# Large Ischemic Core Thrombectomy

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# Large Ischemic Core

Patients with large stroke comprise 1 in 5 patients with LVO

989 AIS in 2014-2015
224 LVO (1/5)

Mokin M et al. ASPECTS LVO and time of symptom onset: Estimation of eligibility for EVT. Neurosurgery 2017

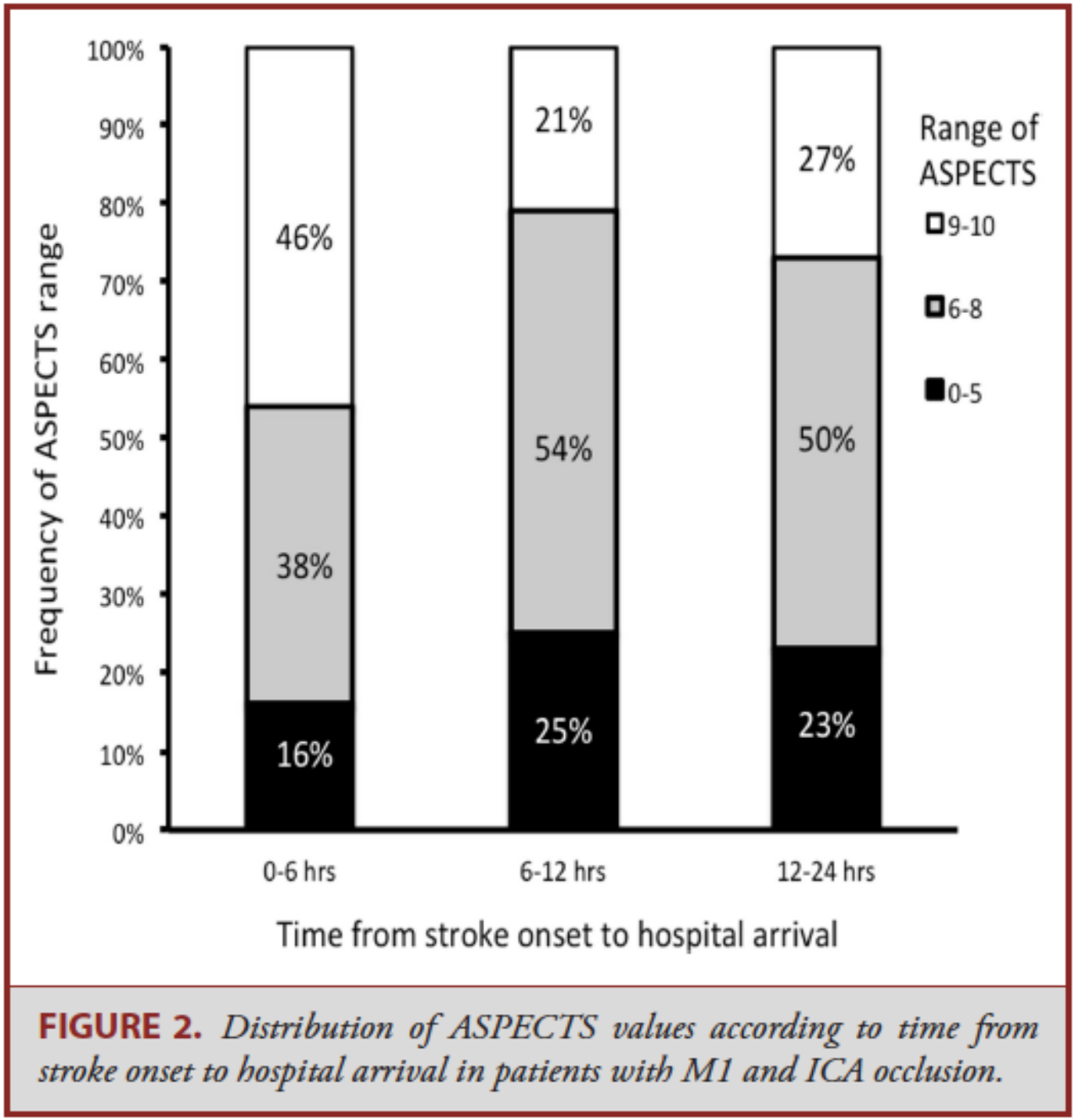
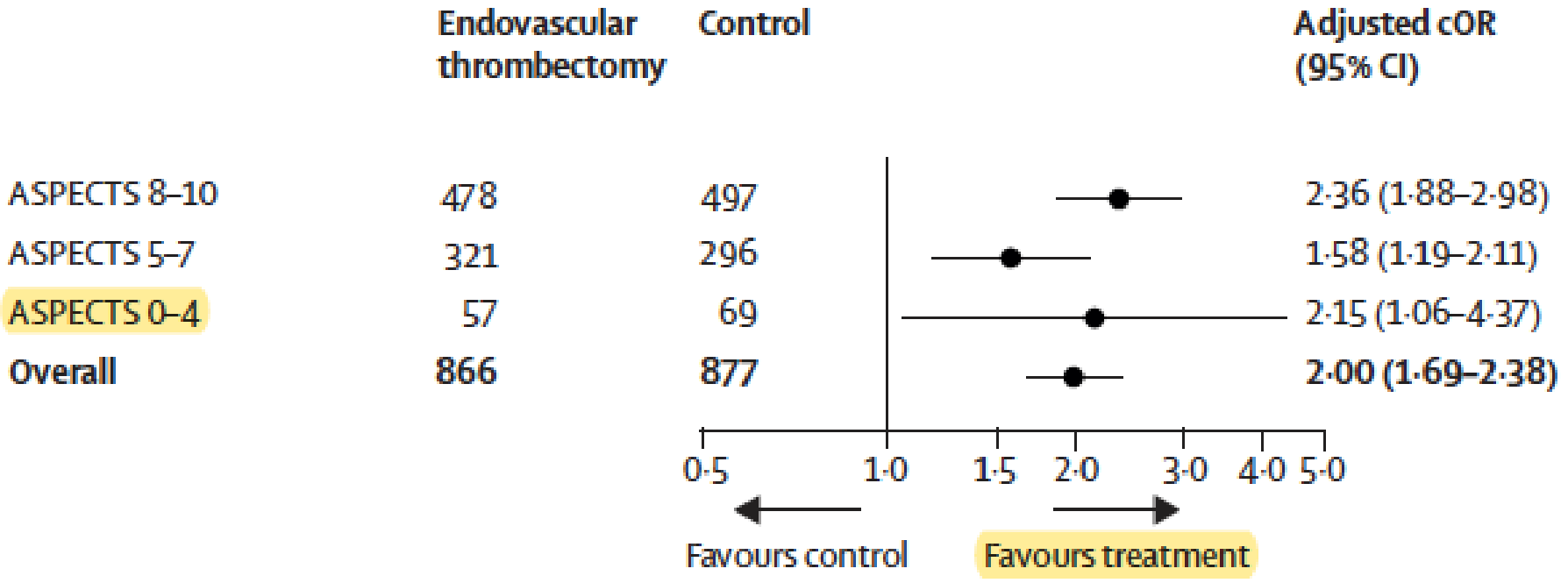



**FIGURE 2.** *Distribution of ASPECTS values according to time from stroke onset to hospital arrival in patients with M1 and ICA occlusion.*

# Imaging features and safety and efficacy of endovascular stroke treatment: a meta-analysis of individual patient-level data

*Luis San Román*, Bijoy K Menon*, Jordi Blasco, María Hernández-Pérez, Antoni Dávalos, Charles B L M Majoie, Bruce C V Campbell, Francis Guillemin, Hester Lingsma, René Anxionnat, Jonathan Epstein, Jeffrey L Saver, Henk Marquering, John H Wong, Demetrius Lopes, Gernot Reimann, Hubert Desal, Diederik W J Dippel, Shelagh Coutts, Richard du Mesnil de Rochemont, Dileep Yavagal, Jean Christophe Ferre, Yvo B W E M Roos, David S Liebeskind, Robert Lenthall, Carlos Molina, Fahad S Al Ajlan, Vivek Reddy, Dar Dowlatshahi, Nader-Antoine Sourour,*




HERMES Lancet 2018

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 APRIL 7, 2022 VOL. 386 NO. 14

## Endovascular Therapy for Acute Stroke with a Large Ischemic Region

S. Yoshimura, N. Sakai, H. Yamagami, K. Uchida, M. Beppu, K. Toyoda, Y. Matsumaru, Y. Matsumoto, K. Kimura, M. Takeuchi, Y. Yazawa, N. Kimura, K. Shigeta, H. Imamura, I. Suzuki, Y. Enomoto, S. Tokunaga, K. Morita, F. Sakakibara, N. Kinjo, T. Saito, R. Ishikura, M. Inoue, and T. Morimoto

ORIGINAL ARTICLE

## Trial of Endovascular Therapy for Acute Ischemic Stroke with Large Infarct

X. Huo, G. Ma, X. Tong, X. Zhang, Y. Pan, T.N. Nguyen, G. Yuan, H. Han, W. Chen, M. Wei, Jiangang Zhang, Z. Zhou, X. Yao, G. Wang, W. Song, X. Cai, G. Nan, D. Li, A.Y.-C. Wang, W. Ling, C. Cai, C. Wen, E. Wang, L. Zhang, C. Jiang, Y. Liu, G. Liao, X. Chen, T. Li, S. Liu, J. Li, F. Gao, N. Ma, D. Mo, L. Song, X. Sun, X. Li, Y. Deng, G. Luo, M. Lv, H. He, A. Liu, Jingbo Zhang, S. Mu, Lian Liu, J. Jing, X. Nie, Z. Ding, W. Du, X. Zhao, P. Yang, Liping Liu, Yilong Wang, D.S. Liebeskind, V.M. Pereira, Z. Ren, Yongjun Wang, and Z. Miao, for the ANGEL-ASPECT Investigators*

ORIGINAL ARTICLE

## Trial of Endovascular Thrombectomy for Large Ischemic Strokes

A. Sarraj, A.E. Hassan, M.G. Abraham, S. Ortega-Gutierrez, S.E. Kasner, M.S. Hussain, M. Chen, S. Blackburn, C.W. Sitton, L. Churilov, S. Sundararajan, Y.C. Hu, N.A. Herial, P. Jabbour, D. Gibson, A.N. Wallace, J.F. Arenillas, J.P. Tsai, R.F. Budzik, W.J. Hicks, O. Kozak, B. Yan, D.J. Cordato, N.W. Manning, M.W. Parsons, R.A. Hanel, A.N. Aghaebrahim, T.Y. Wu, P. Cardona-Portela, N. Pérez de la Ossa, J.D. Schaafsma, J. Blasco, N. Sangha, S. Warach, C.D. Gandhi, T.J. Kleinig, D. Sahlein, L. Elijovich, W. Tekle, E.A. Samaniego, L. Maali, M.A. Abdulrazzak, M.N. Psychogios, A. Shuaib, D.K. Pujara, F. Shaker, H. Johns, G. Sharma, V. Yogendrakumar, F.C. Ng, M.H. Rahbar, C. Cai, P. Lavori, S. Hamilton, T. Nguyen, J.T. Fifi, S. Davis, L. Wechsler, V.M. Pereira, M.G. Lansberg, M.D. Hill, J.C. Grotta, M. Ribo, B.C. Campbell, and G.W. Albers, for the SELECT2 Investigators*

## Endovascular thrombectomy for acute ischaemic stroke with established large infarct: multicentre, open-label, randomised trial

*Martin Bendszus, Jens Fiehler, Fabien Subtil, Susanne Bonekamp, Anne Hege Aamodt, Blanca Fuentes, Elke R Gizewski, Michael D Hill, Antonin Krajina, Laurent Pierot, Claus Z Simonsen, Kamil Zeleňák, Rolf A Blauenfeldt, Bastian Cheng, Angélique Denis, Hannes Deutschmann, Franziska Dorn, Fabian Flottmann, Susanne Gellißen, Johannes C Gerber, Mayank Goyal, Jozef Haring, Christian Herweh, Silke Hopf-Jensen, Vi Tuan Hua, Märit Jensen, Andreas Kastrup, Christiane Fee Keil, Andrej Klepanec, Egon Kurča, Ronni Mikkelsen, Markus Möhlenbruch, Stefan Müller-Hülsbeck, Nico Münnich, Paolo Pagano, Panagiotis Papanagiotou, Gabor C Petzold, Mirko Pham, Volker Puetz, Jan Raupach, Gernot Reimann, Peter Arthur Ringleb, Maximilian Schell, Eckhard Schlemm, Silvia Schönenberger, Bjørn Tennøe, Christian Ulfert, Kateřina Vališ, Eva Vítková, Dominik F Vollherbst, Wolfgang Wick, Götz Thomalla, on behalf of the TENSION Investigators**

ORIGINAL ARTICLE

## Trial of Thrombectomy for Stroke with a Large Infarct of Unrestricted Size

V. Costalat, T.G. Jovin, J.F. Albucher, C. Cognard, H. Henon, N. Nouri, B. Gory, S. Richard, G. Marnat, I. Sibon, F. Di Maria, M. Annan, G. Boulouis, P. Cardona, M. Obadia, M. Piotin, R. Bourcier, B. Guillon, S. Godard, A. Pasco-Papon, O.F. Eker, T.-H. Cho, G. Turc, O. Naggara, S. Velasco, M. Lamy, F. Clarençon, S. Alamowitch, A. Renu, L. Suissa, H. Brunel, J.-C. Gentric, S. Timsit, C. Lamy, C. Chivot, F. Macian-Montoro, C. Mounayer, O. Ozkul-Wermester, C. Papagiannaki, V. Wolff, R. Pop, A. Ferrier, E. Chabert, F. Ricolfi, Y. Béjot, E. Lopez-Cancio, P. Vega, L. Spelle, C. Denier, M. Millán, J.F. Arenillas, M. Mazighi, E. Houdart, M. del Mar Freijo, A. Duhamel, N. Sanossian, D.S. Liebeskind, J. Labreuche, B. Lapergue, and C. Arquizan, for the LASTE Trial Investigators*

JAMA | Original Investigation

## Thrombectomy for Stroke With Large Infarct on Noncontrast CT
## The TESLA Randomized Clinical Trial

The Writing Committee for the TESLA Investigators

**IMPORTANCE** Recent large infarct thrombectomy trials used heterogeneous imaging modalities and time windows for patient selection. Noncontrast computed tomographic (CT) scan is the most common stroke imaging approach. It remains uncertain whether thrombectomy is effective for patients with large infarcts identified using noncontrast CT alone within 24 hours of stroke onset.

Visual Abstr
Editorial
Supplement

**The Writing Committee for the TESLA Investigators:** Albert J. Yoo, MD, PhD; Osama O. Zaidat, MD, MS; Sunil A. Sheth, MD; Ansaar T. Rai, MD; Santiago Ortega-Gutierrez, MD, MSc; Curtis A. Given II, MD; Syed F. Zaidi, MD; Ramesh Grandhi, MD; Hugo Cuellar, MD; Maxim Mokin, MD, PhD; Jeffrey M. Katz, MD; Amer Alshekhlee, MD; Muhammad A. Taqi, MD; Sameer A. Ansari, MD, PhD; Adnan H. Siddiqui, MD, PhD; Nobl Barazangi, MD, PhD; Joey D. English, MD, PhD; Alberto Maud, MD; Jawad Kirmani, MD; Rishi Gupta, MD; Dileep R. Yavagal, MD; Jason Tarpley, MD; Dhruvil J. Pandya, MD; Marshall C. Cress, MD; Sushrut Dharmadhikari, MD; Kaiz S. Asif, MD; Tareq Kass-Hout, MD; Ajit S. Puri, MD; Nazli Janjua, MD; Aniel Q. Majjhoo, MD; Aamir Badruddin, MD; Randall C. Edgell, MD, MSPH; Rakesh Khatri, MD; Larry Morgan, MD; Anmar


TENSION
SELECT2
TRIAL
TESLA
LASTE
RESCUE-Japan
ANGEL
ASPECT

| Trial | RESCUE-Japan LIMIT | ANGEL ASPECT | SELECT 2 | TESLA | TENSION | LASTE |
|---|---|---|---|---|---|---|
| **No. patients** | 203 | 456 | 352 | 300 | 253 | 450 |
| **Onset to randomization** | 0-24 h | 0-24 h | 0-24 h | 0-24h | 0-12h | 0-7h or negative FLAIR if unknown time |
| **Age, years** | ≥18 | 18-80 | 18-85 | 18-85 | ≥18 | ≥18 |
| **NIHSS** | ≥ 10 | 6-30 | ≥ 10 | ≥ 6 | <26 | |
| **Pre-stroke mRS** | 0-1 | 0-1 | 0-1 | 0-1 | 0-2 | 0-1 |
| **Imaging selection criteria** | ASPECTS 3-5, CT or MRI (DWI) if < 6 hours LKW.<br>(If LKW 6-24 h FLAIR used) | - ASPECTS 3-5 (LKW 0-24 h)<br>- ASPECTS 0-2 (core 70-100ml if LKW 0-24 h)<br>- ASPECTS >5 (LKW 6-24 h and core 70-100 ml) | ASPECTS of 3-5<br>(core volume ≥50 ml on CTP) | NCCT ASPECTS 2-5 | NCCT or DWI ASPECTS 3-5 | NCCT or MRI<br>ASPECTS 0-5<br>≥ 80yo, ASPECTS 4 or 5 |

# Large Core Definitions

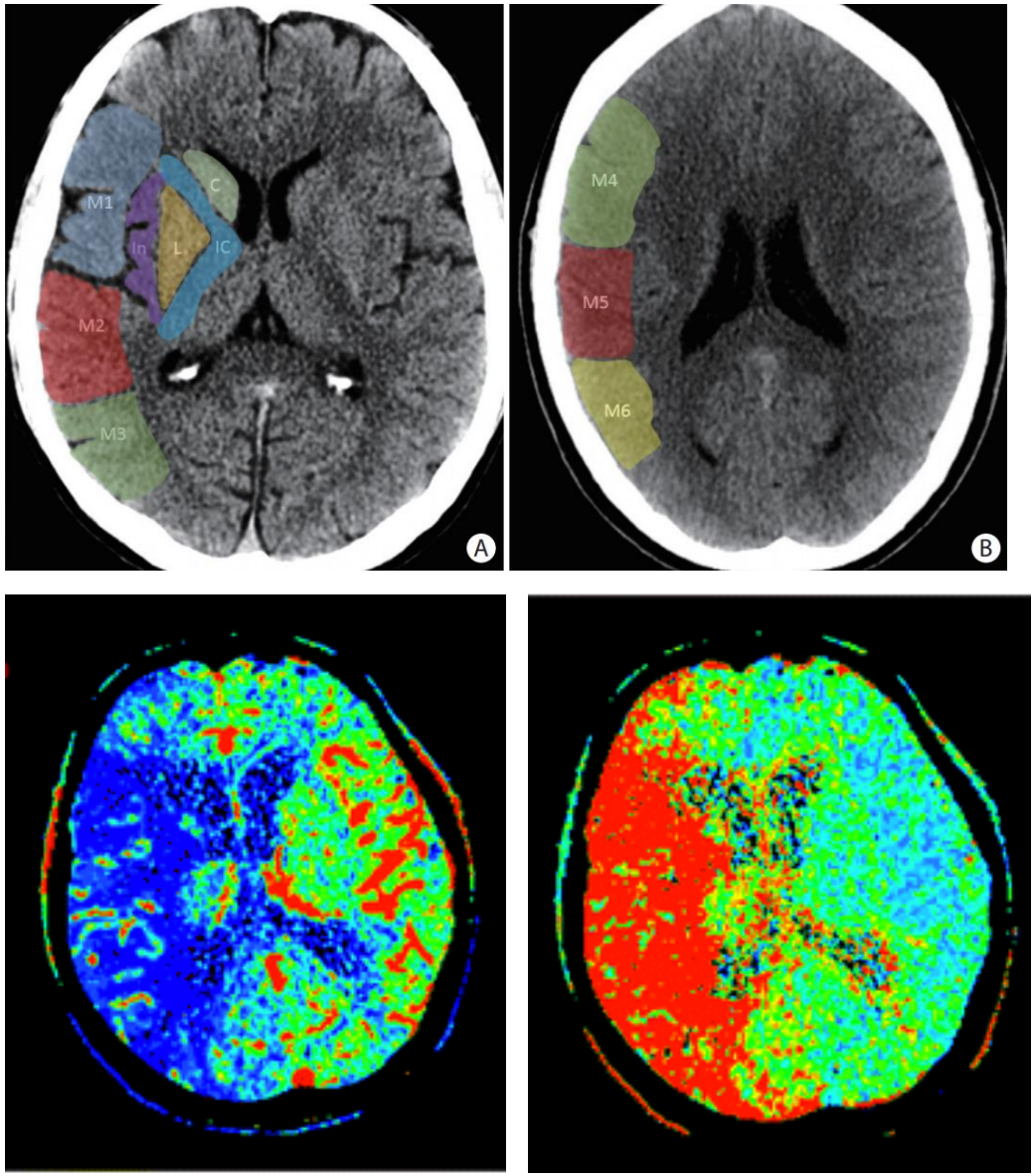
**ASPECTS: 0 to 5**

- Semi-quantitative
- Lower score on MRI than CT

**Ischemic core: >50ml/>70 ml**

**-** CTP measures the volume of reduced blood flow at the time of acquisition

- MRI measures restricted diffusion / cytotoxic edema




Abdalkader M et al. J of Stroke 2023;25(1):55-71.

# Endovascular Thrombectomy for Large Ischemic Core Stroke

## A Systematic Review and Meta-Analysis of Randomized Controlled Trials

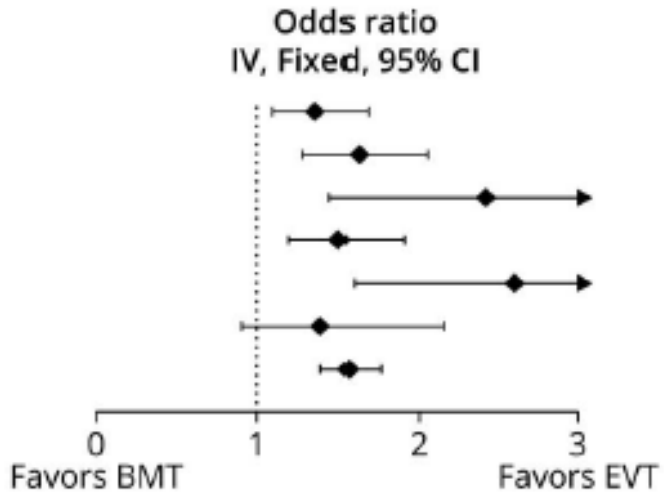
A

Score on the modified rankin scale at 90 days

| Study | LogOR | SE | Weight (%) | Odds ratio IV, Fixed, 95% CI |
|---|---|---|---|---|
| ANGEL-ASPECT | 0.31 | 0.11 | 30.6 | 1.4 (1.1, 1.7) |
| LASTE | 0.49 | 0.12 | 24.7 | 1.6 (1.3, 2.1) |
| RESCUE-Japan LIMIT | 0.88 | 0.26 | 5.3 | 2.4 (1.5, 4.0) |
| SELECT2 | 0.41 | 0.12 | 26.2 | 1.5 (1.2, 1.9) |
| TENSION | 0.95 | 0.24 | 6.0 | 2.6 (1.6, 4.2) |
| TESLA | 0.34 | 0.22 | 7.2 | 1.4 (0.9, 2.2) |
| **Total (95% CI)** | | | **100.0** | **1.6 (1.4, 1.8)** |

Heterogeneity: $Tau^2 = 0.019$; $Chi^2 = 9.09$, df = 5 ($p = 0.11$); $I^2 = 45\%$

Test for overall effect: $z = 7.63$ ($p < 0.01$)



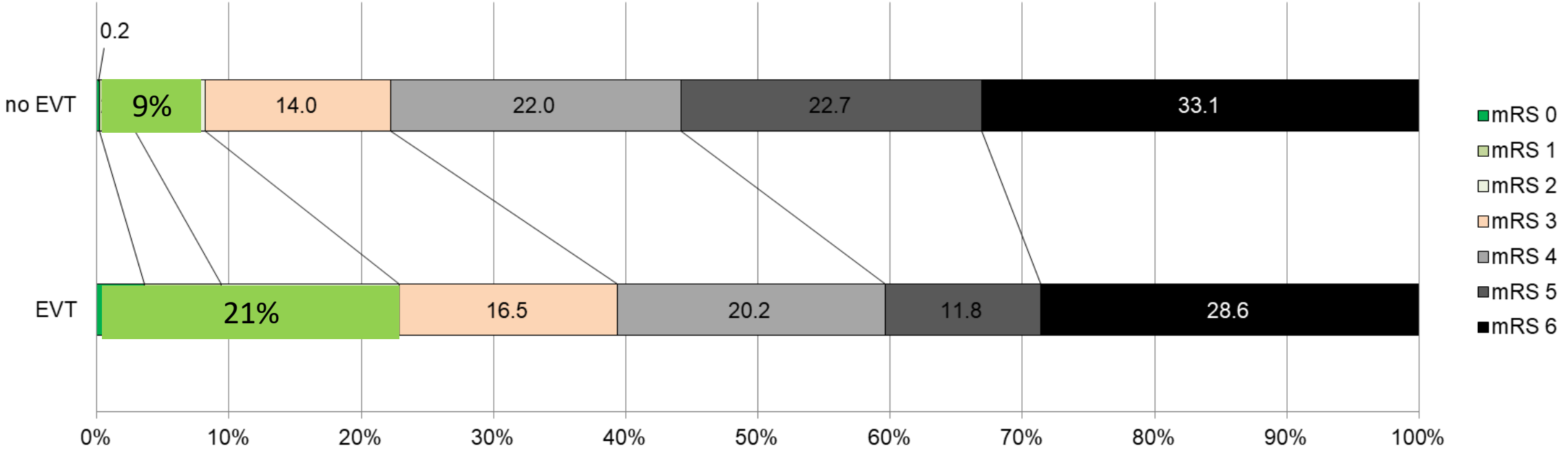

90-day mRS: EVT vs BMT, OR 1.6 [95% CI 1.4, 1.8]

Liu C et al. Neurology 2025;104:e213443

*Systematic Review*

# Mechanical Thrombectomy in Ischemic Stroke with a Infarct Core: A Meta-Analysis of Randomized Contro

Michele Romoli [1,*], Lucia Principiotta Cariddi [2], Marco Longoni [1,†], Gianluca Stufano [1], Sebastiano Giacomozzi [1], Luca Pompei [2], Francesco Diana [3,†], Lucio D'Anna [4,5,†], Simona Sacco [6,†] and Simone Vidale [2,†]



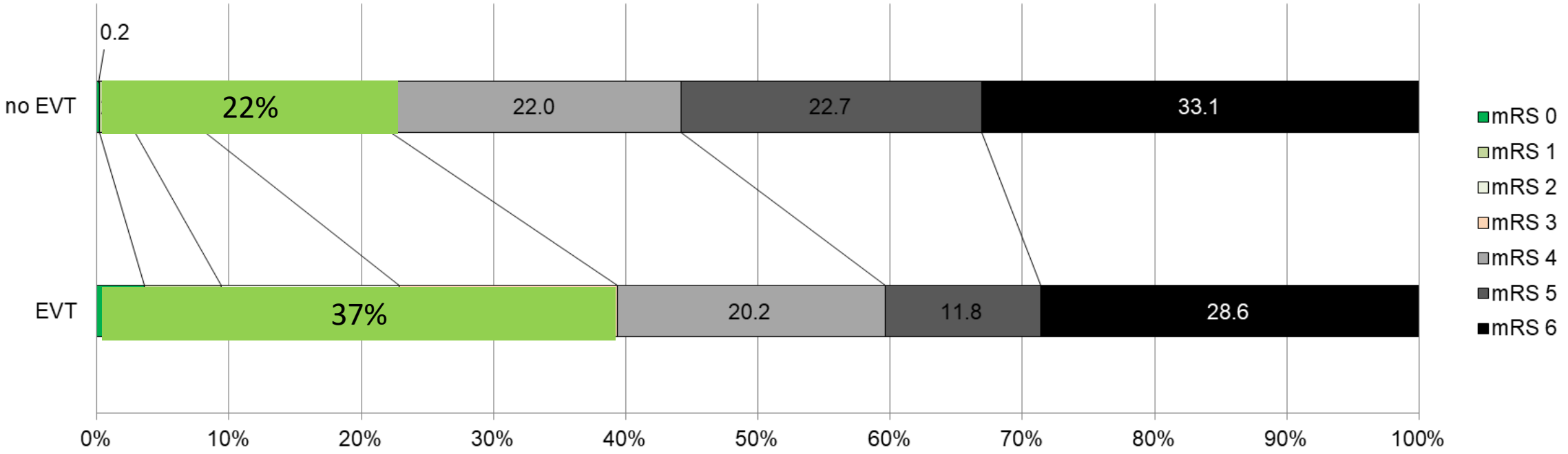

**90-day mRS 0-2**: OR 2.47, 95%CI 1.5–4.0, p<0.001

Romoli M et al. J Clin. Med. 2024, 13, 4280

*Systematic Review*

# Mechanical Thrombectomy in Ischemic Stroke with a Infarct Core: A Meta-Analysis of Randomized Contro

Michele Romoli [1,*], Lucia Principiotta Cariddi [2], Marco Longoni [1,†], Gianluca Stufano [1], Sebastiano Giacomozzi [1], Luca Pompei [2], Francesco Diana [3,†], Lucio D'Anna [4,5,†], Simona Sacco [6,†] and Simone Vidale [2,†]




**90-day mRS 0-3**: OR 2.20, 95%CI 1.7–2.8, p<0.001 (5 RCTs)

Romoli M et al. J Clin. Med. 2024, 13, 4280

# Symptomatic ICH in Large Ischemic Core

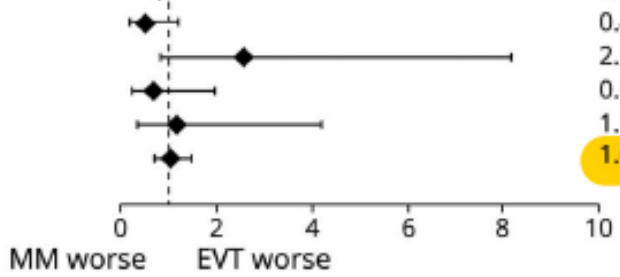
6 Randomized trials Meta-analysis, Symptomatic ICH Risk: **5.5**% vs. 3.2%

RR 1.71 [95% CI, 1.09–2.66]

Real-Life, Observational Meta-analysis, Symptomatic ICH Risk: **9.6%** vs. 7.9%

C. sICH

| Cohort studies | EVT Events/total (%) | MM Events/total (%) | Risk ratio M-H, fixed, 95% CI | Risk ratio M-H, fixed, 95% CI | Weight (%) |
|---|---|---|---|---|---|
| Ref. #44 | 8/62 (12.90) | 3/43 (6.98) | | 1.85 (0.52, 6.58) | 6.90 |
| Ref. #43 | 26/126 (20.63) | 5/35 (14.29) | | 1.44 (0.60, 3.49) | 15.30 |
| Ref. #42 | 6/163 (3.68) | 14/287 (4.88) | | 0.75 (0.30, 1.93) | 19.80 |
| Ref. #26 | 3/60 (5.00) | 3/48 (6.25) | | 0.80 (0.17, 3.79) | 6.50 |
| Ref. #41 | 9/165 (5.45) | 8/70 (11.43) | | 0.48 (0.19, 1.19) | 21.90 |
| Ref. #45 | 7/36 (19.44) | 4/53 (7.55) | | 2.58 (0.81, 8.16) | 6.30 |
| Ref. #27 | 4/49 (8.16) | 13/108 (12.04) | | 0.68 (0.23, 1.97) | 15.80 |
| Ref. #40 | 3/28 (10.71) | 7/76 (9.21) | | 1.16 (0.32, 4.19) | 7.40 |
| Total | 66/689 (9.58) | 57/720 (7.92) | | 1.01 (0.70, 1.46) | 100.00 |
| Heterogeneity: $Chi^2 = 7.68$, df = 7 ($p = 0.36$); $I^2 = 9\%$ | | | | | |
| Test for overall effect: $z = 0.06$ ($p = 0.95$) | | | | | |



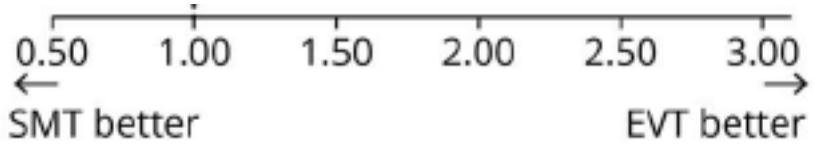

Li Q, Abdalkader, et al. Neurology 2023;101(9):e922-e932.

# Does size of the infarct matter?

# Endovascular Thrombectomy for Large Ischemic Core Stroke

## A Systematic Review and Meta-Analysis of Randomized Controlled Trials

| Subgroup | LogOR | SE | Weight (%) | Odds ratio (95% CI) | *p* for differences |
|---|---|---|---|---|---|
| **Infarct size** | | | | | 0.53 |
| < 70 mL | 0.32 | 0.12 | 45.3 | 1.4 (1.1, 1.7) | |
| ≥ 70 mL | 0.42 | 0.11 | 54.7 | 1.5 (1.2, 1.9) | |
| **Infarct size** | | | | | 0.97 |
| < 100 mL | 0.48 | 0.13 | 67.3 | 1.5 (1.2, 2.0) | |
| ≥ 100 mL | 0.43 | 0.10 | 36.3 | 1.5 (1.3, 1.9) | |
| **Infarct size** | | | | | 0.71 |
| < 150 mL | 0.41 | 0.12 | 59.2 | 1.5 (1.2, 1.9) | |
| ≥ 150 mL | 0.48 | 0.15 | 40.8 | 1.6 (1.2, 2.2) | |




Liu C et al. Neurology 2025;104:e213443

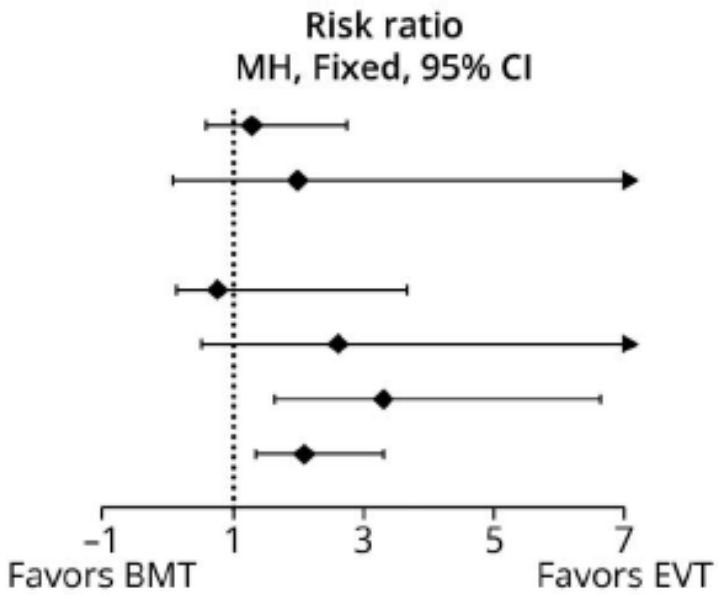
# ASPECTS 0 to 2 subgroup (6 trials)

A

**90-Day mRS 0–3**

| Study | EVT Events/Total (%) | BMT Events/Total (%) | Weight (%) | Risk ratio MH, Fixed, 95% CI |
|---|---|---|---|---|
| ANGEL-ASPECT | 11/32 (34.37) | 8/30 (26.67) | 37.0 | 1.3 (0.6, 2.8) |
| RESCUE-Japan LIMIT | 1/5 (20.00) | 0/3 (0.00) | 2.7 | 2.0 (0.1, 37.8) |
| SELECT2 | 0/12 (0.00) | 0/8 (0.00) | 0.0 | |
| TENSION | 2/15 (13.33) | 4/23 (17.39) | 14.2 | 0.8 (0.2, 3.7) |
| TESLA | 4/22 (18.18) | 2/29 (6.90) | 7.7 | 2.6 (0.5, 13.1) |
| LASTE | 27/86 (31.40) | 9/95 (9.47) | 38.4 | 3.3 (1.7, 6.6) |
| **Total (95% CI)** | **45/172 (26.16)** | **23/188 (12.23)** | **37.0** | **2.1 (1.4, 3.3)** |

Heterogeneity: $Tau^2 = 0.076$; $Chi^2 = 4.90$, df = 4 ($p = 0.30$); $I^2 = 18\%$
Test for overall effect: $z = 3.26$ ($p < 0.01$)




Liu C et al. Neurology 2025;104:e213443

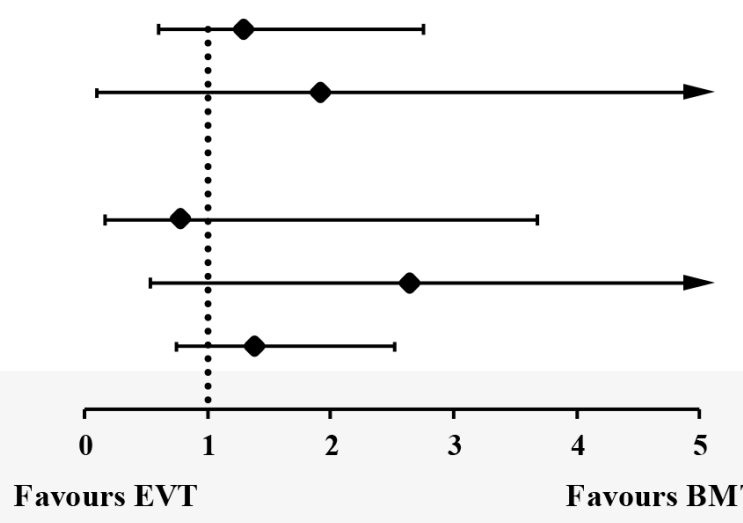
# ASPECTS 0 to 2 – Removing LASTE

**90-day mRS 0-3**

| Study | EVT Events /Total (%) | BMT Events /Total (%) | Weight | Risk Ratio MH, Fixed, 95% CI |
|---|---|---|---|---|
| **ANGEL-ASPECT** | 11/32 (34.38) | 8/30 (26.67) | 60.1% | 1.29 [0.60, 2.76] |
| **RESCUE-Japan LIM** | 1/5 (20.00) | 0/3 (0.00) | 4.4% | 1.91 [0.10, 34.92] |
| **SELECT2** | 0/12 (0.00) | 0/8 (0.00) | 0.0% | |
| **TENSION** | 2/15 (13.33) | 4/23 (17.39) | 23.0% | 0.77 [0.16, 3.68] |
| **TESLA** | 4/22 (18.18) | 2/29 (6.90) | 12.6% | 2.64 [0.53, 13.12] |
| **Total (95% CI)** | **18/86 (20.93)** | **14/93 (15.05)** | **100.0%** | **1.37 [0.74, 2.52]** |

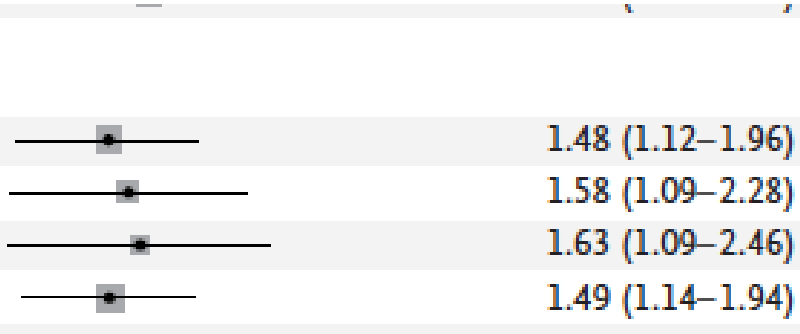
Heterogeneity: Tau^2 = 0.000; Chi^2 = 1.24, df = 3 (P = 0.74); I^2 = 0%
Test for overall effect: Z = 1.01 (P = 0.31)

**(A)**



# Does time to treatment matter?

| Subgroup | No. of Patients | Generalized Odds Ratio (95% CI) |
|---|---|---|
| Interval between time that patient was last known to be well and randomization | | |
| <12 hr | 211 | 1.48 (1.12–1.96) |
| ≥12 hr | 141 | 1.58 (1.09–2.28) |
| <6 hr | 100 | 1.63 (1.09–2.46) |
| ≥6 hr | 252 | 1.49 (1.14–1.94) |

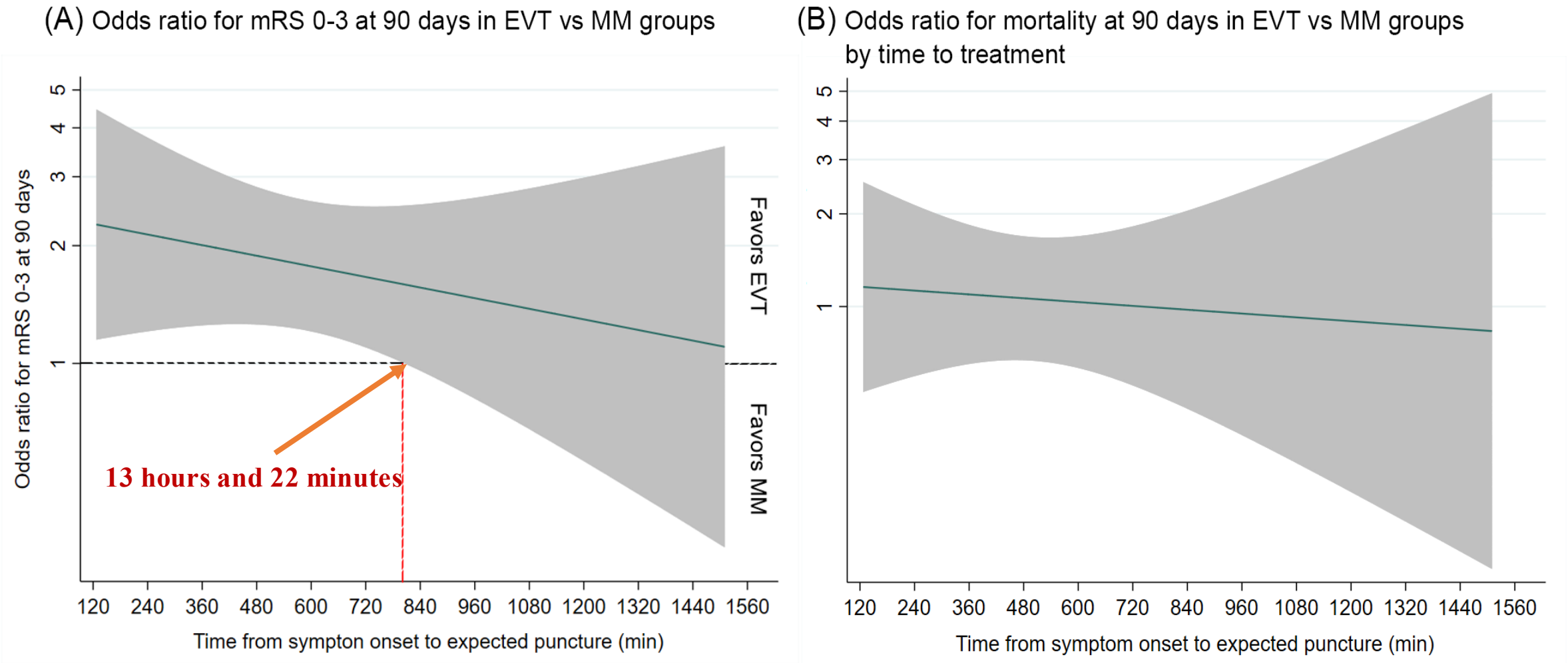


Sarraj A et al. NEJM 2023

SELECT2 TRIAL

# ANGEL ASPECT

湘潭市中心医院
景仰生命 惠济百姓
Xiangtan Central Hospital




The lower 95% CI for estimated treatment benefit crossed 1 at 13 h 22 minutes, but the point estimate exceeded 1.0 throughout the 24h period and time-benefit interaction *P* value was 0.38.

Yuan G et al., ISC 2024

# TESLA Post Hoc:

**0- to 6-hour window**

90-day mRS 0-2: EVT 27%(11/41) vs MM 5% (2/39; absolute diff., 22%; 95%CI, 5.5% to 37%).
90-day mRS 0-3: EVT 39% (16/41) vs MM 18%(7/39; absolute diff., 21%; 95%CI, 1.2% to 39%)

Mortality 90 days: EVT 22% (9/41) vs MM 38%(15/39; absolute diff., −17%; 95%CI, −35%to 3.5%) NS

**6- to 24-hour window**

90-day mRS 0-2: EVT 10% (11/110) vs MM 10% (11/107); absolute diff.,−0.3%; 95%CI,−8.7%to8.0%);
90-day mRS 0-3: EVT 26% (29/110) vs MM 21% (22/107); absolute diff., 5.8%; 95% CI, −5.5% to 17%)

Mortality at 90 days EVT 40% (44/110) vs 32% (34/107); absolute diff., 8.2%; 95% CI, −4.5% to 21%)

Yoo A, Zaidat O, et al. TESLA. JAMA 2024

# Does Penumbra - Core mismatch matter?

Definition 1: N=161

| | | |
|---|---|---|
| Mismatch Ratio | Penumbra (Tmax > 6s)/Core volume | 1.8 |
| Mismatch Volume | Penumbra (Tmax>6s) - Core volume | 15 ml |

Definition 2: N=43

| | | |
|---|---|---|
| Mismatch Ratio | Penumbra (Tmax > 6s)/Core volume | 1.2 |
| Mismatch Volume | Penumbra (Tmax>6s) - Core volume | 10 ml |

JAMA | Original Investigation

## Endovascular Thrombectomy for Large Ischemic Stroke Across Ischemic Injury and Penumbra Profiles

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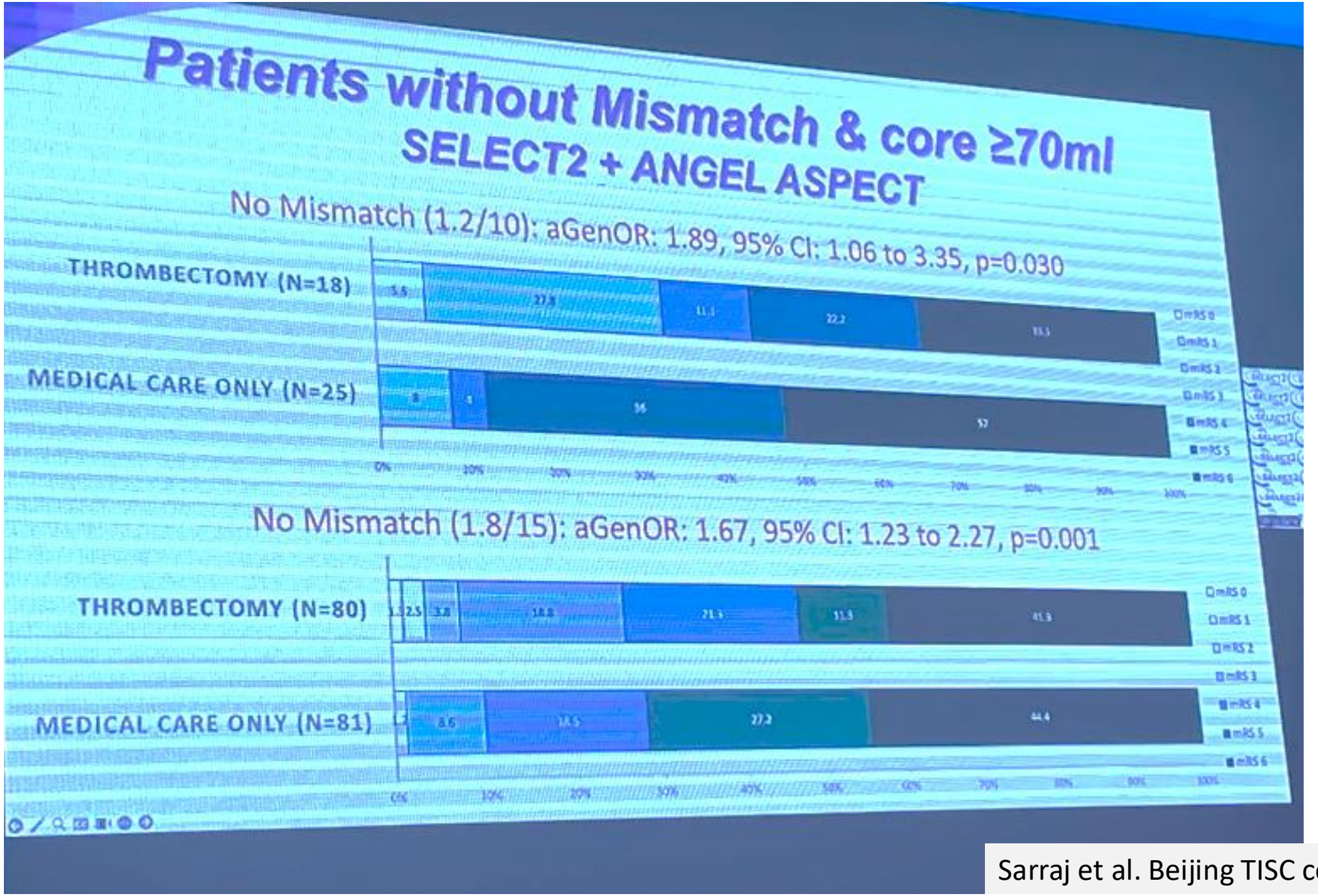
## Association of Mismatch Profiles and Clinical Outcome from Endovascular Therapy in Large Infarct: A Post-Hoc Analysis of the ANGEL-ASPECT Trial

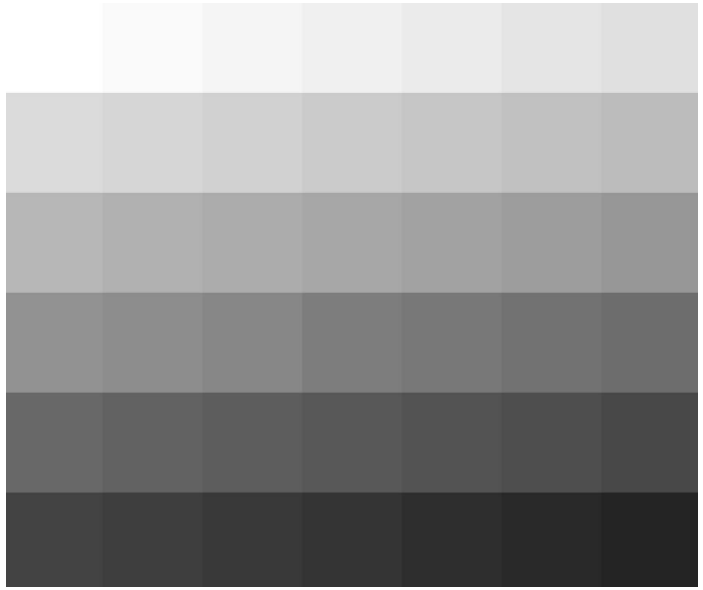
Xiaochuan Huo, MD,[1] Thanh N Nguyen, MD,[2] Dapeng Sun, MD, PhD,[3,4] Raynald, MD,[3] Yuesong Pan, PhD,[3,4] Gaoting Ma, MD,[5] Xu Tong, MD,[3] Mengxing Wang, PhD,[4] Ning Ma, MD,[3,4] Feng Gao, MD,[3,4] Dapeng Mo, MD,[3,4] Mohamad Abdalkader, MD,[2] Hesham E. Masoud, MD,[6] Raul G. Nogueira, MD,[7] and Zhongrong Miao, MD,[3,4] for the ANGEL-ASPECT study group

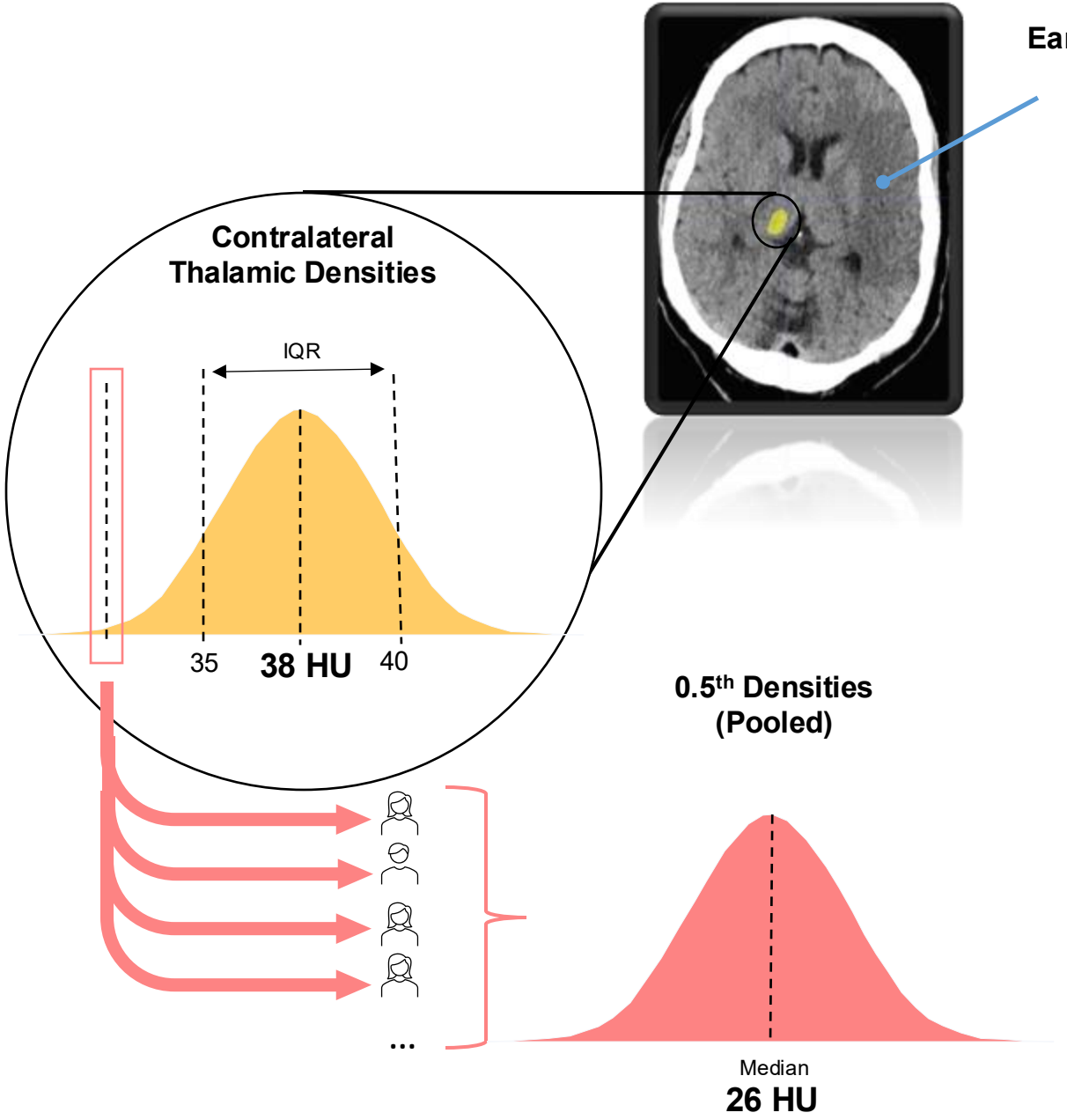



Sarraj et al. Beijing TISC conference 2024.

# ASPECTS

- Cortex vs subcortex
- Gray-white differentiation
- Window level settings
- Role of edema
- Shades of Grey





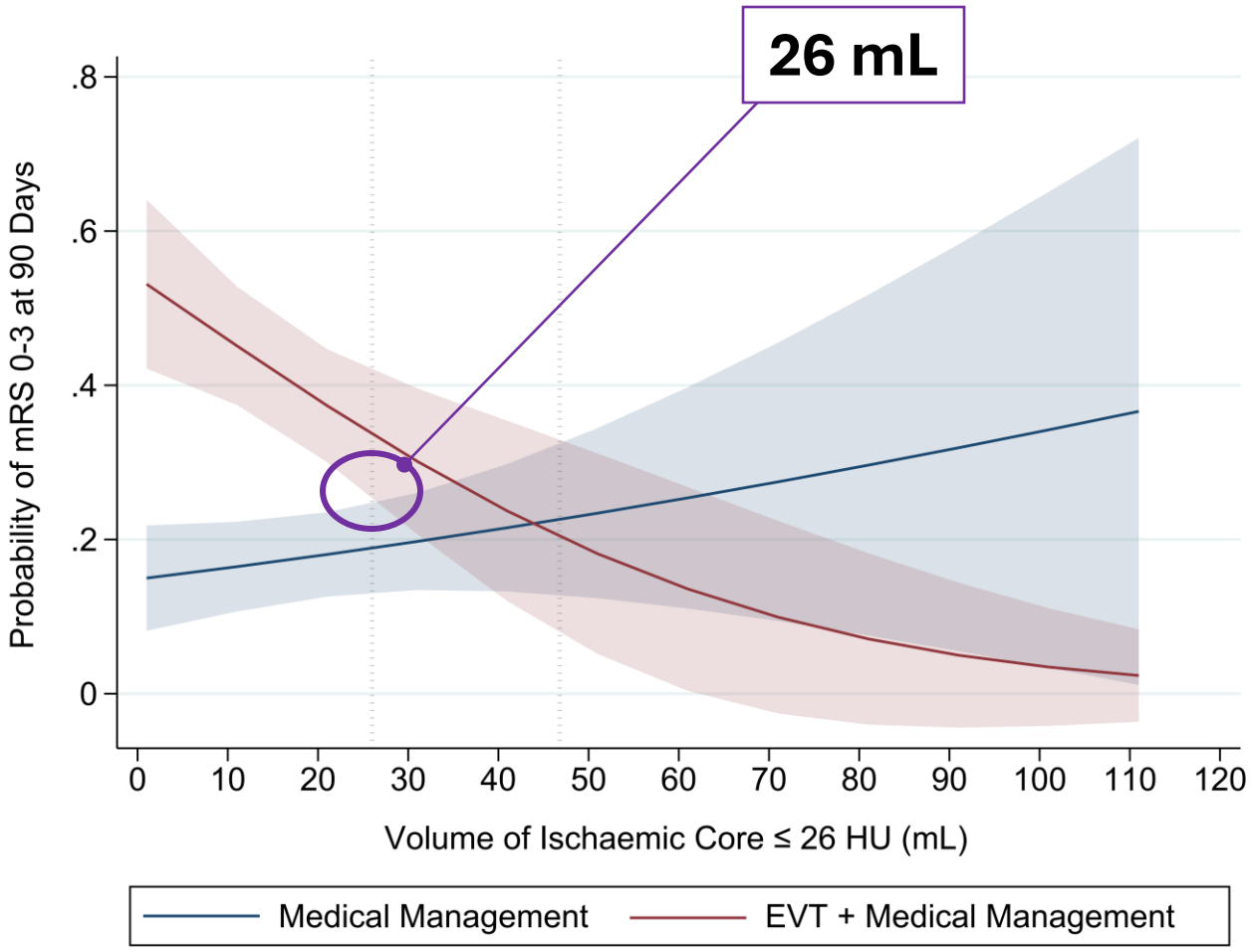

# 1 Defining Severe Hypodensity

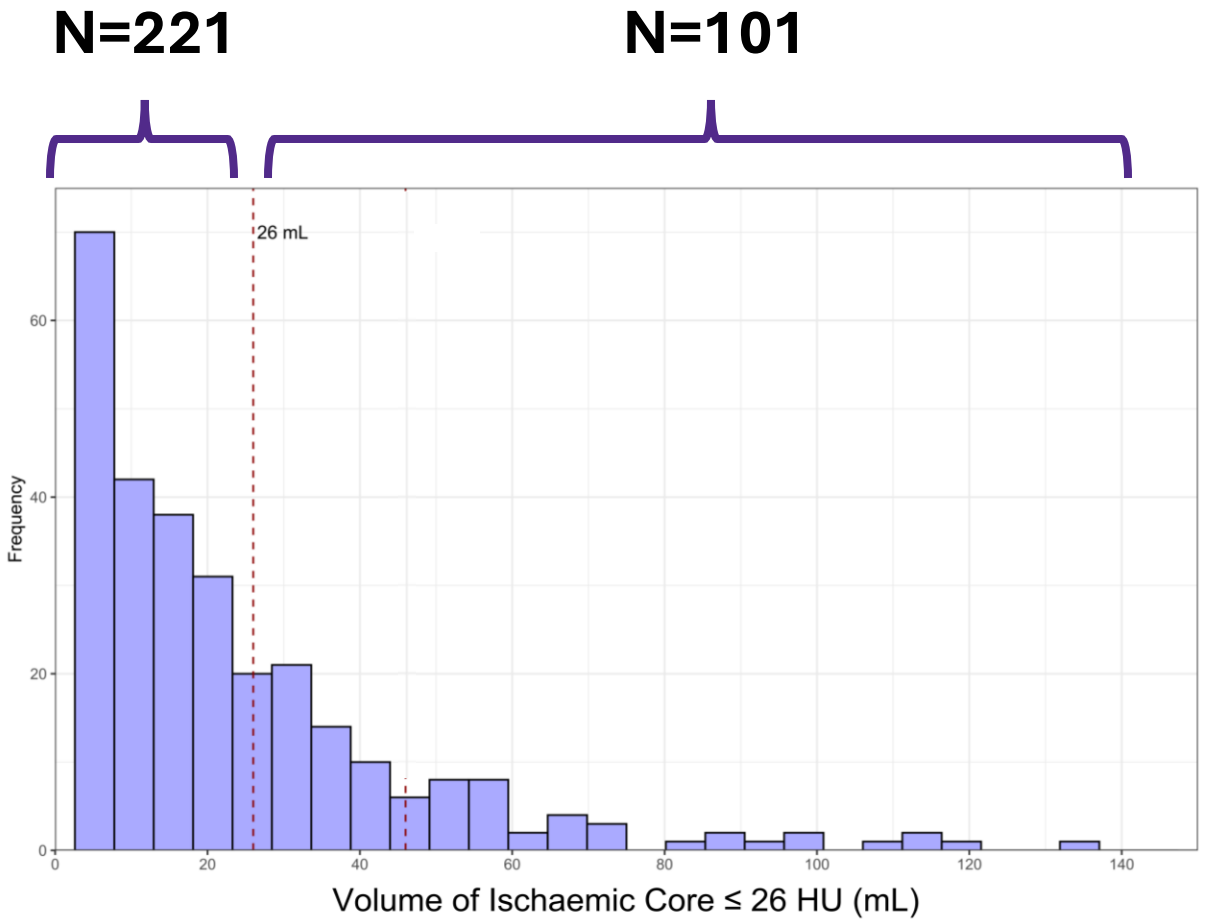
- Median density of contralateral thalami:
  - 38 HU (IQR: 35-40)
- Median 0.5$^{th}$ Percentile CI
  - 26 HU (IQR: 23-29)

***Severe Hypodensity Threshold Selected: 26 HU***

Yogendrakumar V, Campbell B, Sarraj A. ESOC May 2024, Basel

# Identifying a Clinically Relevant Volume



No significant benefit of EVT (vs MM) in patients with increasing volume of severe hypodensity on CT

Substantial volumes of severe hypodensity associated with more cerebral edema and higher need for hemicraniectomy after EVT

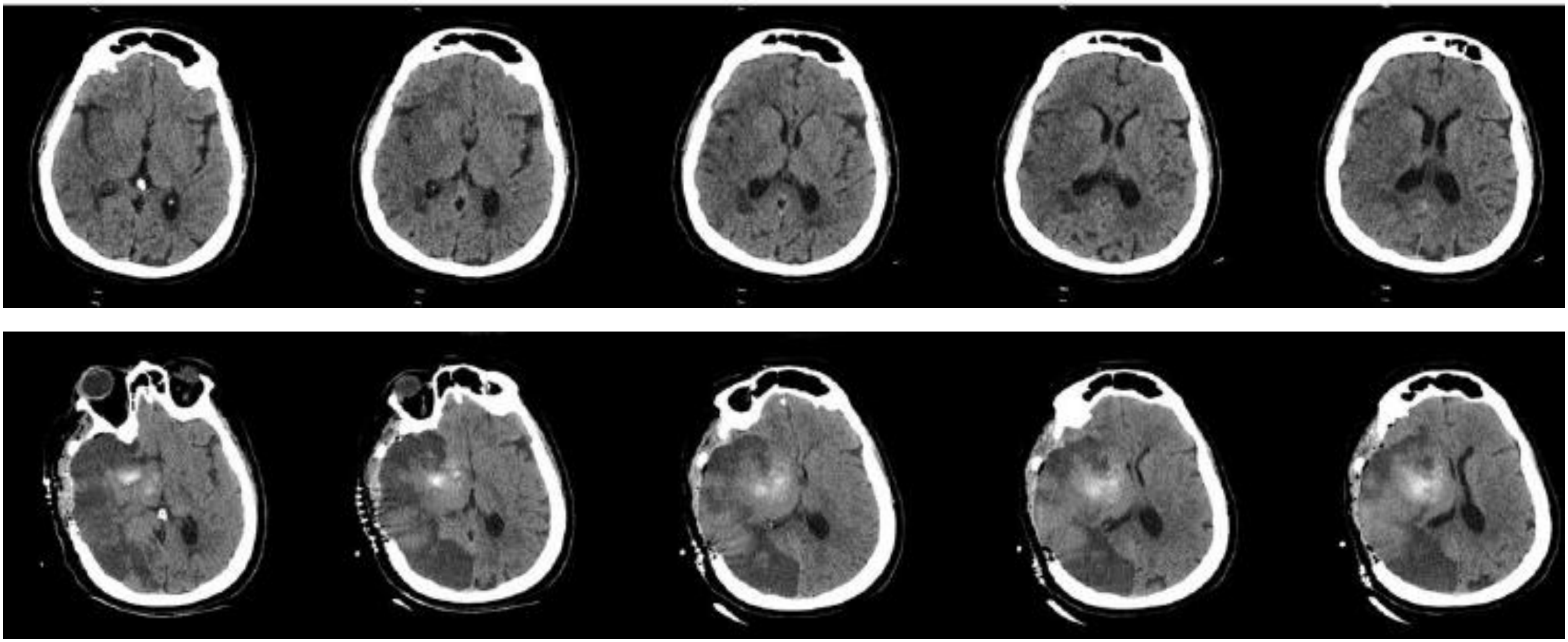
SELECT2 TRIAL

Yogendrakumar V, Campbell B, Sarraj A, et al.
ESOC 2024, Basel, Switzerland

Stroke 2025

# Association of Ischemic Core Hypodensity With Thrombectomy Treatment Effect in Large Core Stroke: A Secondary Analysis of the SELECT2 Randomized Controlled Trial

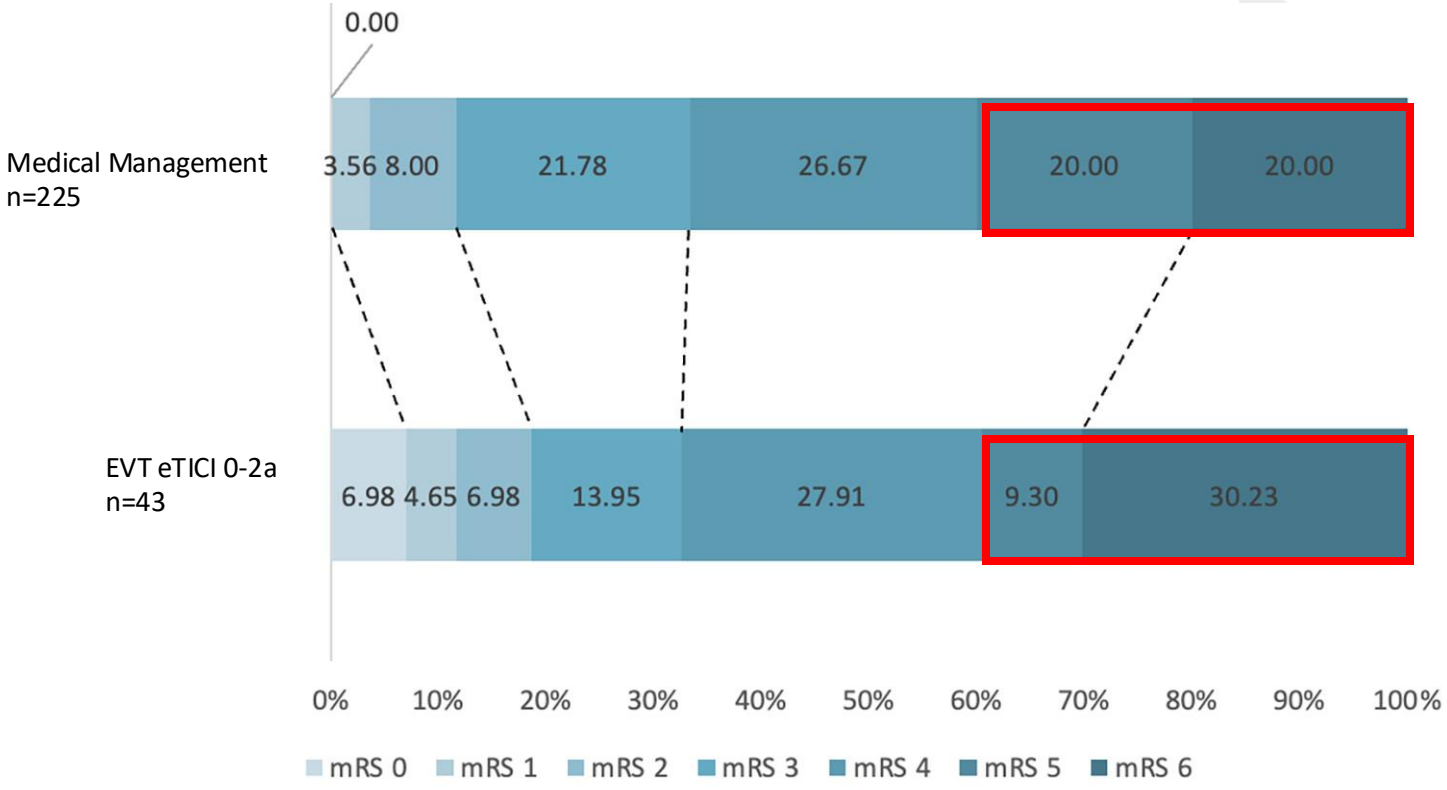
Yogendrakumar V et al. Stroke 2025



# Unsuccessful Recanalization vs. Medical Management of Patients with Large Ischemic Core

## Analysis of the ANGEL-ASPECT Randomized Trial

Dapeng Sun[1] · Thanh N. Nguyen[2] · Yuesong Pan[1,5] · Mengxing Wang[5] · Mohamad Abdalkader[2] · Hesham E. Masoud[3] · Alice Ma[4] · Xu Tong[1] · Gaoting Ma[6] · Xuan Sun[1] · Ligang Song[1] · Ning Ma[1] · Feng Gao[1] · Dapeng Mo[1] · Zhongrong Miao[1] · Xiaochuan Huo[1,7]



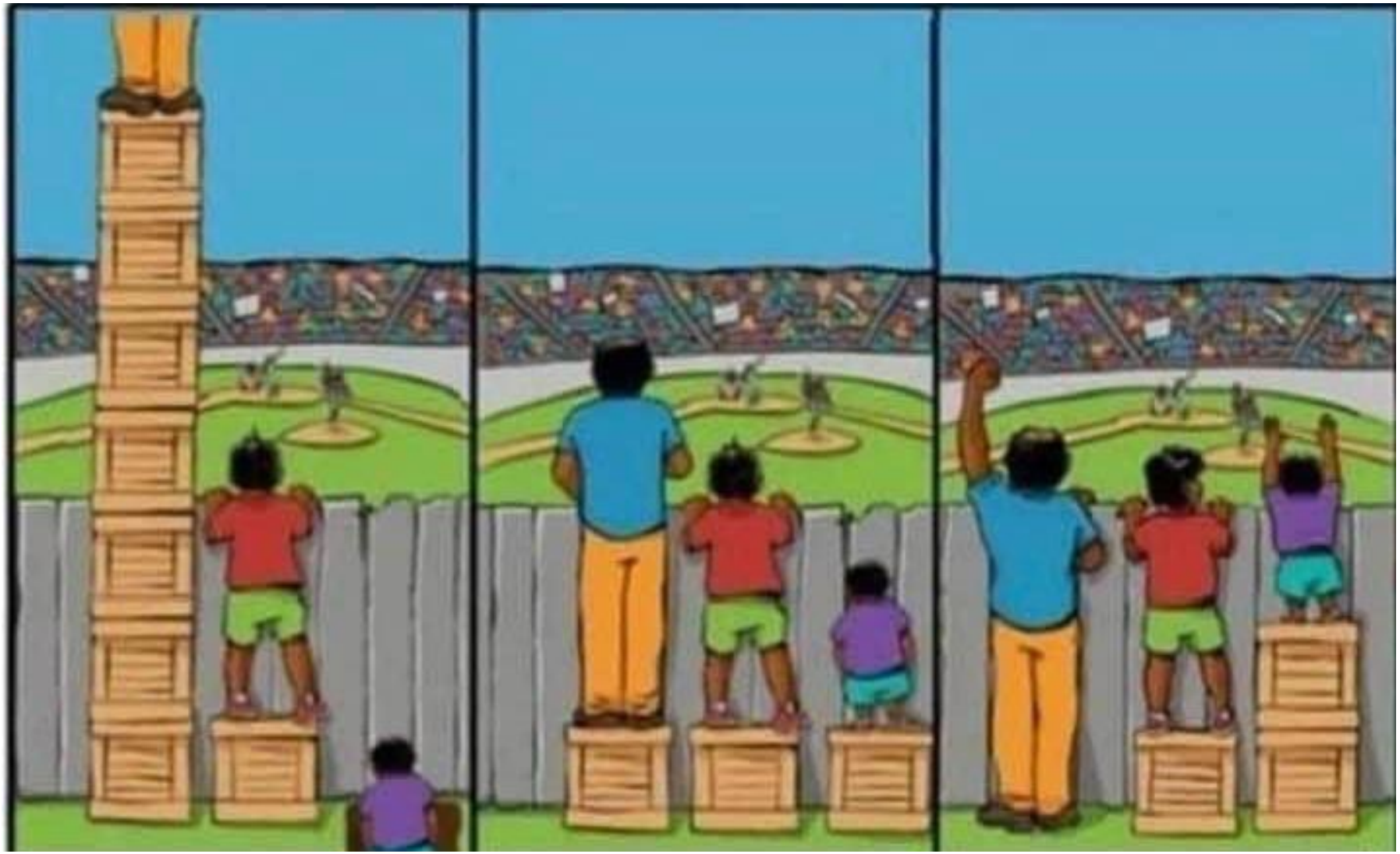

**Unsuccessful EVT (vs. MM)**

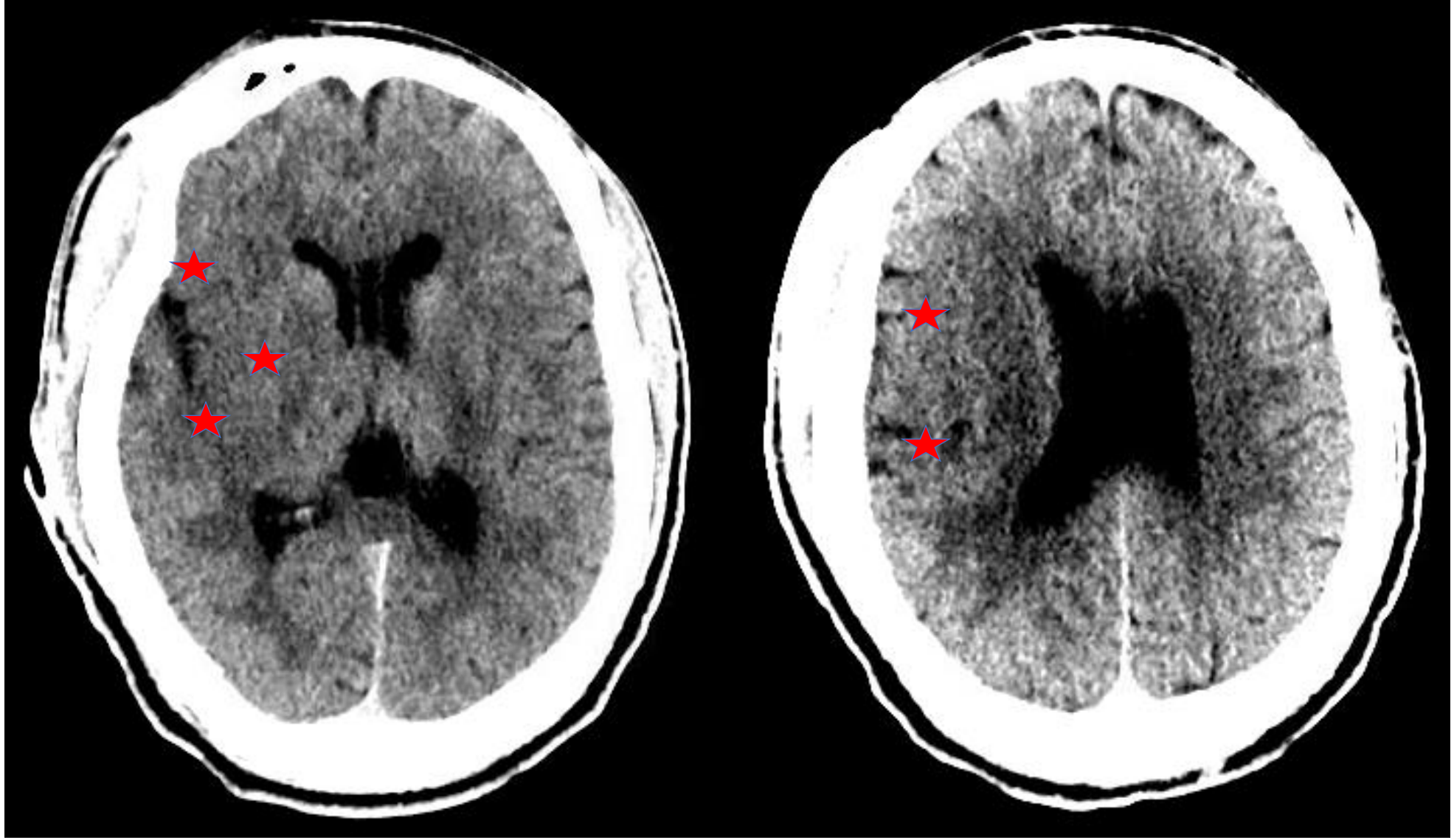
**Higher ICH** (55.8% vs. 17.3%, p< 0.001)

**Infarct volume growth** (142.7ml vs. 90.5ml, p< 0.001)

Craniectomy (18.6% vs. 3.6%, p< 0.001)

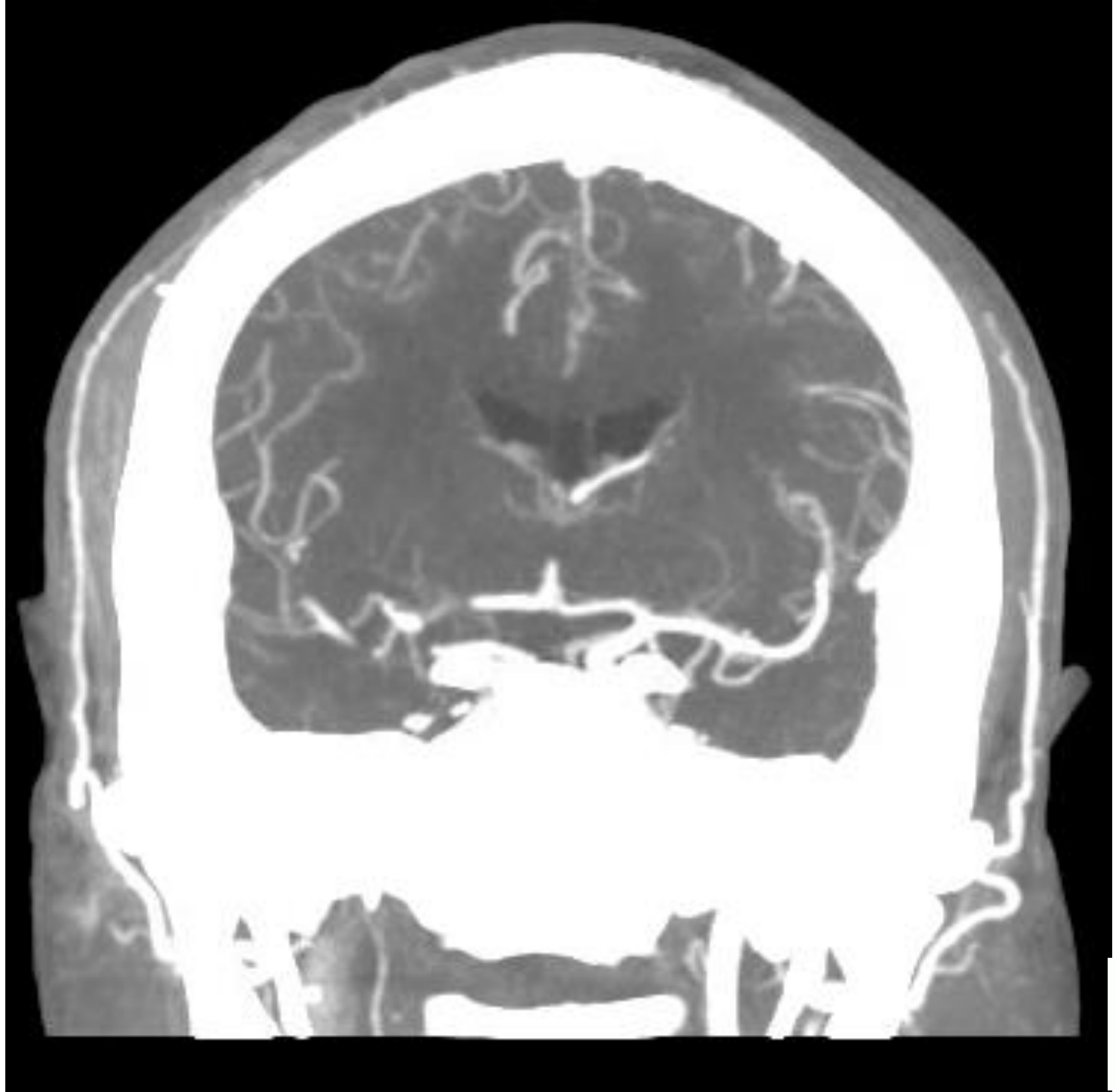
Sun D, Nguyen TN, Pan Y, et al.
Clin Neuroradiol 2023





BOSTON MEDICAL CENTER

EXCEPTIONAL CARE. WITHOUT EXCEPTION.



BOSTON MEDICAL CENTER

EXCEPTIONAL CARE. WITHOUT EXCEPTION.





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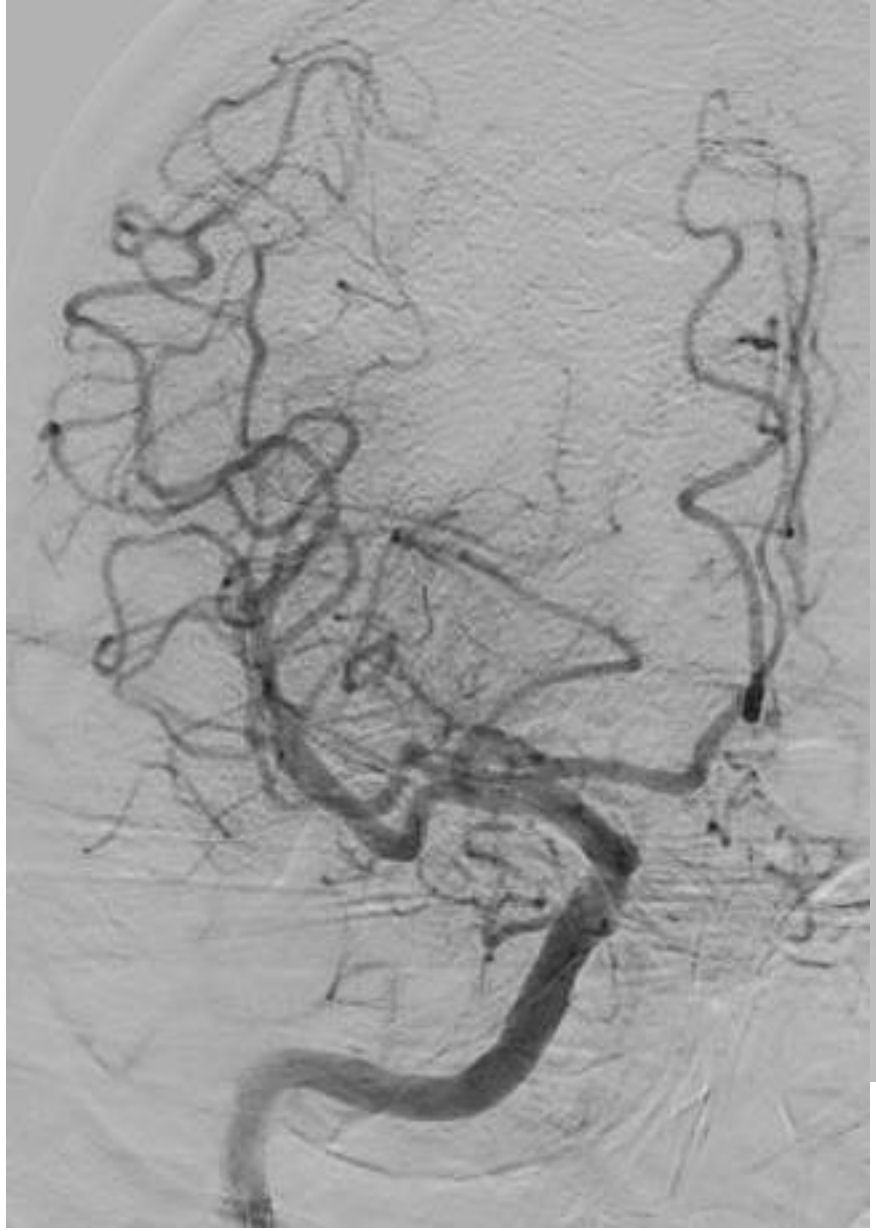

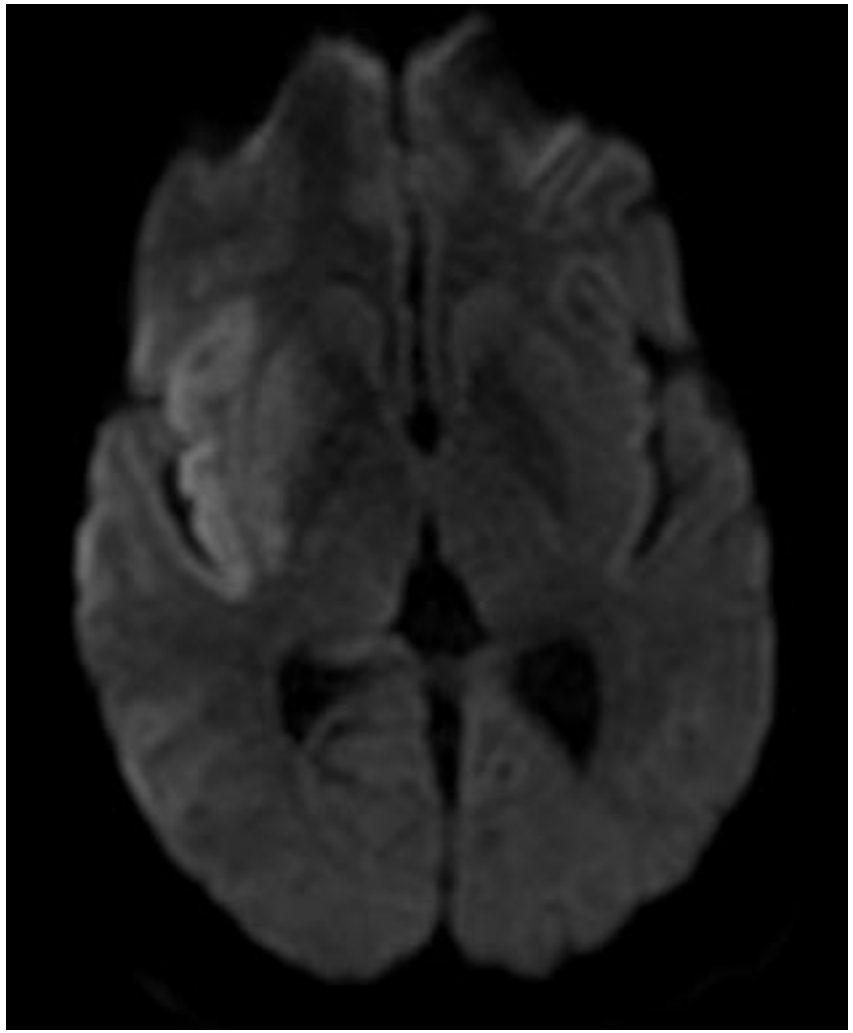

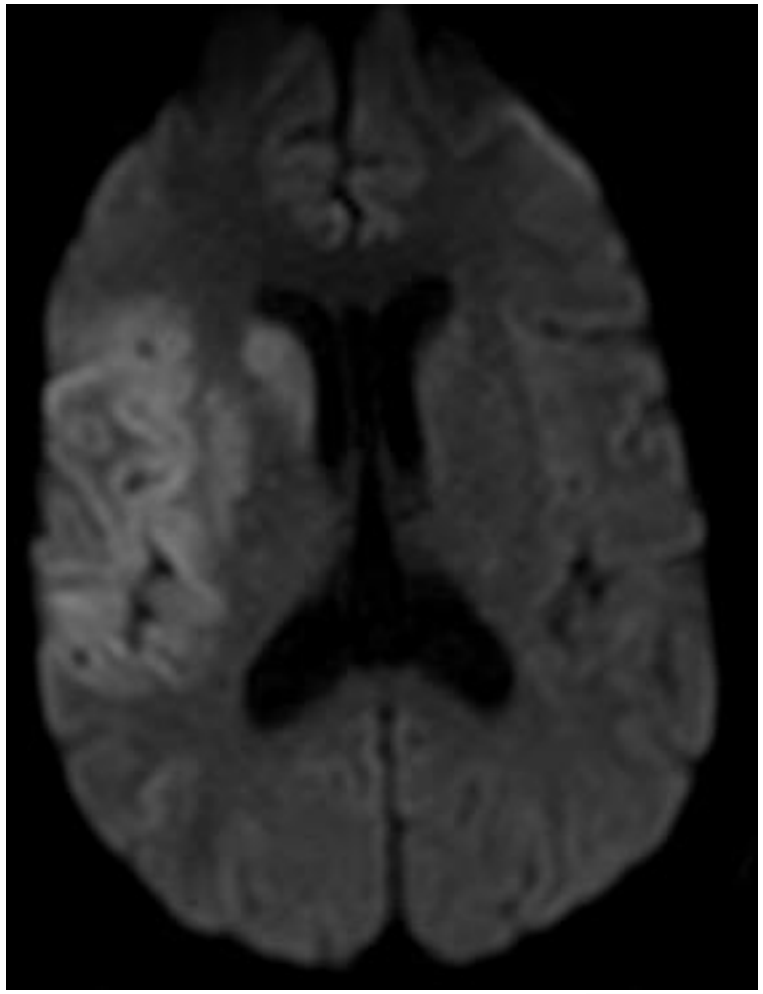

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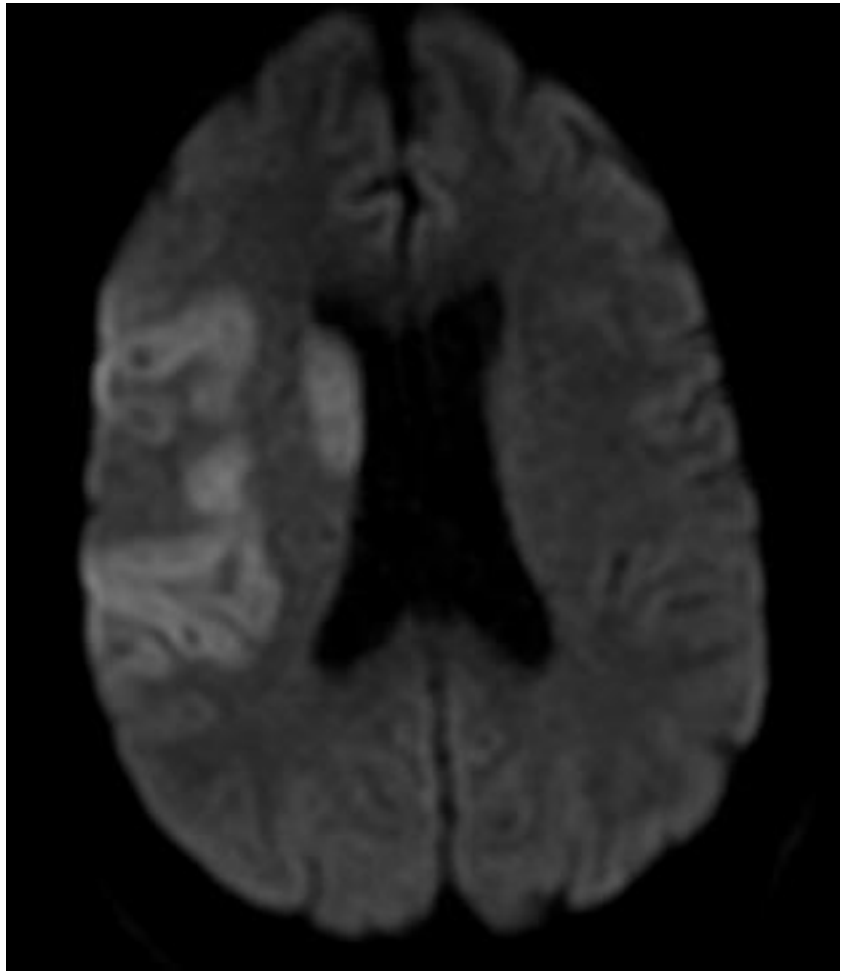

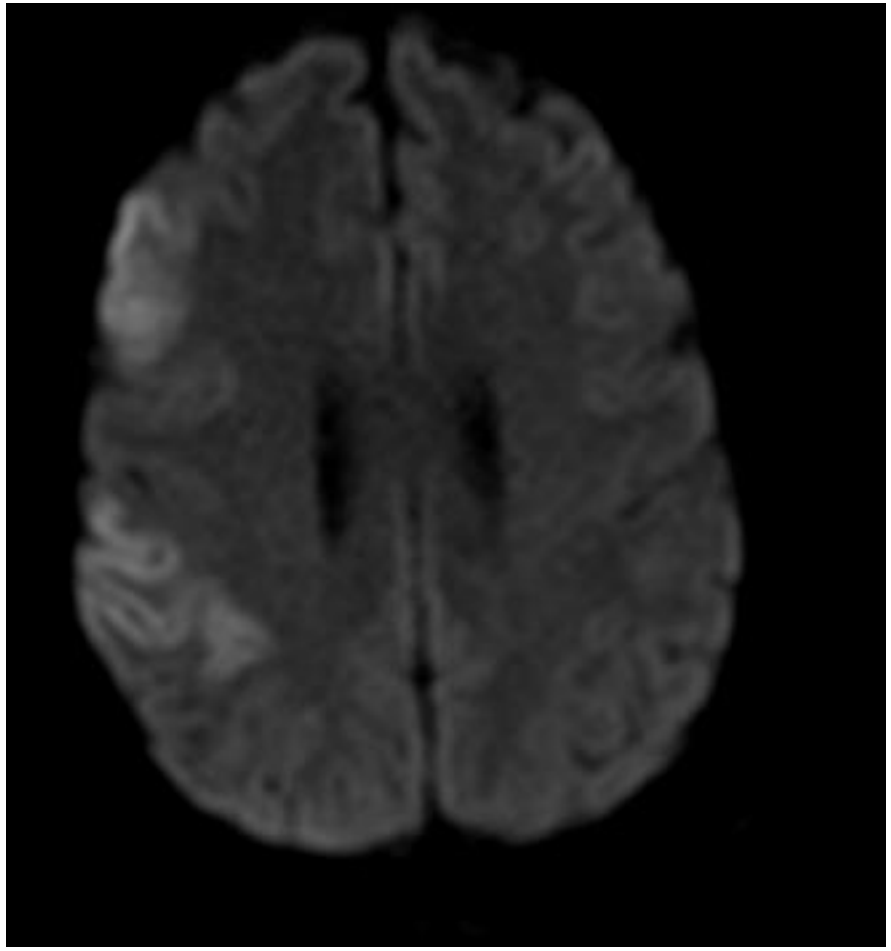

BOSTON MEDICAL CENTER

EXCEPTIONAL CARE. WITHOUT EXCEPTION.

# Large Ischemic Core Gaps

- ASPECTS 0 to 2 with CT selection
- Degree of hypodensity
- Role of mismatch in small and large ischemic core stroke
- Adjunctive therapy

# Conclusion

- Large ischemic core predicts lower likelihood of doing well with EVT but does not modify its treatment effect
- Earlier treatment with greater likelihood of benefit than later treatment
- ASPECTS 0 to 2 by NCCT uncertainty
- Even if there is no perfusion mismatch, EVT benefit seen
- The greater the volume of severity of hypodensity on CT scan, the lower the likelihood of EVT benefit vs. MM
- A simplified imaging protocol (CT/CTA) can be feasible for thrombectomy selection in light of large core data

  (TESLA 1-year, TENSION, SELECT2, ANGEL-ASPECT)


SVIN·25 ANNUAL MEETING

November 20-22, 2025 | Orlando, FL