

Bridging Therapy versus Mechanical Thrombectomy in Acute Circulation Stroke

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Objectives

Intravenous rtPA has been the only treatment for acute ischemic stroke for many years. Recently, several randomized controlled trials showed that Mechanical Thrombectomy (MT) in addition to best medical treatment improves outcome in patients affected by acute anterior circulation stroke with proximal vessel occlusion. Whether treatment with intravenous rtPA should be performed before MT (Bridging Therapy, BT) remains unknown.

Materials and Methods

This study is based on the Udine stroke registry. From January 2015 to June 2016, 28 patients were treated with BT while 31 patients received direct MT for acute circulation stroke. Baseline characteristics were recorded for all patients. The NIHSS score was calculated at the admission, 12 and 24 hours after the treatment, and at the discharge. The mRS score and mortality data were collected at the discharge and 3 months after the stroke. Presence of symptomatic and asymptomatic intracerebral hemorrhage (ICH) was investigated.

Results

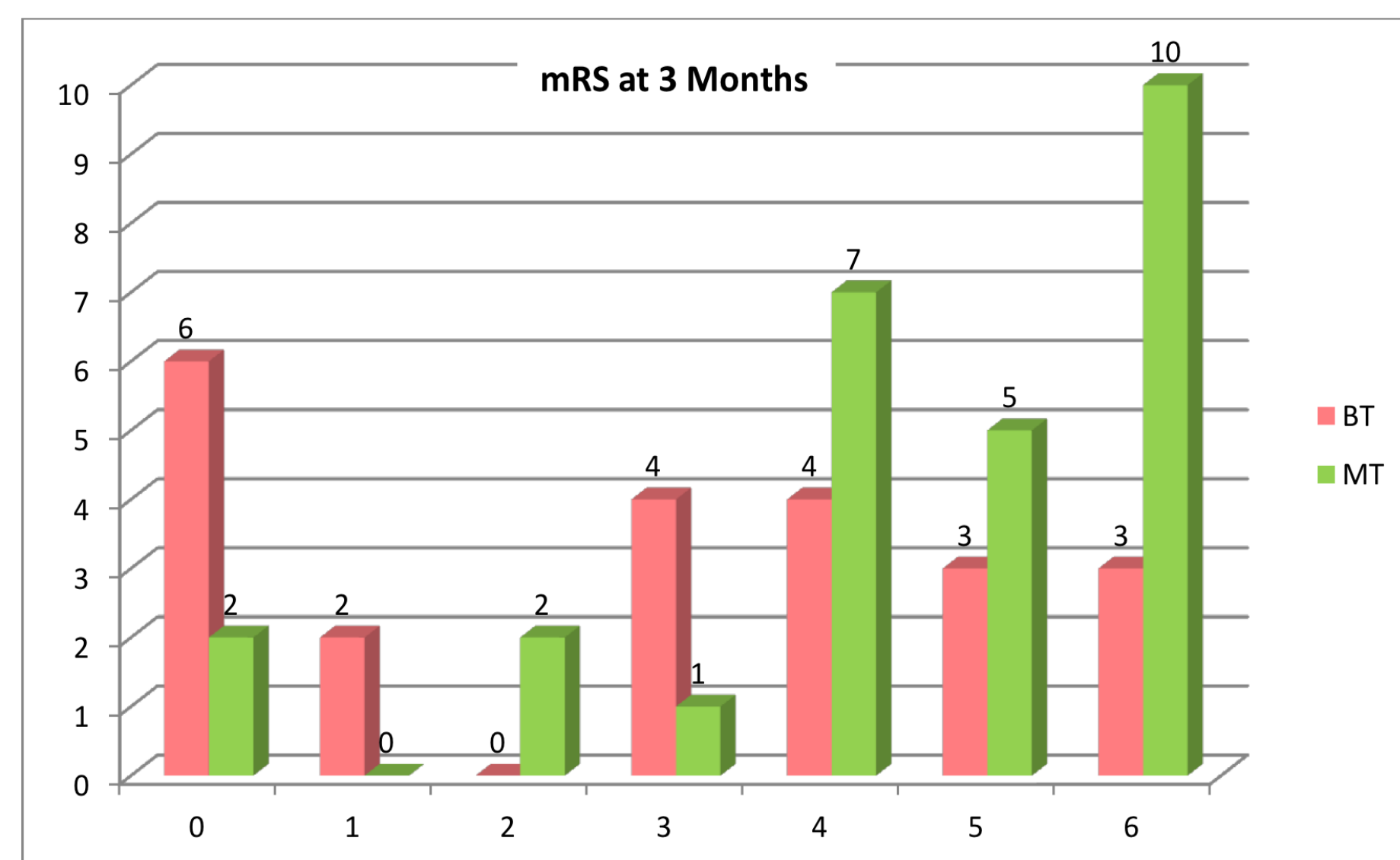
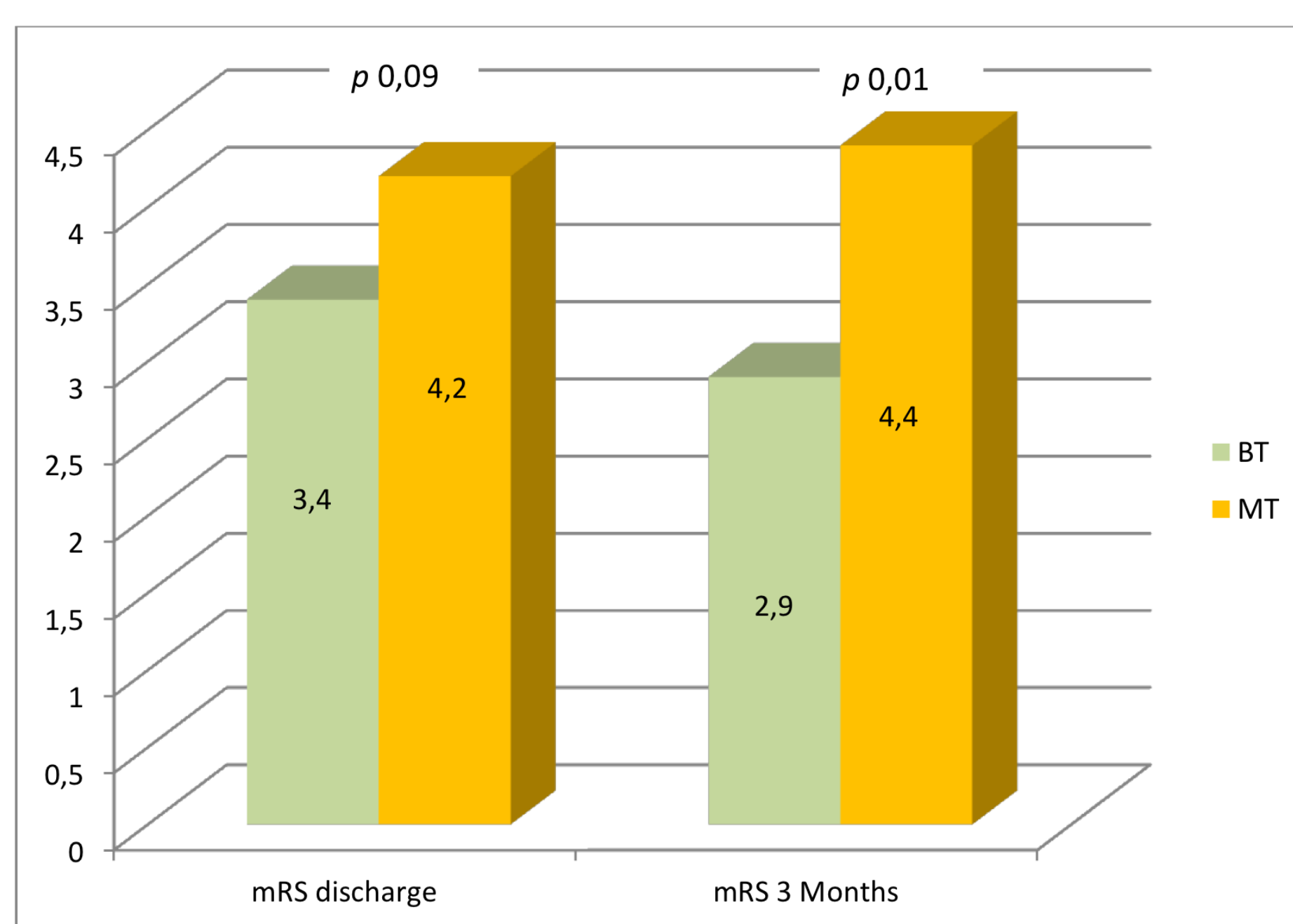
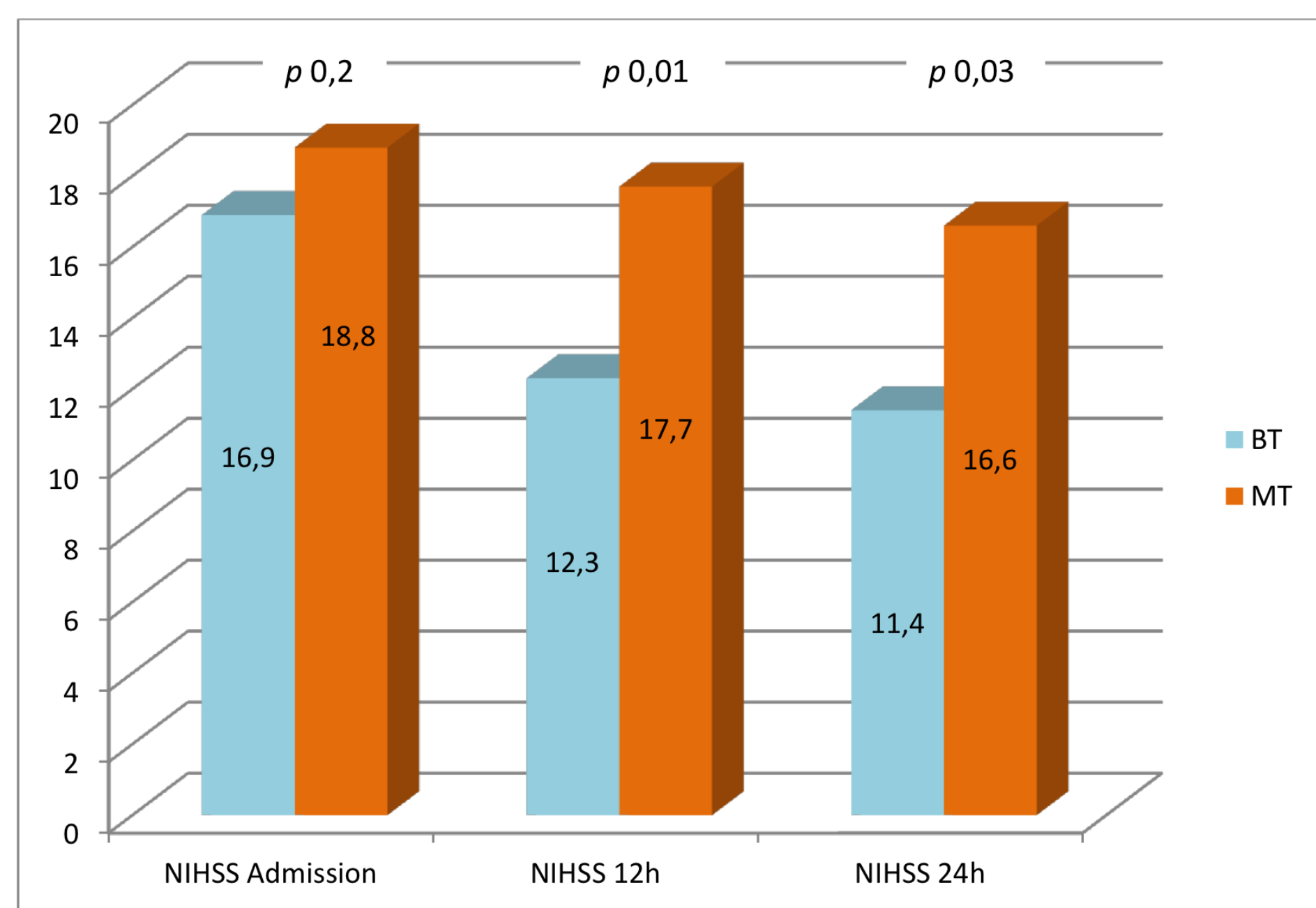
	BT	MT	p
Age	69.3 ± 13.2	70.6 ± 12.6	0.7
Male (%)	53.6	41.9	0.4
Stroke pathogenesis (%)			0.4
Large artery	14.3	6.5	
Cardioembolism	46.4	58.1	
Multiple	10.7	3.2	
Other	0	6.4	
Undetermined	28.6	25.8	
Vessel occlusion site (%)			0.1
M1	39.3	61.3	
M2	14.3	6.5	
MCA Trifurcation	0	9.7	
ICA	7.1	6.5	
Tandem Occlusion	25	6.5	
Basilar Artery	14.3	6.5	
Other	0	3.0	

Contraindications for intravenous tPA in direct MT group were: OAC and INR > 1.7 (32.3%), DOAC (6.5%), time-window > 4.5 h (12.9%), increased bleeding risk (32.3%), prior stroke < 3 months (3.2%), platelets < 100.000 mmc (6.5%), severe head trauma (3.2%), and other (3.2%).

The two groups **did not differ** for the **mean time from symptom onset to MT** (BT: 225.7 ± 66.7 minutes vs. direct MT: 209.9 ± 78.6 minutes; p = 0.4) and for the **mean duration of MT** (BT: 89.8 ± 39.7 vs direct MT: 87.1 ± 39.9; p = 0.8). Stent retrievers were used in all patients but in 6 patients (3 in BT group and 3 in direct MT group) that were treated with permanent intracranial stenting.

	BT	MT	p
TICI Before (%)			0.3
Occlusion	100	96.8	
TICI After (%)			0.4
3.6% No Perfusion	10.7	9.7	
Penetration with minimal perfusion	3.6	0	
Partial Filling (<50%)	0	6.5	
Partial Filling (>50%)	10.7	19.4	
Complete Perfusion	75	64.4	

ICH rate was similar (p = 0.4) in BT (**no ICH: 67.9%**, HI1: 21.4%, HI2: 0%, PH1: 3.6%, **PH2: 3.6%**) and direct MT patients (**no ICH: 73.3%**, HI1: 13.3%, HI2: 6.7%, PH1: 0%, **PH2: 6.7%**).



	BT	MT	p
NIHSS of 0-1 or ≥ 8 points improvement from baseline at discharge (%)	64	42.9	0.1
mRS score of 0-2 at discharge (%)	35.7	16.1	0.08
mRS score of 0-2 at 3 months (%)	36.4	14.8	0.08
mRS score of 0-1 at discharge (%)	28.6	9.7	0.06
mRS score of 0-1 at 3 months (%)	36.4	7.4	0.01
Mortality at discharge (%)	10.7	6.5	0.5
Mortality at 3 months (%)	13.6	37	0.06

Conclusions

In patients affected by acute circulation stroke BT seems to be associated with a better clinical outcome than direct MT.