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Frontline Therapy with the ACE Reperfusion Catheters in an Acute Ischemic Stroke Cohort Josser Delgado Almandoz MD Neurointerventional Radiology, Abbott Northwestern Hospital, Minneapolis, MN

Penumbra 😜

Introduction

Rapid and complete reperfusion after stroke onset has been the cornerstone for the better long-term functional independence for patients. To meet these goals, the new large bore ACE catheter was designed to enable greater efficiency in revascularization of patients with acute ischemic stroke. Herein, we present an analysis of the safety, efficacy and procedure time of ACE catheters as the frontline thrombectomy device.

The aim of this study is to determine effectiveness of ACE reperfusion catheters as frontline therapy, or with adjunctive stent retrievers, in patients with acute ischemic stroke from large vessel occlusions (LVO).

Methods

In this single-center, retrospective study, 100 patients were consecutively enrolled and treated for LVO in the anterior circulation with aspiration thrombectomy as initial approach. The reperfusion catheters included the ACE60, ACE64, and ACE68. Main study outcomes included revascularization success, defined by a score of mTICI 2b/3; procedural time metrics; and mRS 0-2 at 90 days.

Results

In this stroke cohort of 100 patients, 90% (90/100) achieved mTICI 2b/3, with a mean time of 38.7 minutes from puncture. At day-90, 46% (46/100) of patients reached mRS 0-2 Successful reperfusion with aspiration was attained in 64% of patients treated with ACE60, 88% with ACE64, and 100% with ACE68 (p<0.001). Single-pass mTICI 2b/3 was achieved in 31%, 38% and 50% of patients utilizing ACE60, ACE64, and ACE68 respectively. Mean puncture to reperfusion time with ACE60 was 48.8 minutes and 30 minutes with ACE64/68 (p=0.002).

Results (Continued)

Aspiration thrombectomy alone was performed in 84 of the 100 patients, achieving mTICI 2b/3 in 78 patients (93%). Adjunctive stent retriever use was higher in the first 20 patients (45%) than the subsequent 80 (9%) (p=0.0004). mTICI 2b/3 using aspiration alone was achieved in 50% of the first 20 patients and 85% of

subsequent 80 patients (p=0.002). At 90 days, 49% (41/84) treated with aspiration only achieved mRS 0-2. Adjunctive stent retriever was used in 16 patients following unsuccessful

aspiration, achieving mTICI 2b/3 in 12 (75%). At 90 days, mRS 0-2 was observed in 31% (5/16) of these patients. Puncture-toreperfusion time was shorter for those

successfully revascularized with ACE alone (30.5 minutes) than patients needing adjunctive therapy (81.8 minutes, p<0.0001).

BASELINE CHARACTERISTICS

| Baseline Characteristics | ALL N=100, % | ADAPT only N=84, % | Solumbra rescue N=16, % | p-value |
|-----------------------------|-----------------|-----------------------|-------------------------------|---------|
| Age | 68.0 | 67.9 | 68.7 | 0.83 |
| Male | 50 | 50.0 | 50.0 | 1 |
| IV-tPA | 53 | 54.8 | 43.8 | 0.59 |
| Atrial Fibrillation | 35 | 32.1 | 50.0 | 0.25 |
| Hypertension | 62 | 63.1 | 56.3 | 0.78 |
| Diabetes Mellites | 23 | 21.4 | 31.3 | 0.52 |
| NIHSS | 18.2 | 18.2 | 18.1 | 0.94 |
| NCCT ASPECTS | 9.0 | 9.0 | 9.1 | 0.62 |
| CT Angiogram | 73 | 76.2 | 56.3 | 0.13 |

CLOT LOCATION

| Site of primary occlusion | ALL N=100, % | ADAPT only N=84, % | Solumbra rescue N=16, % | p- value |
|------------------------------|-----------------|--------------------------|-------------------------------|-------------|
| ICA | 36 | 32.1 | 56.3 | 0.09 |
| M1 | 45 | 48.8 | 25.0 | 0.1 |
| M2 | 16 | 15.5 | 18.8 | 0.99 |
| M3 | 3 | 3.6 | 0.0 | NA |
| Left Hemisphere Occlusion | 52 | 52.4 | 50.0 | NA |



mRS 0-2 At Day 90



SAFETY DATA

| | ALL N=100 | ADAPT only N=84 | Solumbr a Rescue N=16 | p-value |
|-----------------------------|--------------|-----------------------|-----------------------------|---------|
| Embolus to New Territory | 5 | 3.6 | 12.5 | 0.18 |
| Symptomatic ICH | 3 | 2.4 | 6.3 | 0.41 |
| Mortality | 21 | 17.9 | 37.5 | 0.1 |



CATHETERS



Conclusions

Large bore ACE reperfusion catheters are fast and effective frontline thrombectomy therapy while still maintaining flexibility for combination therapy.