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Publishing Title: Interventional Acute Stroke Therapy with the Merci Retriever Embolectomy Device: Results from 1000 patients in a Open Label Prospective Multicenter Registry

Author Block: Marilyn M. Rymer, St Luke's, Kansas City, MO; Tudor G. Jovin, Univ of Pittsburgh Medical Ctr, Pittsburgh, PA; Ronald F. Budzik, Riverside Methodist Hosp, Columbus, OH; Thomas G. Devlin, Erlanger Medical Ctr, Chattanooga, TN; Helmi L. Lutsep, Oregon Stroke Ctr, OHSU, Portland, OR; Wade S. Smith, Univ of California, San Francisco, San Francisco, CA

Abstract Body:

Background and Significance: MERCI and Multi MERCI, two previous prospective studies, investigated safety and recanalization rates of the Merci embolectomy device in acute stroke due to large vessel intracranial occlusion. However, clinical outcomes and the safety of mechanical embolectomy with the Merci device when this is used in routine clinical practice have only been reported in preliminary fashion.

Methods: Final results from a prospective multicenter registry with participation from 37 centers. The only required inclusion criteria is the use of any Merci Retriever in patients with acute stroke. No restrictions were imposed in regards to time-to-treatment, intravenous (IV) or intra-arterial (IA) lytics, or the use of other mechanical recanalization strategies. Clinical outcomes at 90 days were obtained prospectively with good outcomes defined as modified Rankin Score ≤ 2. Recanalization was reported using the TICI classification, with 2a, 2b and 3 considered as success.

Results: A total of 1000 patients were registered. Median patient age and NIHSS were 68 and 17, respectively and 52% were male (similar to MERCI and MultiMERCI). The frequencies of key co-morbidities were: hypertension 74%, diabetes mellitus 23%, atrial fibrillation 40%, coronary disease 30%, prior stroke history 15%. Median time from symptom onset to treatment onset was 5 hours. IV lytic was used in 31%, and IA lytic was used in 47%. Treated arterial occlusions were M1 MCA (53%), ICA (32%), M2 (8%), and vertebrobasilar (8%). Tracheal intubation occurred in 63% of cases. Successful recanalization was achieved in 80% of cases. Good outcomes were seen in 32%, and 33% died by day 90. Final analysis is on-going and univariate and multivariate predictors of outcome will be reported at the time of presentation.

Conclusions: Real-world use of the Merci Retriever mechanical embolectomy devices in acute ischemic stroke patients yielded similar results to those obtained in previous prospective studies. Our findings suggest that the rates of good clinical outcomes and mortality in MERCI/Multi MERCI translate well into routine clinical practice.

Author Disclosure Block:  M.M. Rymer: Speakers; Modest; Concentric Medical, Genentech, Inc.. Consultant/Advisory Board; Modest; Genentech, Inc. T.G. Jovin: ; Concentric Medical, Co-Axia, ev3. R.F. Budzik: Speakers; Modest; Concentric Medical. T.G. Devlin: ; Concentric Medical, Penumbra, Inc.. Consultant/Advisory Board; Modest; Brainsgate, Inc. H.L. Lutsep: ; Concentric Medical. Other; Significant; Chair DSMB, Co-Axia. W.S. Smith: Ownership Interest; Modest; Concentric Medical. Consultant/Advisory Board; Significant; Concentric Medical. Other; Significant; Univ of California holds patent on Merci device.