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Cost information for thrombectomy devices used in the treatment of acute stroke

The list price for the four thrombectomy devices was not available. They are most commonly billed under the Medicare diagnostic related group (MS-DRG) codes numbers 23 and 24. In 2012, the rate of reimbursement was \$30,197 for MR-DRG 23 and \$20,456 for MS-DRG 24.

The search identified four cost analyses of thrombectomy devices in acute stroke.¹⁻⁴ The first⁴ study investigated patients ineligible for IV tPA and assumed that the devices would increase recanalization rates from 18% to 60%. They calculated that the cost of the initial hospitalization would be \$24,154 versus \$6,749 with standard therapy and their estimated cost per quality adjusted life year was \$12,120.

The second study³ compared mechanical thrombectomy to best medical therapy for patients presenting with a large vessel ischemic stroke more than three hours from symptom onset. Their estimated costs for the initial hospitalizations were \$19,220 for mechanical thrombectomy and \$4,686 for medical therapy if there was no symptomatic intracranial hemorrhage and \$28,087 and \$10,245 respectively if there was an intracranial hemorrhage. Their best estimate of overall cost-effectiveness was \$9,386 per quality-adjusted life-year.

The third study² evaluated the scenario of 68 year-old with a large vessel ischemic stroke who was eligible for IV tPA. Their estimated costs for the initial hospitalizations were \$20,534 for mechanical thrombectomy and \$8,408 for medical therapy if there was no symptomatic intracranial hemorrhage and \$29,534 and \$15,945 respectively if there was an intracranial hemorrhage. Their best estimate of overall cost-effectiveness was \$16,001 per quality-adjusted life-year.

Inputs for these three analyses were primarily derived from the Multi-Merci trial and the PROACT II trial.

The most recent cost analysis¹ compared IV tPA to a combination of IV tPA plus intra-arterial therapy or intra-arterial therapy alone in patients presenting with a large vessel ischemic stroke within 4.5 hours of symptoms onset. Combination therapy cost less and was more effective than intra-arterial therapy alone. The cost of the mechanical device was estimated to be €3847. Their best estimate of overall cost-effectiveness was €31,687 per quality-adjusted life-year at six months, but this dropped to €1922 per quality-adjusted life-year when a lifetime perspective was used.

All of the analyses called for large randomized trials to reduce the uncertainty surrounding key inputs to their models.



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