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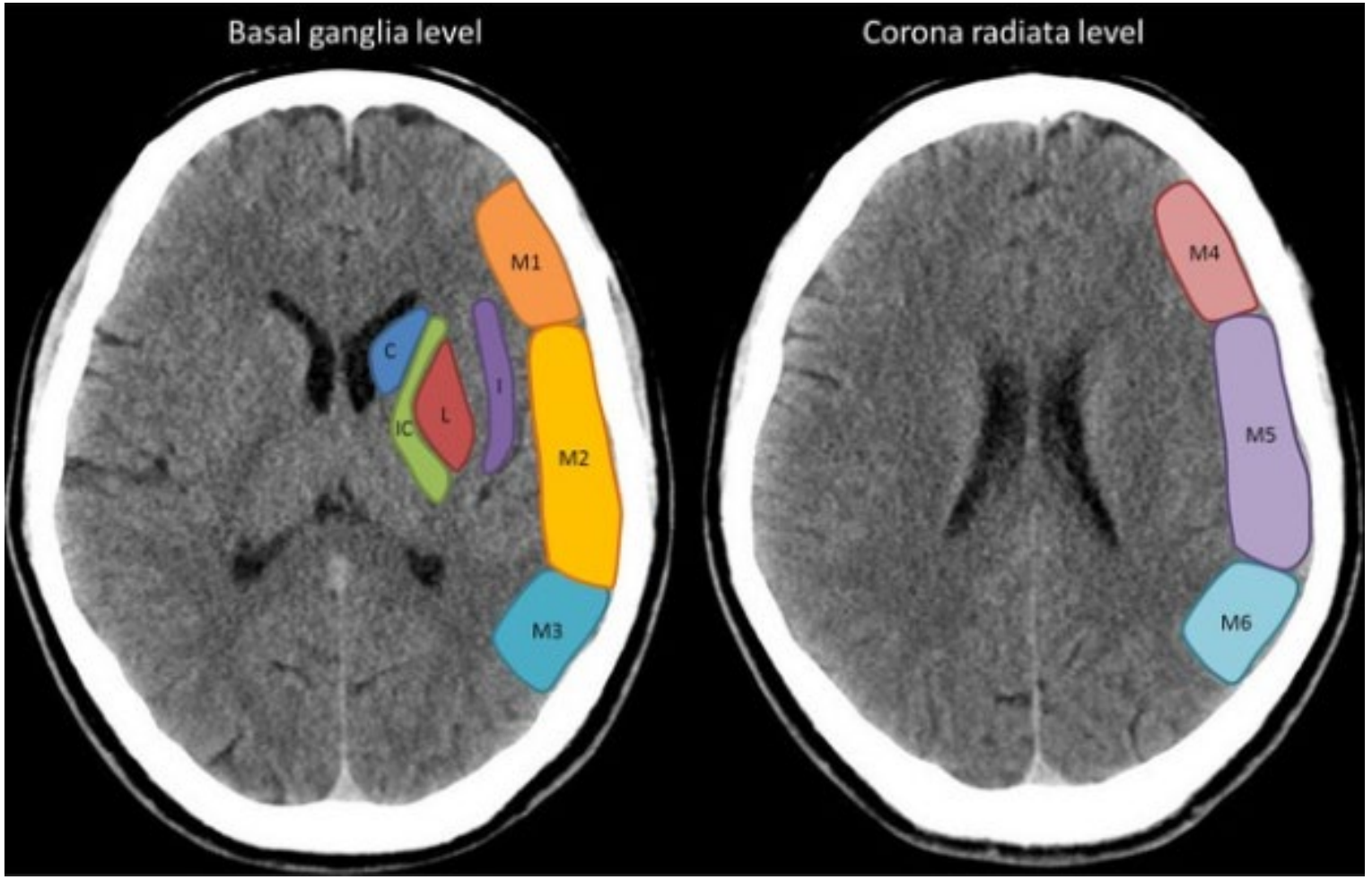
Are we really going to do mechanical thrombectomy of ASPECT less than 6?

Bhavika Kakadia, DO

What is ASPECT score?



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YES!

How big is the core?

How low is the ASPECT?

LKN?

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- American Heart Association/American Stroke Association guidelines, ASPECTS ≥6 prioritized for MT
- ASPECT ≤5 usually an exclusion criteria in most randomized trials
- However, LVO is predictor of poor functional outcome

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Mechanical thrombectomy in patients with acute ischemic stroke and ASPECTS ≤6: a meta-analysis

Federico Cagnazzo [1], Imad Derraz [1], Cyril Dargazanli [1], Pierre-Henri Lefevre [1], Gregory Gascou [1], Carlos Riquelme [1], Alain Bonafe [1], Vincent Costalat [1]

- Metanalysis of 17 studies, 1378patients

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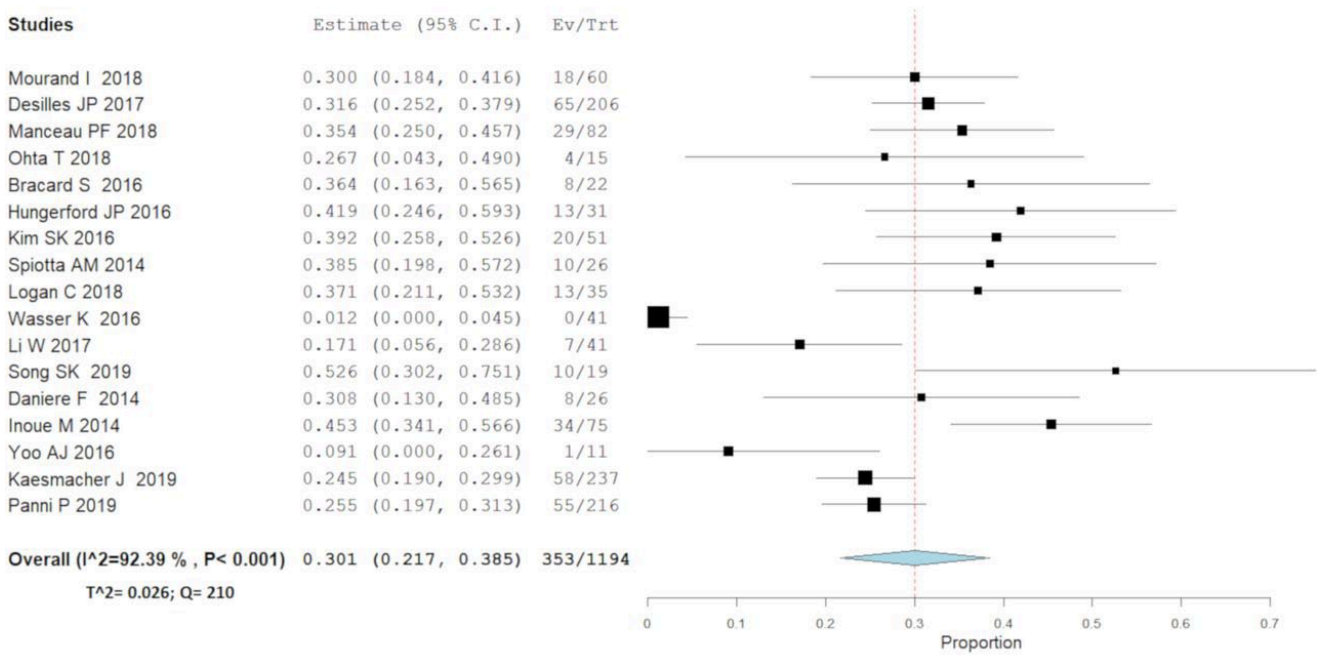
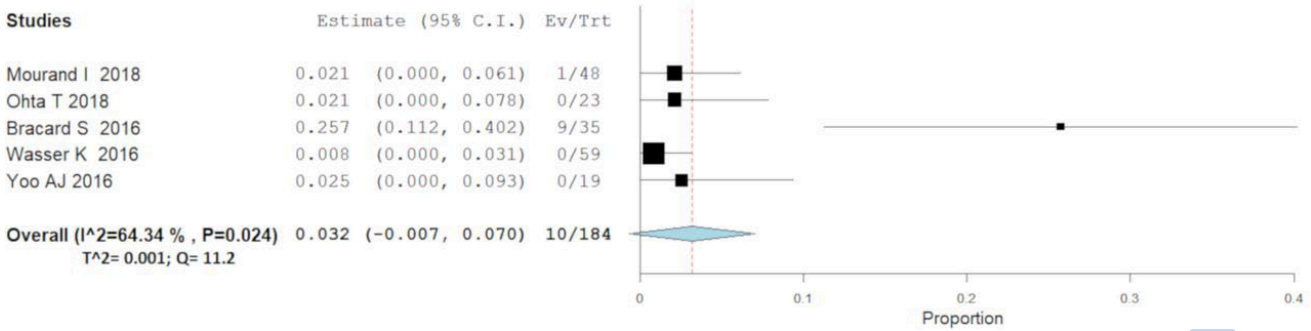
Proportion of mRS 0-2 at 3-months after MT

A



B

Proportion of mRS 0-2 at 3 months after medical treatment



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Outcomes

- MT was associated with higher rate of mRS 0-2 at 3 month follow up compared to medical/conservative management
- Successful reperfusion increased favorable outcome
- Rate of favorable outcome reduced with higher stroke volume (ASPECT 0-4)
  - Rate of ICH was not markedly increased
- Higher rates of mRS 0-2 in younger patients than older

RCTs

	TENSION	LASTE	TESLA	RESCUE- Japan LIMIT	SELECT 2	Angel ASPECT
	Europe, Canada	Europe, USA	USA	Japan	USA, Canada, Europe	China
Imaging criteria	NCCT/DWI ASPECT 3-5	NCCT/DWI ASPECT 0-5	NCCT ASPECT 2-5	NCCT/DWI ASPECT 3-5	ASPECT ≥6 and CTP core ≥50cc Aspect 3-5 and core <50cc	ASPECT 3-5 ASPECT >5 (>6h) and core 70-100cc ASPECT <3 and core 70-100cc
LKN	<12h	<6.5h	<24h	<6h, 6-24h FLAIR (-)	<24h	<24h
Primary outcome	Completed	Ongoing	Completed	mRS 0-3 at 90d- 31% vs 12.7% MM	Odd ratio of 1.51 favoring EVT	Odds ratio of 1.37 favoring EVT

Metanalysis of RESCUE-JAPAN LIMIT, ANGEL-ASPECT and SELECT 2 and 10 cohort studies included

Primary outcome: independent ambulation (mRS 0-3)

Secondary outcome: functional independence (mRS 0-2)

Mechanical Thrombectomy for Large Ischemic Stroke

A Systematic Review and Meta-analysis

Qi Li, MS,* Mohamad Abdalkader, MD,* James E. Siegler, MD, Shadi Yaghi, MD, Amrou Sarraj, MD, Bruce C.V. Campbell, MBBS, PhD, Albert J. Yoo, MD, PhD, Osama O. Zaidat, MD, Johannes Kaesmacher, MD, PhD, Deep Pujara, MBBS, MPH, MS, Raul G. Nogueira, MD, Jeffrey L. Saver, MD, Lei Li, MD, Qin Han, MS, Yi Dai, MS, Hongfei Sang, MD, Qingwu Yang, MD, Thanh N. Nguyen, MD, FRCPC, and Zhongming Qiu, MD

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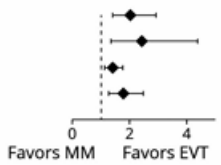
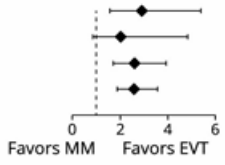
A. mRS 0–3

RCTs	EVT Events/total (%)	MM Events/total (%)	Risk ratio M-H, random, 95% CI	Risk ratio M-H, random, 95% CI	Weight (%)
Ref. #21	67/177 (37.29)	32/171 (18.71)		2.02 (1.40, 2.91)	34.00
Ref. #20	31/100 (31.00)	13/102 (12.75)		2.43 (1.35, 4.37)	20.50
Ref. #22	108/230 (46.96)	75/225 (33.33)		1.41 (1.12, 1.77)	45.40
Total	206/507 (40.63)	120/498 (24.10)		1.78 (1.28, 2.48)	100.00
Heterogeneity: Tau² = 0.05; Chi² = 4.78, df = 2 (p = 0.09); I² = 58%					
Test for overall effect: z = 3.43 (p = 0.0006)					



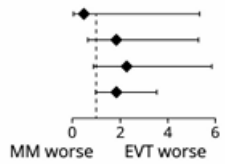
B. mRS 0–2

RCTs	EVT Events/total (%)	MM Events/total (%)	Risk ratio M-H, fixed, 95% CI	Risk ratio M-H, fixed, 95% CI	Weight (%)
Ref. #21	36/177 (20.34)	12/171 (7.01)		2.90 (1.56, 5.38)	26.90
Ref. #20	14/100 (14.00)	7/102 (6.86)		2.04 (0.86, 4.84)	15.30
Ref. #22	69/230 (30.00)	26/225 (11.56)		2.60 (1.72, 3.92)	57.90
Total	119/507 (23.47)	45/498 (9.04)		2.59 (1.89, 3.57)	100.00
Heterogeneity: Chi² = 0.42, df = 2 (p = 0.81); I² = 0%					
Test for overall effect: z = 5.86 (p < 0.00001)					



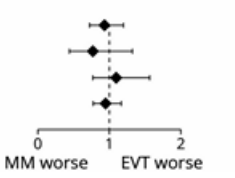
C. sICH

RCTs	EVT Events/total (%)	MM Events/total (%)	Risk ratio M-H, fixed, 95% CI	Risk ratio M-H, fixed, 95% CI	Weight (%)
Ref. #21	1/178 (0.56)	2/174 (1.15)		0.49 (0.04, 5.34)	15.50
Ref. #20	9/100 (9.00)	5/102 (4.90)		1.84 (0.64, 5.29)	38.00
Ref. #22	14/230 (6.09)	6/225 (2.67)		2.28 (0.89, 5.83)	46.50
Total	24/508 (4.72)	13/501 (2.59)		1.83 (0.95, 3.55)	100.00
Heterogeneity: Chi² = 1.38, df = 2 (p = 0.50); I² = 0%					
Test for overall effect: z = 1.80 (p = 0.07)					



D. Mortality

RCTs	EVT Events/total (%)	MM Events/total (%)	Risk ratio M-H, fixed, 95% CI	Risk ratio M-H, fixed, 95% CI	Weight (%)
Ref. #21	68/177 (38.42)	71/171 (41.52)		0.93 (0.72, 1.20)	51.00
Ref. #20	18/100 (18.00)	24/102 (23.53)		0.77 (0.44, 1.32)	16.80
Ref. #22	50/230 (21.74)	45/225 (20.00)		1.09 (0.76, 1.56)	32.20
Total	136/507 (26.82)	140/498 (28.11)		0.95 (0.78, 1.16)	100.00
Heterogeneity: Chi² = 1.19, df = 2 (p = 0.55); I² = 0%					
Test for overall effect: z = 0.51 (p = 0.61)					



EVT = endovascular thrombectomy; MM = medical management; mRS = modified Rankin Scale; RCT = randomized controlled trial; sICH = symptomatic intracranial hemorrhage.

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