number, NCT02586415 .) [2].

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Albers GW, Marks MP, Kemp S, Christensen S, Tsai JP, Ortega-Gutierrez S, McTaggart RA, Torbey MT, Kim-Tenser M, Leslie-Mazwi T, Sarraj A, Kasner SE, Ansari SA, Yeatts SD, Hamilton S, Mlynash M, Heit JJ, Zaharchuk G, Kim S, Carrozzella J, Palesch YY, Demchuk AM, Bammer R, Lavori PW, Broderick JP,

Lansberg MG; DEFUSE 3 Investigators. Thrombectomy for Stroke at 6 to 16 Hours with Selection by Perfusion Imaging. N Engl J Med. 2018 Jan 24. doi: 10.1056/NEJMoa1713973. [Epub ahead of print] PubMed PMID: 29364767.