ENDOVASCULAR THERAPY IN BASILAR ARTERY OCCLUSION: IMPACT OF RECANALIZATION, THROMBUS BURDEN AND COLLATERALS

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Background

Whether radiological factors influence the effect of recanalization on outcome in basilar artery occlusion (BAO) is uncertain.¹ We evaluated the associations between recanalization, thrombus burden, collaterals and outcome in endovascular BAO patients.

Methods

Clinical and radiological data of endovascular stroke patients with BAO diagnosed on CT angiography at Royal Melbourne Hospital and Royal Adelaide Hospital (Australia), University Hospital of Tor Vergata and Careggi University Hospital (Italy) and from the international BASICS registry² were retrospectively analysed. Two investigators assessed the Basilar Artery on Computed Tomography Angiography (BATMAN) score (Figure 1)³, blinded to clinical outcome. Previously validated dichotomy for favourable BATMAN score (≥ 7) was used. Good outcome was defined as modified Rankin Scale ≤ 3 within 3 months; successful reperfusion as mTICI 2b-3 (or TIMI 2-3 in BASICS).

Results

Figure 1. Basilar Artery on ToMography Angiography score. BA basilar artery; VA vertebral artery; PCA posterior cerebral artery; SCA superior cerebellar artery; AICA anterior-inferior cerebellar artery; PCom posterior communicating artery.

We included 170 BAO patients treated with intra-arterial urokinase and/or mechanical thrombectomy (122 with only mechanical thrombectomy): mean(SD) age 65(13), median NIHSS 22(IQR 12-30), 36.5% treated beyond 6 hours. Recanalization was achieved in 79% patients and was associated with good outcome($p=0.003$).

N=170 endovascular BAO patients						
	Favorable BATMAN score (7-10) n= 61			Unfavorable BATMAN score (0-6) n=109		
	OR	95% CI	P	OR	95% CI	p
Successful reperfusion	11	1.2-98	0.03	3.7	0.7-20	0.1
Age	0.9	0.8-0.9	0.01	0.9	0.9-1.1	0.2
NIHSS	0.9	0.8-0.9	0.003	0.9	0.9-1.1	0.3
OTT<6 hours	3.5	0.7-18	0.1	7.2	1.5-35	0.01

Table 1. In logistic regression (adjusted for age, NIHSS and time to treatment), recanalization remained associated with good outcome (OR 11, 95%CI 1.2-98, $p=0.03$) in patients with favourable BATMAN score. Treatment within 6 hours was associated with good outcome only in patients with unfavourable BATMAN score (adjusted OR 7.2, 95%CI 1.5-35, $p=0.01$). OTT onset time to treatment; NIHSS National Institutes of Health Stroke Scale; BATMAN Basilar Artery ToMography ANGiography score.

Conclusions

Recanalization is associated with good outcome in BAO patients with good collaterals and less extensive occlusion, even in delayed time window.

References

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