RESCUE THERAPY IN MECHANICAL THROMBECTOMY REFRACTORY OCCLUSIONS WITH DETACHABLE STENT-RETRIEVERS AND GP IIB/IIIA INHIBITORS: A SINGLE CENTER EXPERIENCE.

P. Garcia-Bermejo¹, A. Zakaria², S.N. Patro², N. Akhtar¹, M. Saqqur¹, S. Kamran¹, G. Al Rumaihi³, Y.Z.B. Imam¹, A. Ali³, M. Faisal¹, N. Amir¹, A. De Souza¹, M. Ahmed⁴, D. Deleu¹, A. Own², A. Shuaib⁵

Neurology Department¹, Neuroradiology Department², Neurosurgery Department³, Clinical Pharmacy Department⁴, Neuroscience Institute⁵. Hamad General Hospital. Hamad Medical Corporation. Doha, Qatar.

Background

Mechanical Thrombectomy (MT) with stent-retrievers is standard of care. Around 25% of the cases do not reach reperfusion, and Rescue Therapies (RTs) are controversial(1). We aim to present our experience treating refractory occlusions (RO) by means of eptifibatide (GP IIB/IIIA inhibitors) and intracranial stent detachment.

Methods

We retrospectively evaluated patients treated with MT in our Center in Doha (Qatar), from April 2015 to November 2017. Those with RO (lack of reperfusion or mTICI $\leq$ 2a) underwent “off protocol” RT if unstable critical stenosis was detected after 1-2 passes of stent-retriever. Different approaches were chosen based on expert preference. A group of patients was treated with eptifibatide alone, whereas another with intracranial stent detachment plus eptifibatide. Radiological and clinical outcome will be described and compared between both groups.

Figures: Case of rescue therapy with eptifibatide IA plus permanent stenting: 36-year-old Bangladeshi male, with a “wake up” complete left MCA syndrome (NIHSS 20).

Figure 2. Mechanical thrombectomy. A: left proximal M1 occlusion. B: complete recanalization after 1 pass of stent-retriever. C: Early spontaneous severe re-stenosis after 10 minutes. D: by pass of detachable stent-retriever over the lesion after IA bolus of eptifibatide. E, F: anteroposterior and lateral view of complete recanalization after detachment of stent.

Results

During the study period, 103 patients were selected for MT. 17 (16.5%) underwent RT (5 (29.4%) eptifibatide only and 12 (70.6%) stenting plus eptifibatide). 3 (17.6%) cases did not recanalise (2 from eptifibatide group). 2 experienced re-occlusion on follow up vessel imaging despite initial successful recanalization (one from each group). No patient experienced symptomatic hemorrhagic transformation. However 1 patient died due to malignant infarction. 6 (35.29%) had good outcome (mRS $\leq$ 2) at 90 days (25% eptifibatide vs 50% stenting; p = 0.58). (Table 1).

Table 1. Univariate analysis comparison between Rescue Therapy modality groups.

Variables	Eptifibatide only (N=5)	Stenting plus Eptifibatide (N=12)	P value
Mean Age $\pm$ SD, years	38.4 $\pm$ 6.80	54.5 $\pm$ 13.33	0.005
Male Gender, N (%)	5 (100)	9 (75)	0.51
Median Baseline NIHSS (IQR)	15 (10-21)	11 (4.5-16)	0.19
Iv thrombolysis, N (%)	1 (20)	4 (33.3)	1.00
Median Baseline CT ASPECTS (IQR)	8 (8-9)	10 (9-10)	0.06
Mean Number of passes $\pm$ SD	3.2 $\pm$ 1.30	2.42 $\pm$ 1.08	0.27
Reperfusion (mTICI 2b-3), N (%)	3 (60)	11 (91.6)	0.17
Median 24h CT ASPECTS (IQR)	7 (5-8.5)	8.5 (5.75-9)	0.51
FU MRA, N (%)			0.004
• Occlusion	3 (60)	1 (8.3)	
• Stenosis > 50%	0	0	
• Stenosis < 50%	2 (40)	0	
• Full recanalization	0	8 (66.7)	
Median Workflow times (IQR), minutes			
• Door to needle	30 (27-30)	52.5 (15-96)	1.00
• Door to CT	23 (15-53)	19 (14-28)	0.620
• CT to GP	83 (73-107)	104 (54-131)	0.294
• GP to recanalization	49 (37-100)	73 (34-91)	1.00
mRS $\leq$ 2 at 90 days, N (%)	1 (25)	5 (50)	0.58

Conclusion

Rescue therapy for RO could be a necessary approach to increase the rate of recanalization and functional independence. We have described our experience with different techniques, which requires further discussion and study.

References:
1. Chang Y, Kim BM, Bang OY, Baek JH, Heo JH, Nam HS, et al. Rescue Stenting for Failed Mechanical Thrombectomy in Acute Ischemic Stroke: A Multicenter Experience. *Stroke*. 2018;49:958-964.