

Letters

COMMENT & RESPONSE

Stent Retrievers for Treating Anterior Circulation Acute Ischemic Stroke

To the Editor Touma et al¹ reported a comprehensive systematic review and meta-analysis of 5 randomized clinical trials evaluating the benefits and risks of stent retrievers in addition to recombinant tissue plasminogen activator (rtPA) for the treatment of acute ischemic stroke (AIS). The main conclusion of the study was that “the use of stent retrievers in conjunction with rtPA vs rtPA alone is associated with significant improvement of functional independence 90 days after AIS.”¹ However, as pointed out by the authors, all studies included in their meta-analysis selected only patients with anterior circulation acute ischemic strokes. Nevertheless, about 20% of all strokes and transient ischemic attacks occur in the posterior circulation arterial territory.² Posterior circulation arterial territories have proper characteristics that differ from anterior circulatory territories.² While the use of stents in anterior arterial territories has been showing more consistent benefits to patients,¹ the use of stents in posterior arterial territories remains more problematic.³

Despite a few studies showing that patients with vascular posterior strokes might benefit from stent therapy, the studies published so far might be insufficient for recommendations that could be broadly used.³⁻⁵ Thus, extending recommendations for the use of stent retrievers in anterior territory arteries to posterior territory arteries is not possible, as it remains to be elucidated by prospective studies whether stents are safe and superior to standard treatments in patients with critical stenosis or acute ischemic stroke of the posterior vascular territory.

The main strength of evidence-based medicine is sometimes also its major problem. Evidence-based medicine recommendations need to be based in evidence. Thus, perhaps the main conclusion of the Touma et al¹ study needs to be more accurate, better specifying for what clinical situations stent retrievers showed benefits, and a more generalized conclusion should be avoided. In this venue, a more appropriate conclusion would have been that the use of stent retrievers in conjunction with rtPA can be associated with significant improvement of functional independence after AIS of the anterior

vascular territories. It is possible that this review and meta-analysis will endorse future guidelines for stent retrievers for treatment of acute ischemic stroke in the near future. However, at this point, more studies are necessary before we can generalize its conclusions and also recommend this therapeutic option for patients with posterior vascular territory strokes. Stroke neurologists must be aware of this aspect.

Marino Muxfeldt Bianchin, MD, PhD

Rosane Brondani, MD, PhD

Andrea Garcia de Almeida, MD, PhD

Author Affiliations: Basic Research and Advanced Investigations in Neurology, Division of Neurology, Hospital de Clínicas de Porto Alegre, Universidade Federal do Rio Grande do Sul, Brazil.

Corresponding Author: Marino Muxfeldt Bianchin, MD, PhD, Basic Research and Advanced Investigations in Neurology, Experimental Research Centre, Hospital de Clínicas de Porto Alegre, Universidade Federal do Rio Grande do Sul, Ramiro Barcelos, 2350, Porto Alegre, RS, Brazil, 90035-903 (mbianchin@hcpa.edu.br).

Published Online: July 5, 2016. doi:10.1001/jamaneurol.2016.2201.

Conflict of Interest Disclosures: None reported.

Funding/Support: Dr Bianchin is supported by the Brazilian government research grant agencies Conselho Nacional de Desenvolvimento Científico e Tecnológico and Fundação de Amparo à Pesquisa do Rio Grande do Sul.

Role of the Funder/Sponsor: The funders had no role in the preparation, review, or approval of the manuscript, and the decision to submit the manuscript for publication.

1. Touma L, Filion KB, Sterling LH, Atallah R, Windle SB, Eisenberg MJ. Stent retrievers for the treatment of acute ischemic stroke: a systematic review and meta-analysis of randomized clinical trials. *JAMA Neurol.* 2016;73(3):275-281.
2. Markus HS, van der Worp HB, Rothwell PM. Posterior circulation ischaemic stroke and transient ischaemic attack: diagnosis, investigation, and secondary prevention. *Lancet Neurol.* 2013;12(10):989-998.
3. Compter A, van der Worp HB, Schonewille WJ, et al; VAST investigators. Stenting versus medical treatment in patients with symptomatic vertebral artery stenosis: a randomised open-label phase 2 trial. *Lancet Neurol.* 2015;14(6):606-614.
4. Delgado Acosta F, Jiménez Gómez E, de Asís Bravo Rodríguez F, Oteros Fernández R, Ochoa Sepúlveda JJ. Vertebrobasilar recanalization techniques before the placement of stent-retrievers: reopening is not synonymous with good outcome [in Spanish]. *Radiologia.* 2014;56(1):44-51.
5. Mokin M, Sonig A, Sivakanthan S, et al. Clinical and procedural predictors of outcomes from the endovascular treatment of posterior circulation strokes. *Stroke.* 2016;47(3):782-788.