Endovascular Treatment for Acute Ischemic Stroke

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BACKGROUND
In patients with ischemic stroke, endovascular treatment results in a higher rate of recanalization of the affected cerebral artery than systemic intravenous thrombolytic therapy. However, comparison of the clinical efficacy of the two approaches is needed.

METHODS
We randomly assigned 362 patients with acute ischemic stroke, within 4.5 hours after onset, to endovascular therapy (intraarterial thrombolysis with recombinant tissue plasminogen activator [t-PA], mechanical clot disruption or retrieval, or a combination of these approaches) or intravenous t-PA. Treatments were to be given as soon as possible after randomization. The primary outcome was survival free of disability (defined as a modified Rankin score of 0 or 1 on a scale of 0 to 6, with 0 indicating no symptoms, 1 no clinically significant disability despite symptoms, and 6 death) at 3 months.

RESULTS
A total of 181 patients were assigned to receive endovascular therapy, and 181 intravenous t-PA. The median time from stroke onset to the start of treatment was 3.75 hours for endovascular therapy and 2.75 hours for intravenous t-PA (P<0.001). At 3 months, 55 patients in the endovascular-therapy group (30.4%) and 63 in the intravenous t-PA group (34.8%) were alive without disability (odds ratio adjusted for age, sex, stroke severity, and atrial fibrillation status at baseline, 0.71; 95% confidence interval, 0.44 to 1.14; P=0.16). Fatal or nonfatal symptomatic intracranial hemorrhage within 7 days occurred in 6% of the patients in each group, and there were no significant differences between groups in the rates of other serious adverse events or the case fatality rate.

CONCLUSIONS
The results of this trial in patients with acute ischemic stroke indicate that endovascular therapy is not superior to standard treatment with intravenous t-PA. (Funded by the Italian Medicines Agency, ClinicalTrials.gov number, NCT00640367.)