Endovascular Treatment Compared With Medical Treatment in Patients with Acute Ischemic Stroke: A meta-analysis of 1561 patients

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OBJECTIVE

Endovascular treatment for acute ischemic stroke is an integral item for comprehensive stroke centers. Randomized trials have evaluated the comparative efficacy of endovascular treatment with medical treatment; definitive evidence is lacking due to varying results.

METHODS

A search was made for randomized clinical trials comparing endovascular treatment with medical treatment including intravenous thrombolysis for acute ischemic stroke. A meta-analysis was performed. Outcomes compared included 3-month rates of survival, independent functional status (defined by modified Rankin scale of 0-2), and post-treatment intracerebral hemorrhage resulting in clinical deterioration.

RESULTS

We analyzed seven randomized trials totaling 1561 patients (821 randomized to endovascular and 740 to conventional treatment). The end point of 3-month independent functional status was significantly different between patients treated with endovascular treatment versus those treated with medical treatment (1509 patients analyzed; relative risk [RR], 1.3; 95% confidence interval [CI], 1.1-1.6; P = 0.002). The 3-month survival rate (1462 patients analyzed: RR, 0.9; 95% CI, 0.8-1.1; P = 0.3) was similar for endovascular treatment versus medical treatment. The post-treatment intracerebral hemorrhage rate was similar between endovascular and medical treatments (831 patients analyzed: RR, 0.8; 95% CI, 0.5-1.3; P = 0.4). In patients with initial National Institutes of Health Stroke scale (NIHSS) score of 17 or greater, endovascular treatment was superior to medical treatment in regards to rates of independent functional status within 3 months (708 patients analyzed: RR, 1.5; 95% CI, 1.1-2.2; P=0.02).

CONCLUSION

The 3-month survival rates in patients treated with endovascular treatment and those treated with medical treatment were not significantly different. The 3-month independent functional status rates in patients treated with endovascular and those treated with medical treatment were significantly different. Among patients with initial NIHSS score ≥17, there was a significantly higher rate of independent functional status among patients randomized to endovascular treatment suggesting a benefit in selected groups of patients.

Disclosure

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