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FINANCIAL DISCLOSURE:
Ownership Interest: ThrombX Medical

- Prospective, Randomized, Open-treatment, Blinded Endpoint, Adaptive trial

- Maximum sample 476 patients at 45 sites (Each site expected to enroll at least 10 patients)

- 1:1 randomization: endovascular vs. medical therapy

Stroke patients with MCA or ICA occlusion

and *salvageable tissue* identified by CT perfusion or MRI

benefit from endovascular therapy (with FDA approved devices)

between 6-16 hours

- A similar late-window study, DAWN, reported positive results in May 2017

- DEFUSE 3 was placed on hold for an early interim analysis

- Following this analysis, N=182, the study was ended

- 92 patients randomized to endovascular treatment

Baseline Characteristics

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	Endovascular (N=92)
Age, yr - median (IQR)	70 (59-78.5)
NIHSS score - median (IQR)	16 (10-20)
Stroke onset to randomization - median (IQR)	10:53 (8:46-12:21)
Stroke onset wake-up (%)	53%
Treatment with intravenous tPA (%)	11%
Qualifying Imaging: CT Perfusion	75%
Ischemic core volume, ml - median (IQR)	9 (2-26)
Perfusion lesion (Tmax>6s) volume, ml - median (IQR)	115 (79-146)

Occlusion Site

Occlusion Site	CTA/MRA N(%)	ANGIO AOL N (%)
ICA-CCA	32 (34.8)	35(38.0)
M1	60 (65. 2)	54(58.7)
M2	0 (0.0)	2(2.2)
None	0 (0.0)	1(1.1)

Baseline and Final TICI

TICI SCORE	BASELINE N(%)	FINAL N(%)	
0-1	90 (97.8)	10 (10.9)	**24%**
2A	1 (1.1)	12 (13.0)	
2B	0 (0.0)	52 (56.5)	**76%**
3	1 (1.1)	18 (19.6)	

TICI (0-2A, 2B, 3) vs. mRS at 90-days
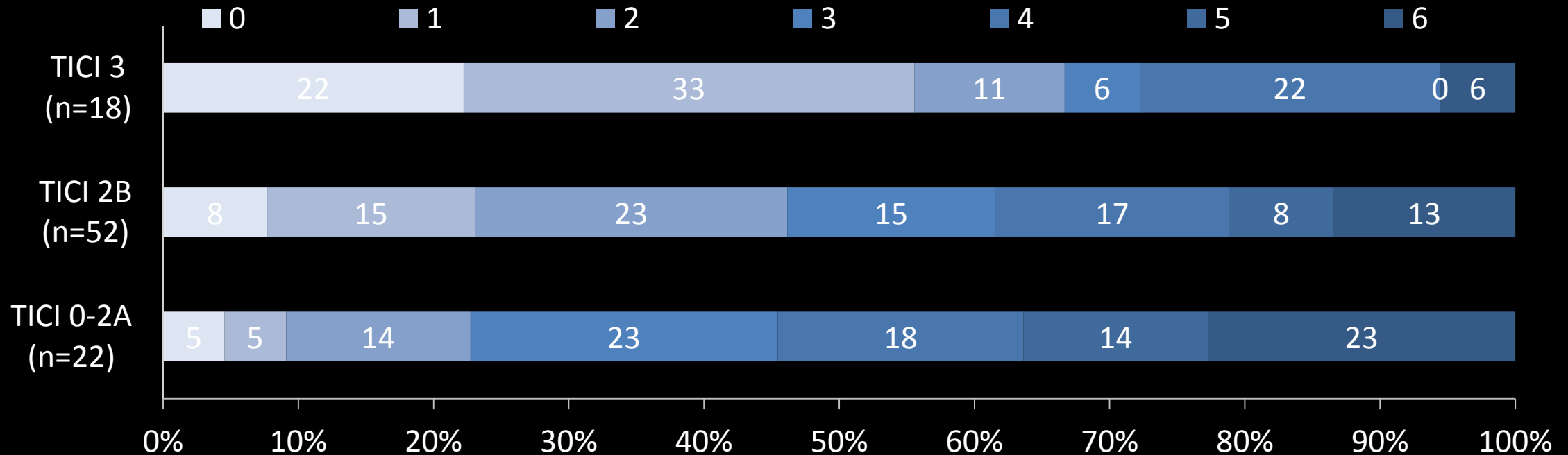
Overall difference in distribution: p=0.008

3 vs. 2B shift: p=0.04
2B vs. 0-2A shift: p=0.07

TICI vs. Good Functional Outcome

TICI SCORE	mRS 0-2 N(%)
0 (n=10)	1 (10%)
2A (n=12)	4 (33%)
2B (n=52)	24 (46%)
3 (n=18)	12 (67%)

Overall difference: p=0.03

Rate of GFO significantly increases across TICI levels: p=0.003

AOL

AOL	TICI 2B-3
ICA-CCA (n=35)	26 (74%)
M1 (n=54)	41 (76%)
M2 (n=2)	2 (100%)
None (n=1)	1 (100%)

Procedures

Intervention	N
Stentriever	74
Aspiration	25
Cervical angioplasty &/or stent	13
None	2
Intra-arterial thrombolytic	2
Intracranial angioplasty or stent	3

- 90/92 patients (98%) had an intervention
  - 88 attempted thrombectomy (87 aspiration/stentriever, 1 with placement of self expanding stent)
  - 2 had ICA stenting alone
  - 11 additional carotid angioplasty or stents placed

- 2 patients no intervention- CCA and ICA occlusion and interventionalist felt treatment was not feasible

- 5 protocol violations (5.4%) - 2 patients received IA-tPA, 2 patients had M1 stents and 1 patient had M1 angioplasty

Aspiration or Stentriever First

	Aspiration (21)	**Stentriever (66)**	**P-value**
TICI 2B-3 Rate	17 (81%)	51 (77%)	0.77
No. Passes for TICI 2B-3	2.0 $\pm$ 1.32	1.9 $\pm$ 1.1	0.86
mRS 0-2	8 (38%)	30 (45%)	0.55
Rescue	8 (38%)	4 (6%)	0.0009

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Reperfusion successful if Tmax>6s perfusion volume at baseline on CT or MRI was reduced by ≥90% at 24 hours.

This outcome was more common in the endovascular group (79%) compared to the control group (18%). $P<0.0001$

TICI SCORE	MR or CT Reperfusion (>90%)
0-2A (n=16)	5 (31%)
2B (n=44)	39 (89%)
3 (n=15)	15 (100%)

Overall difference: $p < 0.0001$

Rate of reperfusion significantly increases across TICI levels: $p < 0.0001$

Lesion growth was assessed between the baseline ischemic core volume and the infarct volume at 24 hours

Growth was less in the endovascular group (23 ml, IQR 10-75) compared to the control group (33 ml, IQR 18-75) P=0.08

Infarct volume at 24 hrs in the endovascular group (35 ml, IQR 18-82) vs. in the control group (41 ml, IQR 25-106) P=0.19
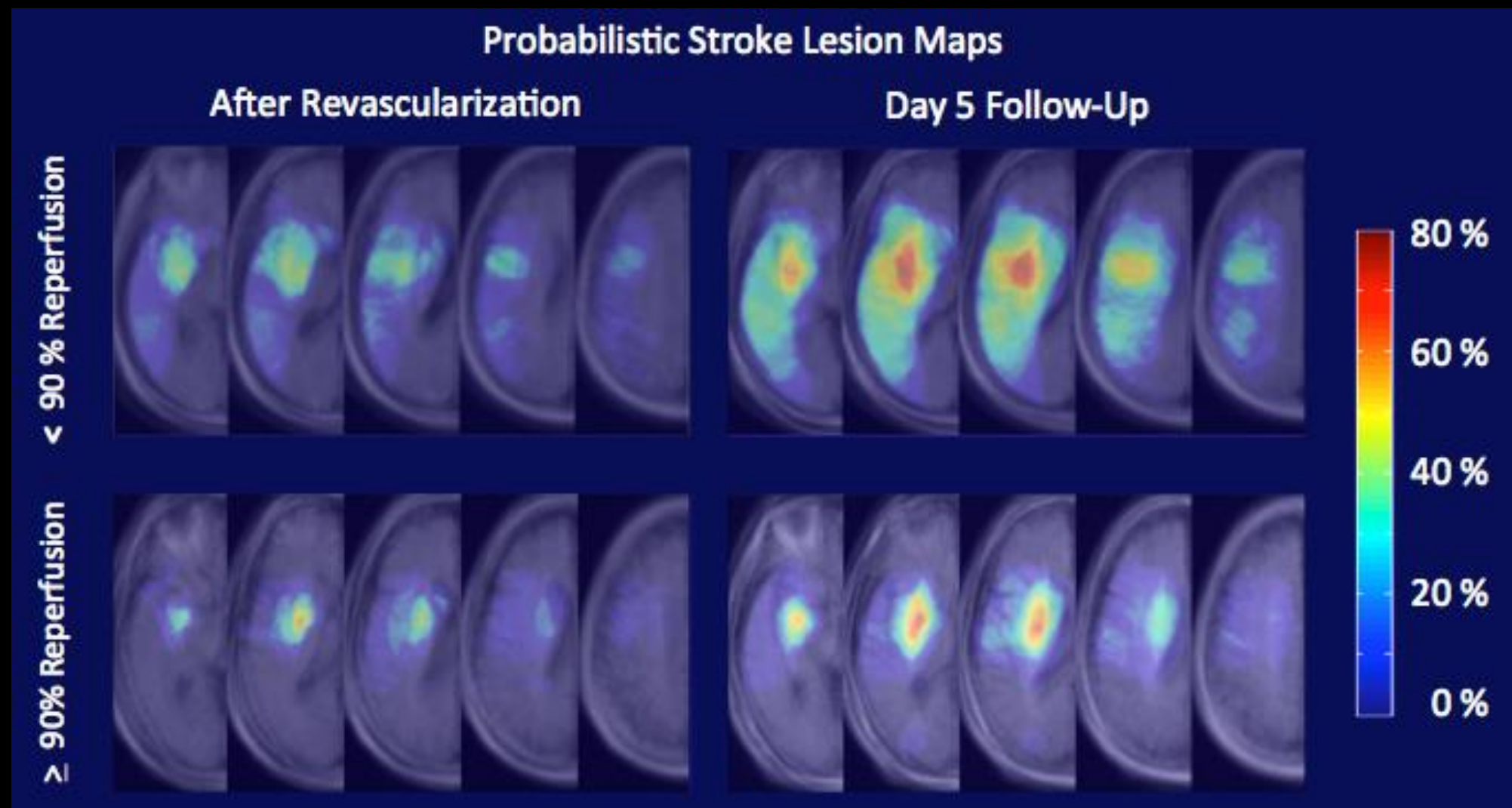
Infarct Growth

TICI SCORE	Infarct volume growth, median (IQR), mL
0-2A (n=21)	28 (16-82)
2B (n=51)	32 (14-103)
3 (n=18)	5 (1-15)

Overall difference: p=0.0005

Growth decline did not seem to be gradual: no difference between 0-2A vs. 2B (p=0.887), while 3 is different compared to both 0-2A & 2B (p=0.0015 & 0.0002).

DEFUSE 2: Infarct growth and reperfusion

- Achieved good rates of TICI 2B-3 reperfusion

- Substantial clinical benefit in reperfused patients, particularly TICI 3

- TICI 2B-3 reperfusion not influenced by AOL, 1^0 device

- Infarct Growth at 24 hr substantially reduced by TICI 3 reperfusion