Endovascular treatments for acute ischemic stroke in adults

BlueCross BlueShield Association

Record Status
This is a bibliographic record of a published health technology assessment. No evaluation of the quality of this assessment has been made for the HTA database.

Citation

Authors' objectives
To evaluate and compare health outcomes following endovascular treatments with IA tPA or mechanical embolectomy in adults with acute ischemic stroke.

Authors' conclusions
The 3 RCTs published in early 2013 concluded that endovascular treatment is no more effective than IV tPA in reducing disability among patients with acute ischemic stroke treated 3 to 8 hours after symptom onset.1-3 Although specific aspects of these trials have been criticized, we identified no RCTs that demonstrate endovascular treatments produce better health outcomes. Use of newer FDA-cleared endovascular devices was allowed. A major limitation in generalizing from these studies is that the number of patients treated with each of these newer devices was small. Therefore, as noted by critics of the trials, evidence on the newest devices may not substantively impact the overall outcomes. If the newer devices are more effective than the older ones, the results might be dominated by the performance of the less effective, older device(s). How to incorporate evolving technologies is an issue often encountered when evaluating technologies. The trialists adopted a reasonable approach. Another major limitation is that the intervention comprised multiple versions of endovascular treatment, with specifics determined by treating physicians. In this sense, these are pragmatic trials and do not provide evidence on specific combinations of endovascular treatments or on individual endovascular treatments. In the 2 trials comparing older and newer mechanical devices, newer devices outperformed the older Merci® Retriever. However, to obtain a full picture, one would need to combine these data with information comparing the Merci® Retriever with the standard of care (eg, IV tPA), while accounting for differences in patient characteristics. RCTs comparing these newer devices with standard care are needed and are underway for Solitaire™ and the Penumbra System®. Randomization is important when comparing these treatments because factors other than the impact of the device affect acute ischemic stroke outcomes. These factors may include the degree of collateral circulation, the location of the occlusion, and other clot characteristics. Operator skill may also be a factor.

Final publication URL

Indexing Status
Subject indexing assigned by CRD

MeSH
Humans; Stroke; Endovascular Procedures; Brain Ischemia

Language Published
English

Country of organisation
United States

English summary
An English language summary is available.

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**AccessionNumber**  
32015000457

**Date abstract record published**  
07/04/2015