

Late window trials for EVT: Implication for Alberta

Michael D Hill

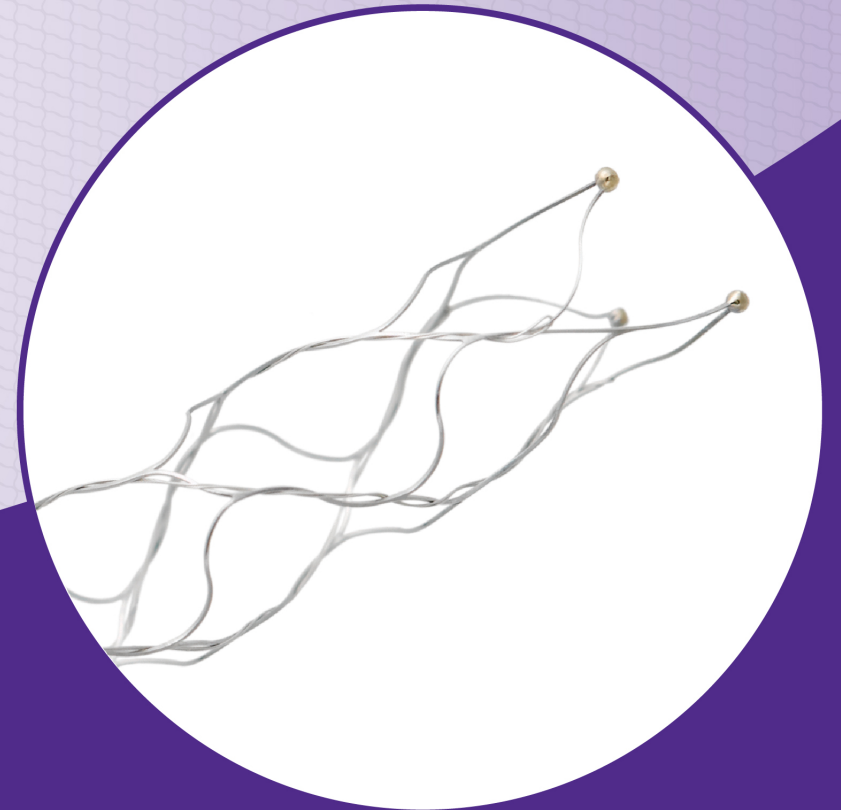
Acute Stroke Day 2018, Edmonton, AB



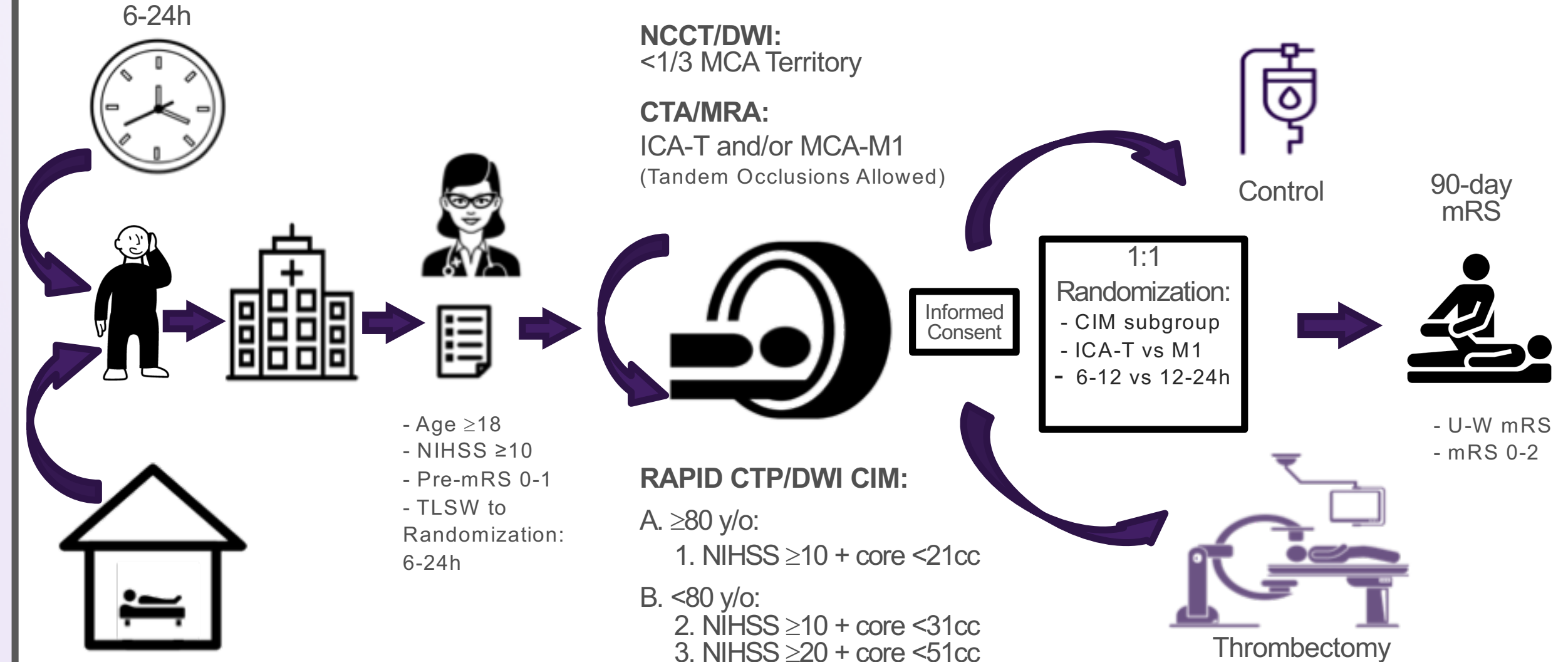
DAWN in Full Daylight

DAWN or CTP Assessment with Clinical Mismatch
in the Trials of Wake-Up and Late Presenting Strokes
Undergoing Revascularization with Trevo

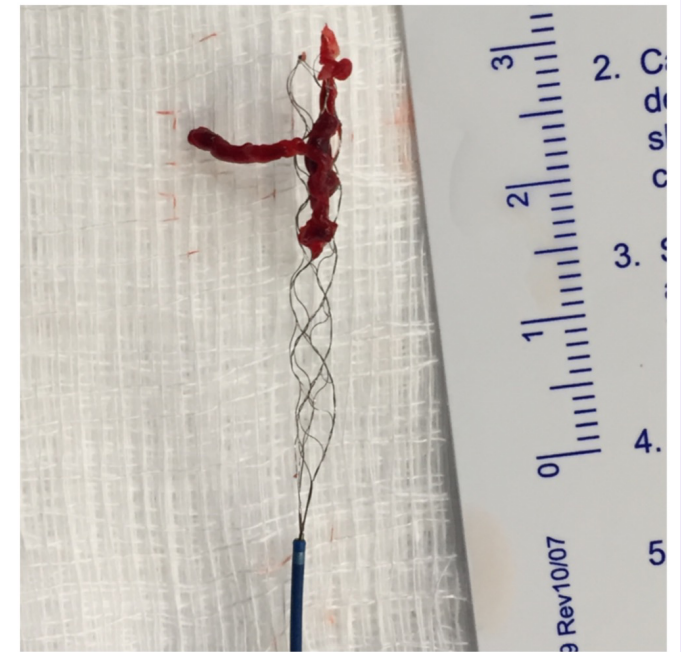
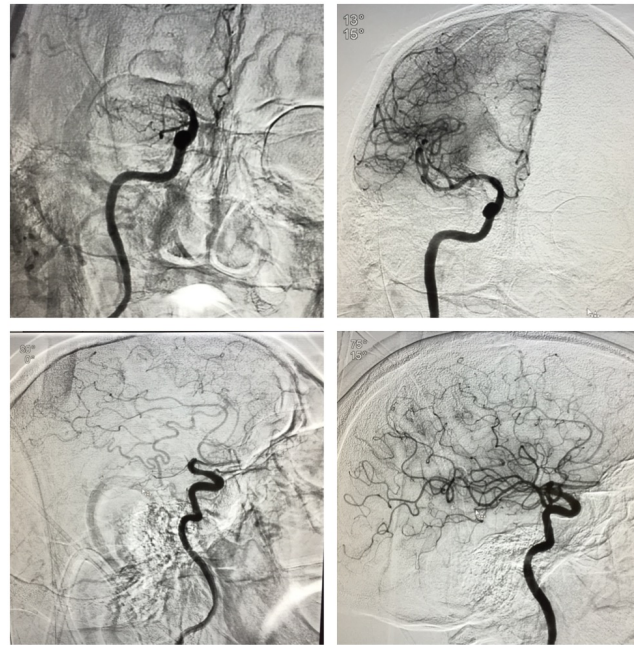
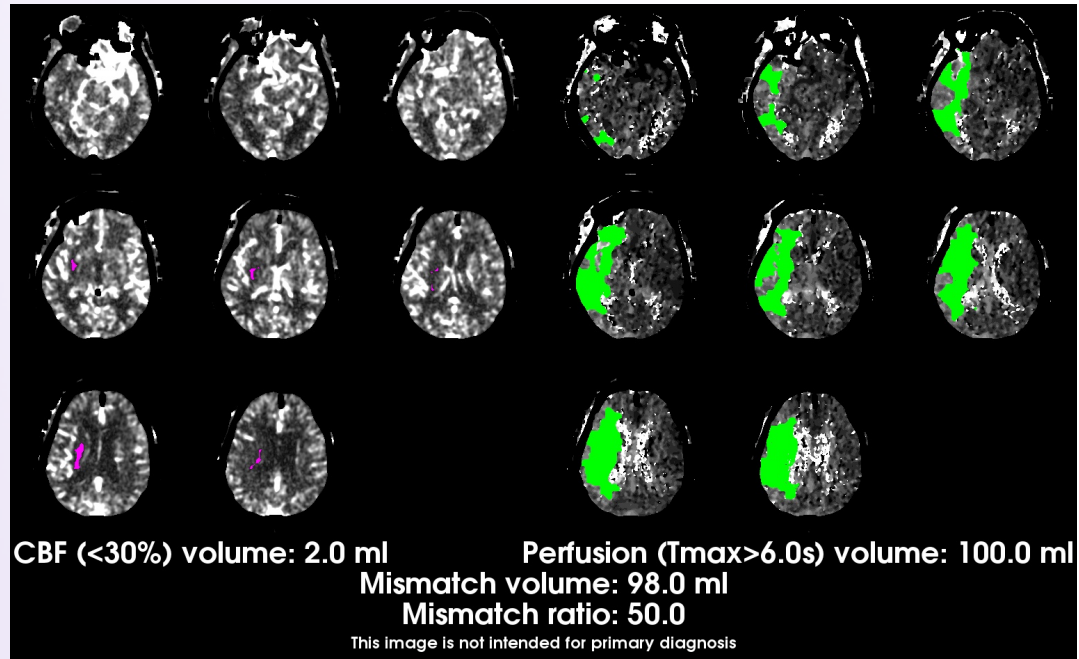
Tudor G. Jovin MD & Raul G. Nogueira MD on
behalf of the DAWN investigators



Study Methods: Workflow

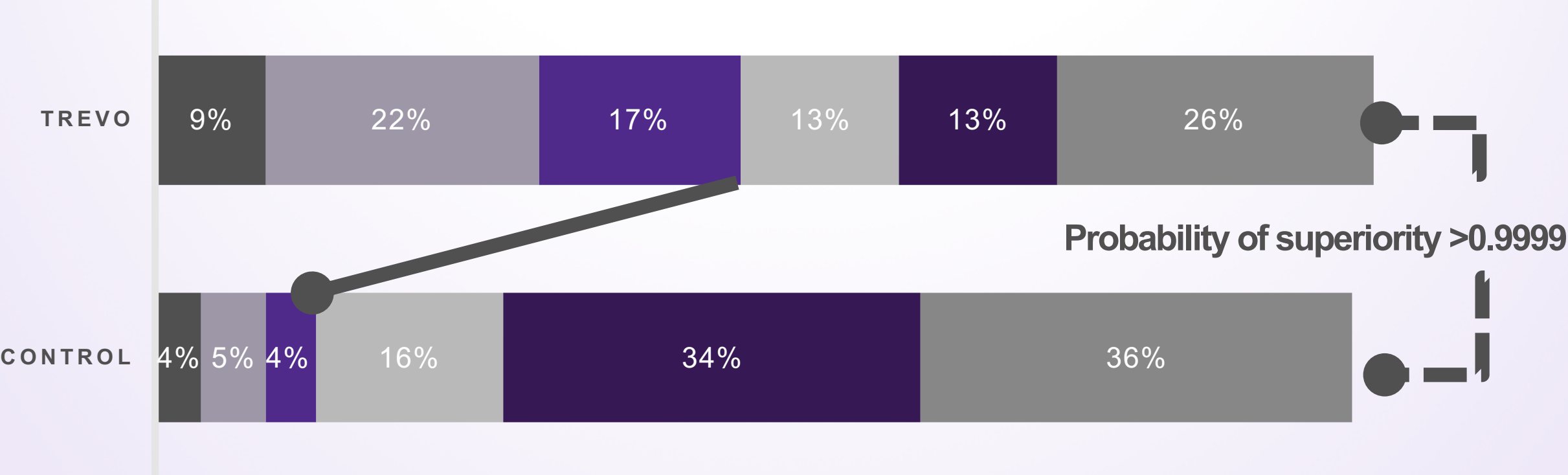


Results



Primary outcome

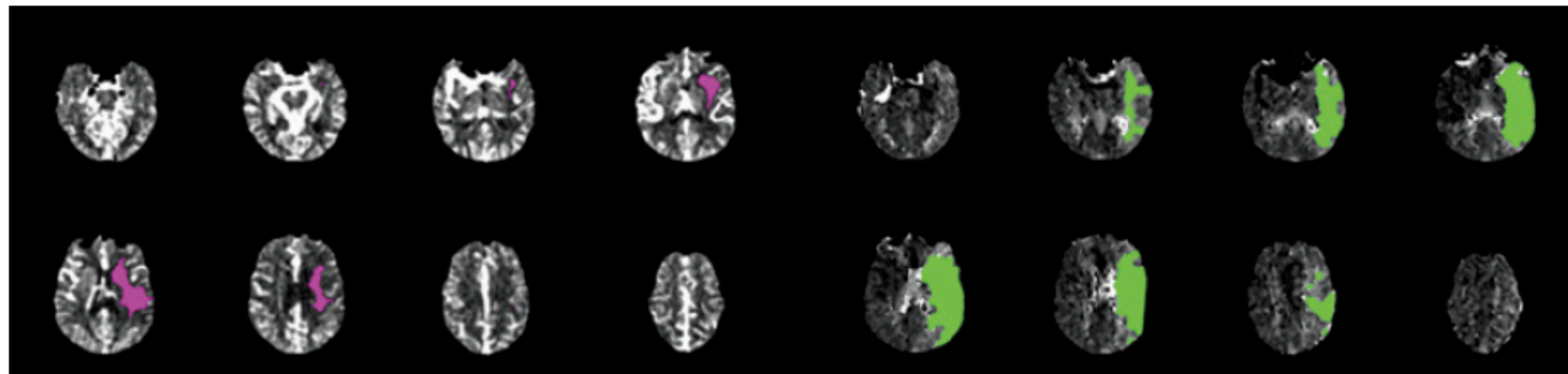
- mRS 0/uW mRS 10
- mRS 1/uW mRS 91
- mRS 2/ uW mRS 7.6
- mRS 3/ uW mRS 65
- mRS 4/ uW mRS 33
- mRS 5-6/ uW mRS 0



**73% relative risk reduction of dependency in ADL's
NNT for any lower disability 2.0**



DEFUSE-3 Trial (N Engl J Med 2018;378:708-18)



Volume of Ischemic Core, 23 ml

Volume of Perfusion Lesion, 128 ml

Mismatch volume, 105 ml

Mismatch ratio, 5.6

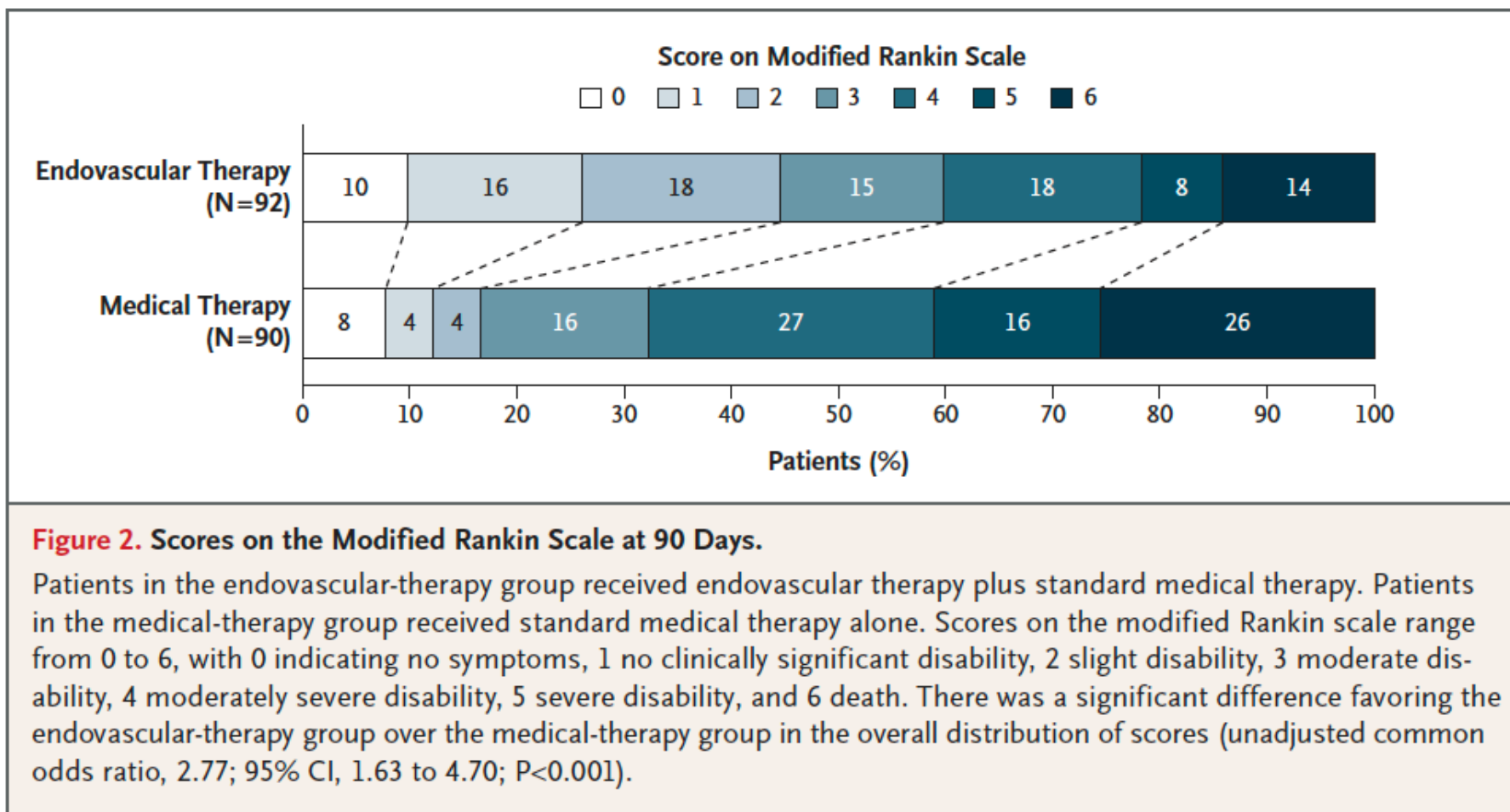
Figure 1. Example of Perfusion Imaging Showing a Disproportionately Large Region of Hypoperfusion as Compared with the Size of Early Infarction.

DEFUSE-3 Trial (N Engl J Med 2018;378:708-18)

Table 1. Baseline Characteristics of the Patients and Features of Thrombectomy.*

| Characteristic | Endovascular Therapy (N = 92) | Medical Therapy (N = 90) |
|--|----------------------------------|-----------------------------|
| Median age (IQR) — yr | 70 (59–79) | 71 (59–80) |
| Female sex — no. (%) | 46 (50) | 46 (51) |
| Median NIHSS score (IQR)† | 16 (10–20) | 16 (12–21) |
| Stroke onset witnessed — no. (%) | | |
| Yes‡ | 31 (34) | 35 (39) |
| No | | |
| Symptoms were present on awakening | 49 (53) | 42 (47) |
| Symptoms began during wakefulness | 12 (13) | 13 (14) |
| Treatment with intravenous t-PA — no. (%)§ | 10 (11) | 8 (9) |

DEFUSE-3 trial (N Engl J Med 2018;378:708-18)



WAKEUP

(epub May 16, 2018, at NEJM.org. DOI: 10.1056/NEJMoa1804355)

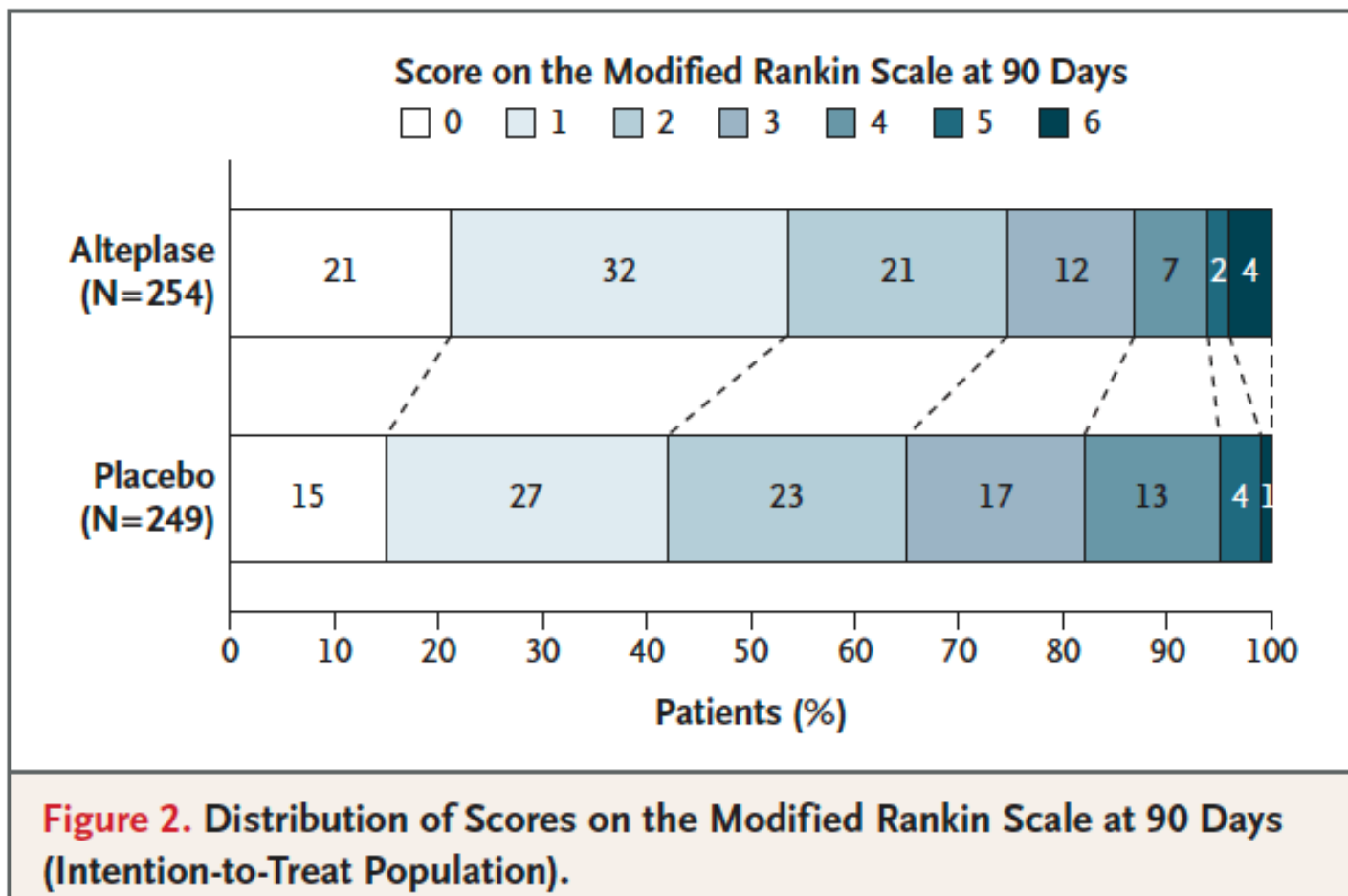
Table 1. Demographic and Clinical Characteristics of the Patients at Baseline.*

| Variable | Alteplase Group (N = 254) | Placebo Group (N = 249) |
|---|------------------------------|----------------------------|
| Mean age \pm SD — yr | 65.3 \pm 11.2 | 65.2 \pm 11.9 |
| Male sex — no. (%) | 165 (65.0) | 160 (64.3) |
| Reason for unknown time of symptom onset — no. (%) | | |
| Nighttime sleep | 227 (89.4) | 222 (89.2) |
| Daytime sleep | 12 (4.7) | 11 (4.4) |
| Aphasia, confusion, or other | 15 (5.9) | 16 (6.4) |
| Median interval between last time the patient was known to be well and symptom recognition (IQR) — hr | 7.2 (4.7–8.7) | 7.0 (5.0–9.0) |

WAKEUP

(epub May 16, 2018, at NEJM.org. DOI: 10.1056/NEJMoa1804355)

| Median NIHSS score (IQR) [†] | 6 (4–9) | 6 (4–9) |
|---|---------------|---------------|
| Vessel occlusion on time-of-flight MRA — no./total no. (%) | | |
| Any | 84/249 (33.7) | 84/246 (34.1) |
| Intracranial internal carotid artery | 24/249 (9.6) | 11/246 (4.5) |
| Middle cerebral artery main stem | 35/249 (14.1) | 37/246 (15.0) |
| Middle cerebral artery branch | 32/249 (12.9) | 36/246 (14.6) |
| Other [‡] | 12/249 (4.8) | 12/246 (4.9) |
| Median lesion volume on diffusion-weighted imaging (IQR) — ml | 2.0 (0.8–7.9) | 2.5 (0.7–8.8) |
| Median time from symptom recognition to MRI (IQR) — hr | 2.6 (1.9–3.3) | 2.6 (2.1–3.3) |



Implications: Acute Ischemic Stroke Biology Demands Fast Treatment

The new paradigm has three steps:

- (1) identify disabling stroke in a previously functional adult;
- (2) image the brain and neurovasculature (quickly) to identify the treatable patient;
- (3) treat very fast



CALGARY

STROKE PROGRAM