Supplementary Online Content

Sarraj A, Hassan AE, Savitz S, et al. Outcomes of endovascular thrombectomy vs medical management alone in patients with large ischemic cores: a secondary analysis of the optimizing patient's selection for endovascular treatment in acute ischemic stroke (SELECT) study. *JAMA Neurol*. Published July 29, 2019. doi:10.1001/jamaneurol.2019.2109

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Study personnel

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Logistic regression		OR	95% CI		P-value
Univariable	**Endovascular Thrombectomy**	3.27	1.11	9.62	**0.03**
Multivariable	**Endovascular Thrombectomy**	3.95	0.62	25.35	0.15
	Age (years)	1.02	0.97	1.08	0.43
	NIHSS at presentation	0.85	0.72	0.99	**0.04**
	Serum Glucose at presentation (mg/dL)	0.99	0.98	1.00	0.09
	IV tPA status	1.60	0.33	7.60	0.56
	Clot location				
	Internal Carotid Artery	Ref.			
	Middle cerebral Artery - M1 segment	1.87	0.40	8.76	0.43
	Middle Cerebral Artery - M2 segment	10.53	1.14	97.33	**0.04**
	Ischemic Core Volume (CTP rCBF<30%) (per 10cc)	0.95	0.92	0.98	**0.001**
	Time from last known well to procedure (Hours)	1.00	0.76	1.31	0.98

eTable 1. Univariable and multivariable logistic regression models comparing functional independence (90 day mRS 0-2) in patients treated with thrombectomy versus medical management only.

1. Given high co-linearity observed between ASPECTS and rCBF volume, ASPECTS could not be assessed within the same models. A separate model after excluding rCBF (<30%) volume did not find ASPECTS score to be statistically significant on logistic regression model (aOR: 0.81(0.61-1.08), p=0.16).

NIHSS – National Institute of Health Stroke Scale; IV tPA – intravenous tissue plasminogen activator; rCBF – relative cerebral blood flow.

Ordinal logistic regression		OR	95% CI		P-value
Univariable	**Endovascular Thrombectomy**	2.12	1.05	4.31	**0.04**
Multivariable	**Endovascular Thrombectomy**	1.61	0.71	3.63	0.25
	Age (years)	0.97	0.95	1.00	0.09
	NIHSS at presentation	0.88	0.79	0.97	**0.008**
	Serum Glucose at presentation (mg/dL)	0.99	0.98	1.00	**0.001**
	IV tPA status	1.11	0.49	2.51	0.793
	Clot location				
	Internal Carotid Artery	Ref.			
	Middle cerebral Artery - M1 segment	1.47	0.64	3.38	0.36
	Middle Cerebral Artery - M2 segment	2.36	0.70	7.99	0.17
	Ischemic Core Volume (CTP rCBF<30%) (per 10cc)	0.84	0.76	0.93	**0.001**
	Time from last known well to procedure (per hour)	0.92	0.80	1.07	0.28

eTable 2. Univariable and multivariable ordinal logistic regression models comparing 90 day modified Rankin Scale score distribution (shift) in patients treated with thrombectomy versus medical management only.

1. Given high co-linearity observed between ASPECTS and rCBF volume, ASPECTS could not be assessed within the same models. A separate model after excluding rCBF (<30%) volume did not find ASPECTS score to be statistically significant on ordinal logistic regression model (aOR: 0.95 (0.79-1.14), p=0.59).

NIHSS – National Institute of Health Stroke Scale; IV tPA – intravenous tissue plasminogen activator; rCBF – relative cerebral blood flow.

Endovascular Thrombectomy vs Medical Management		OR	95% CI		P-value
Large Core on CT (ASPECTS < 6)					
Logistic regression (mRS 0-2)	**Univariable**	2.53	0.83	7.67	0.10
	Multivariable	2.29	0.3	17.42	0.42
Ordinal logistic regression (Shift on 90 day mRS)	**Univariable**	2.28	0.98	5.29	0.06
	Multivariable	1.76	0.67	4.62	0.25
Large Core on CTP (rCBF (<30%) volume ≥ 50 cc)					
Logistic regression (mRS 0-2)	**Univariable**	8.77	1.04	74.21	**0.046**
	Multivariable *	N/A	N/A	N/A	N/A
Ordinal logistic regression (Shift on 90 day mRS)	**Univariable**	1.54	0.66	3.56	0.32
	Multivariable	1.53	0.54	4.3	0.42
Large Core on CT AND CTP					
Logistic regression (mRS 0-2)	**Univariable**	4.17	0.34	50.62	0.26
	Multivariable *	N/A	N/A	N/A	N/A
Ordinal logistic regression (Shift on 90 day mRS)	**Univariable**	1.38	0.43	4.44	0.59
	Multivariable	3.24	0.71	14.72	0.13

eTable 3. Univariable and multivariable logistic and ordinal logistic regression models comparing functional independence (90 day mRS 0-2) in patients treated with thrombectomy versus medical management only in patients with large core on ***different imaging modalities (CT, CTP or Both)***.

Multivariable model demonstrates the thrombectomy effect after adjusting for Age, NIHSS at presentation, serum glucose at presentation, IV-tPA status, clot location, ischemic core volume and time from last seen well to procedure.

*Due to low rates of functional independence in medical management arm, the logistic regression models were unstable.

NIHSS – National Institute of Health Stroke Scale; IV tPA – intravenous tissue plasminogen activator; rCBF – relative cerebral blood flow.

	Endovascular Thrombectomy (N=37)	Medical Management only (N=34)
ASPECTS = 5	40% (8/20)	18%(2/11)
ASPECTS = 4	40% (4/10)	50%(3/6)
ASPECTS = 3	14%(1/7)	10%(1/10)
ASPECTS = 2	0%(0/0)	0%(0/4)
ASPECTS = 1	0%(0/0)	0%(0/2)
ASPECTS = 0	0%(0/0)	0%(0/1)
Total	35%(13/37)	18%(6/34)

eTable 4. Rates of functional independence in patients receiving thrombectomy and medical management only , stratified by ASPECTS score. ASPECTS: Alberta Stroke Program Early CT Score.

Clinical and Imaging Variables	OR	95% CI		p-value
Age (years)	1.13	1.00	1.28	**0.049**
Serum Glucose at presentation (mg/dL)	0.99	0.97	1.01	0.18
NIHSS at presentation	0.71	0.54	0.93	**0.01**
IV tPA status	4.04	0.51	32.14	0.19
Clot Location –				
Internal Carotid Artery	Ref.			
Middle cerebral Artery - M1 segment	0.76	0.12	4.64	0.76
Middle Cerebral Artery - M2 segment	37.90	0.62	2314.34	0.08
Ischemic Core Volume (CTP rCBF<30%) (per 10cc)	0.58	0.39	0.87	**0.007**
Time from last known well to procedure (Hours)	0.60	0.36	0.99	**0.045**

eTable 5. Multivariable logistic regression model identifying variables independently associated with functional independence (90 day mRS 0-2) in patients treated with endovascular thrombectomy.

1. Clinically relevant and statistically significant (those with univariate p <0.1) variables were included in the final logistic regression model. A stepwise method of variable selection was used.
2. Given the high co-linearity observed between ASPECTS and rCBF volume, ASPECTS could not be assessed within the same model. A separate model, after excluding ischemic core volume (rCBF<30%) did not find ASPECTS score to be statistically significant. (aOR: 0.86 (0.54-1.37), p=0.52)

NIHSS – National Institute of Health Stroke Scale; IV tPA – intravenous tissue plasminogen activator; rCBF – relative cerebral blood flow.

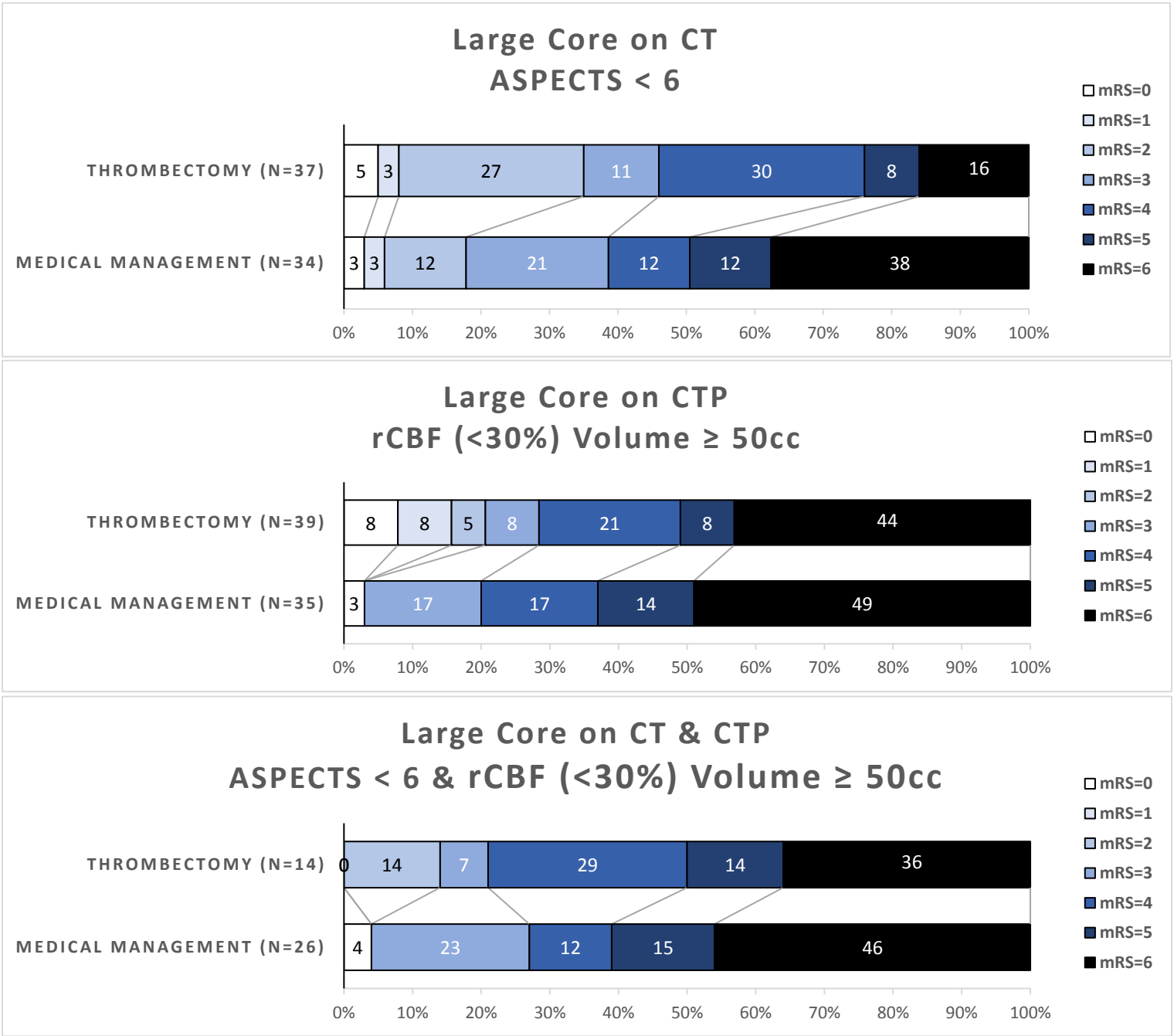
	Endovascular Thrombectomy (n=67)	Medical management only (n=41)	p-value
mTICI ≥ 2b, n(%)	53(79%)	N/A	N/A
90 day mRS, n(%)			**0.002[o]**
0	12 (18%)	1 (2%)	
1	4 (6%)	1 (2%)	
2	12 (18%)	4 (10%)	
3	7 (10%)	7 (17%)	
4	17 (25%)	8 (20%)	
5	3 (4%)	4 (10%)	
6	12 (18%)	16 (39%)	
Good outcomes, n(%)	28 (42%)	6 (15%)	**0.003[c]**
Good to Moderate outcomes (mRS 0-3), (n%)	35 (52%)	13 (32%)	**0.04[c]**
Neurological Worsening, n(%)	12 (18%)	5 (13%)	0.59[f]
Symptomatic ICH, n(%)	8 (12%)	4 (10%)	1.000[f]
Any ICH, n(%)	41 (61%)	12 (30%)	**0.002[c]**
Death, n(%)	12 (18%)	16 (39%)	**0.02[c]**
Final infarct volume (cc), median (IQR)	69 (4-107)	158 (119-225)	**<0.001[W]**
Infarct growth (cc), median (IQR)	39(4-107)	99 (61-140)	**0.003[W]**

eTable 6. Clinical and Radiographic Outcomes of the cohort divided based on the treatment received in patients with ASPECTS ≤ 6:

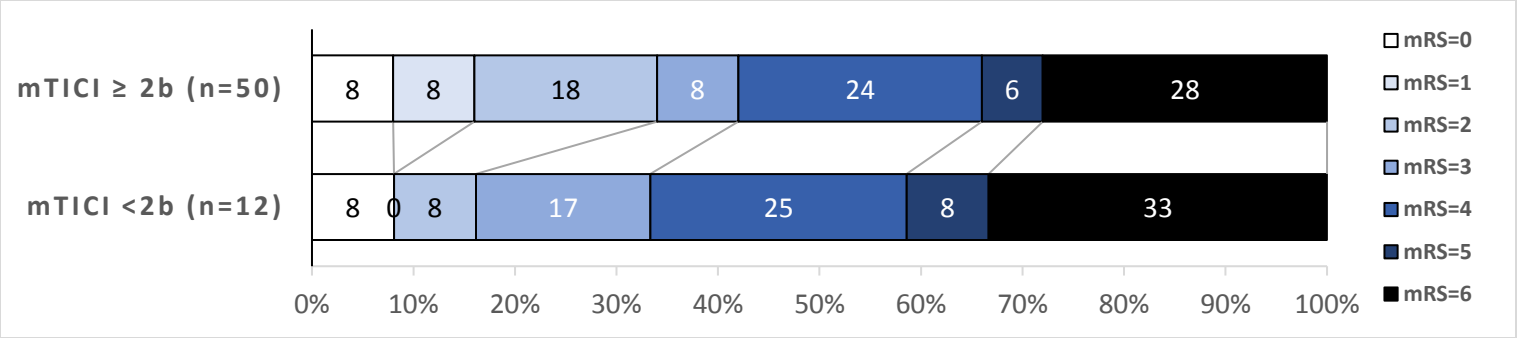
mTICI: modified treatment in cerebral ischemia grade, mRS: modified Rankin Scale score, ICH – intracerebral hemorrhage.

[w] P-value obtained using Wilcoxon Rank-sum test, [f] P-value obtained using Fisher's exact test, , [c] P-value obtained using Pearson's Chi-square test, [o]P-value obtained using univariate ordinal logistic regression

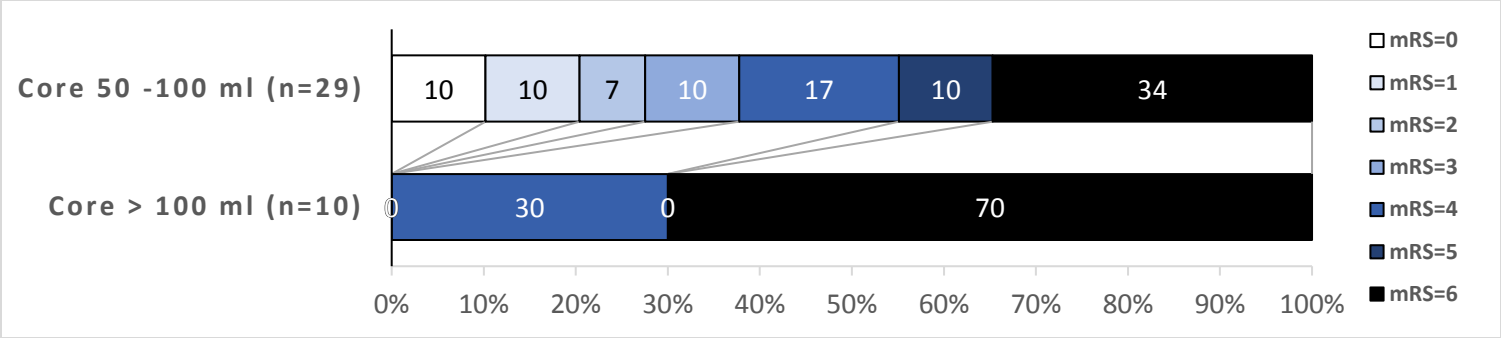
Functional Outcome Comparison between Thrombectomy vs Medical Management in Patients with Large Core on CT, CTP or Both.



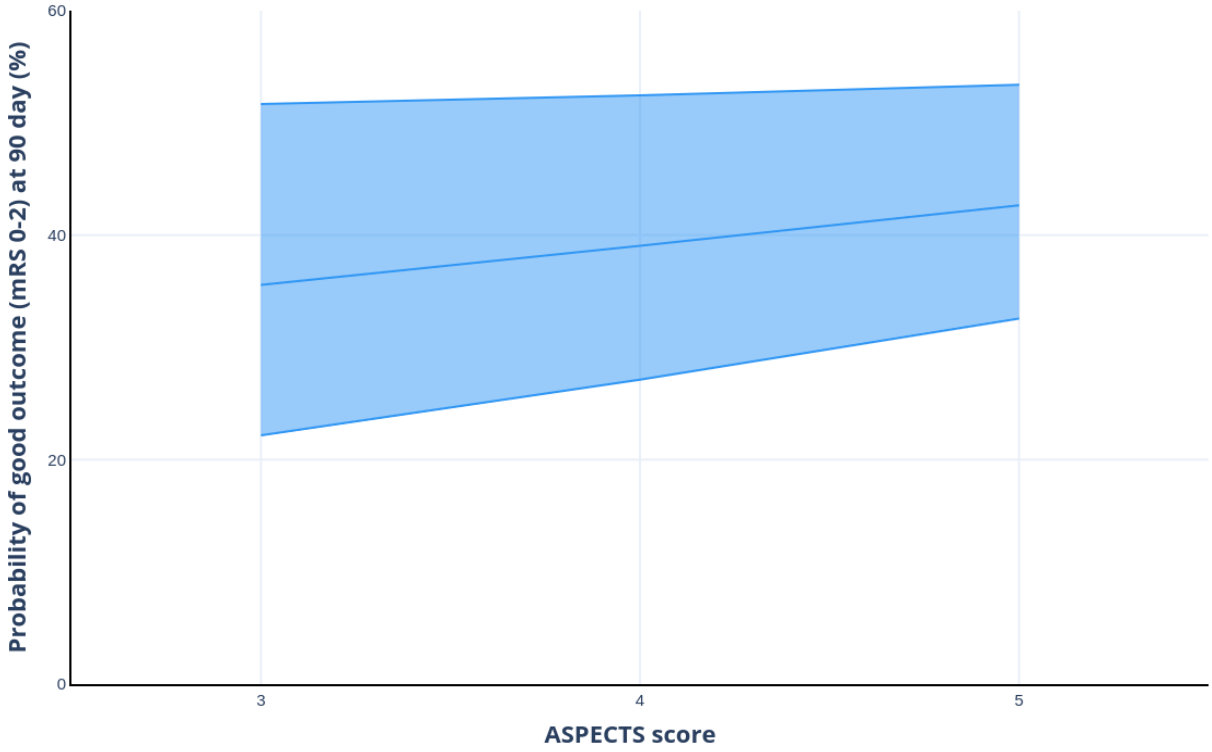
eFigure 1. Depicts 90 day modified Rankin Scale score distribution in large core patients treated with endovascular thrombectomy as compared to those who were treated by medical management only by imaging modality a) Large core on CT, b) Large core on CTP, c) Large core on CT & CTP.



eFigure 2. Depicts 90 day modified Rankin Scale score distribution in patients who achieved successful reperfusion (mTICI ≥ 2b) with endovascular thrombectomy as compared to those who did not (mTICI=0-2a).



eFigure 3. Illustrates 90 day modified Rankin Scale score distribution stratified by ischemic core volume on CT perfusion (50-100 cc) vs. > 100 cc.



eFigure 4. The probability of good outcomes at 90 day in patients who were treated with endovascular thrombectomy in relation to ASPECTS score.

1. Each unit reduction in ASPECTS score resulted in 14% reduction in odds of good outcome (aOR: 0.86 (0.54-1.37), p=0.52) as mentioned in supplemental table 1.