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Trombectomie als behandeling voor CVA

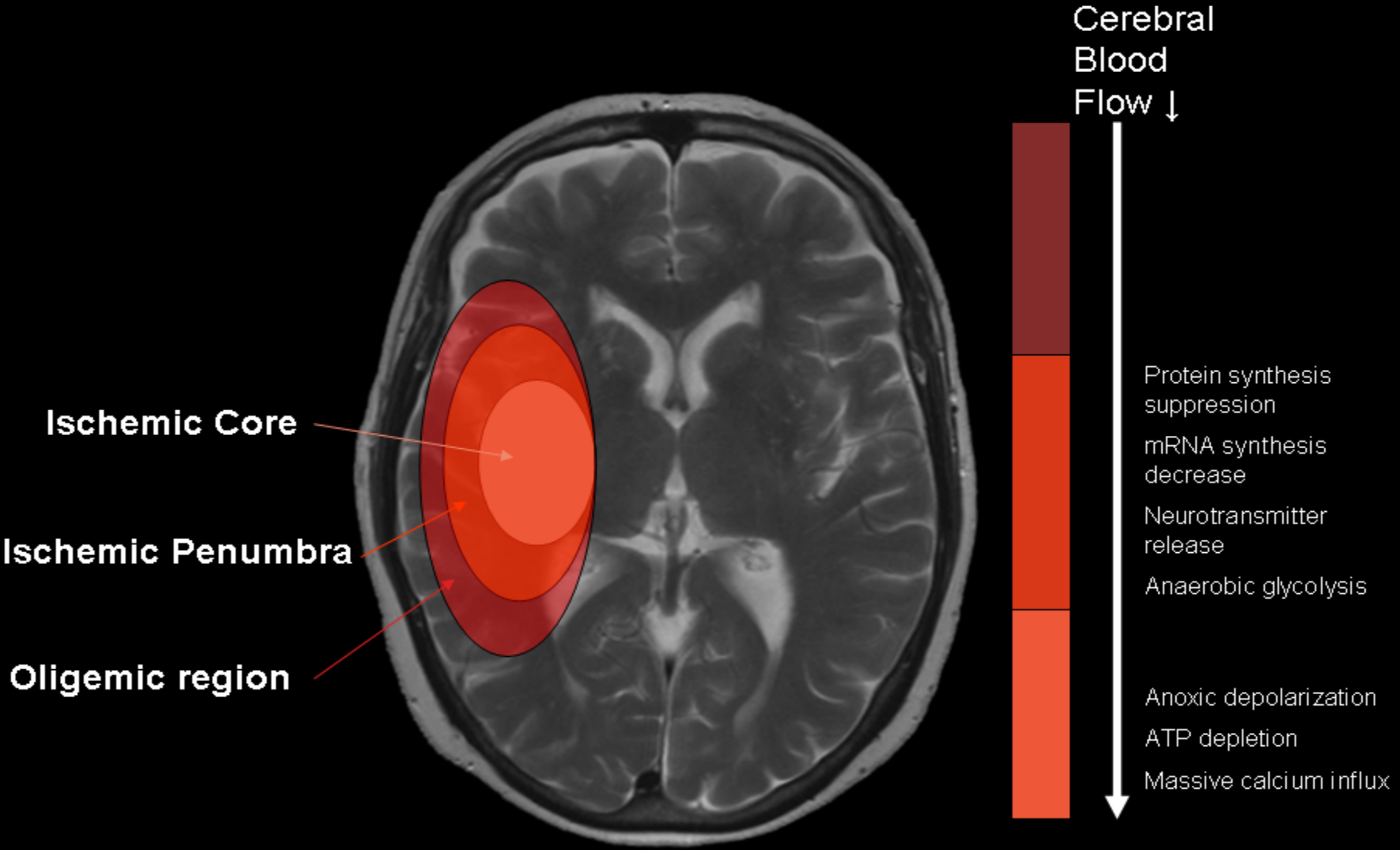
Robin Lemmens
4 Februari 2017

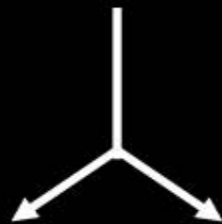
UZ

Herestraat 49
3000 Leuven

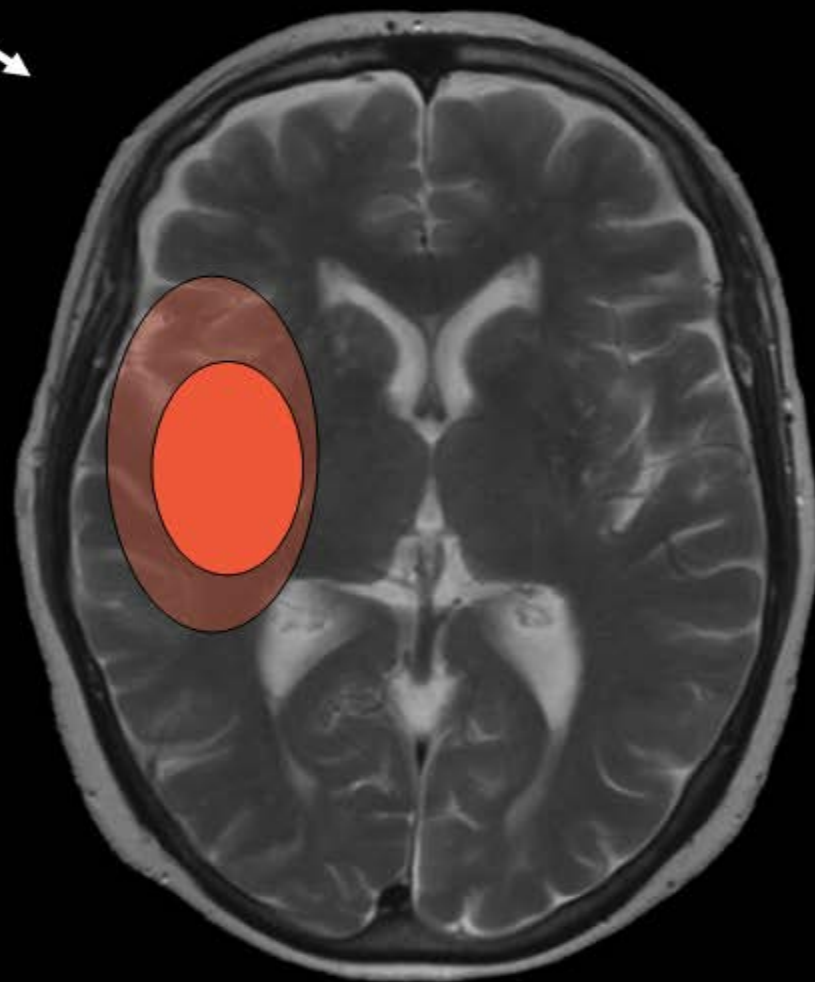
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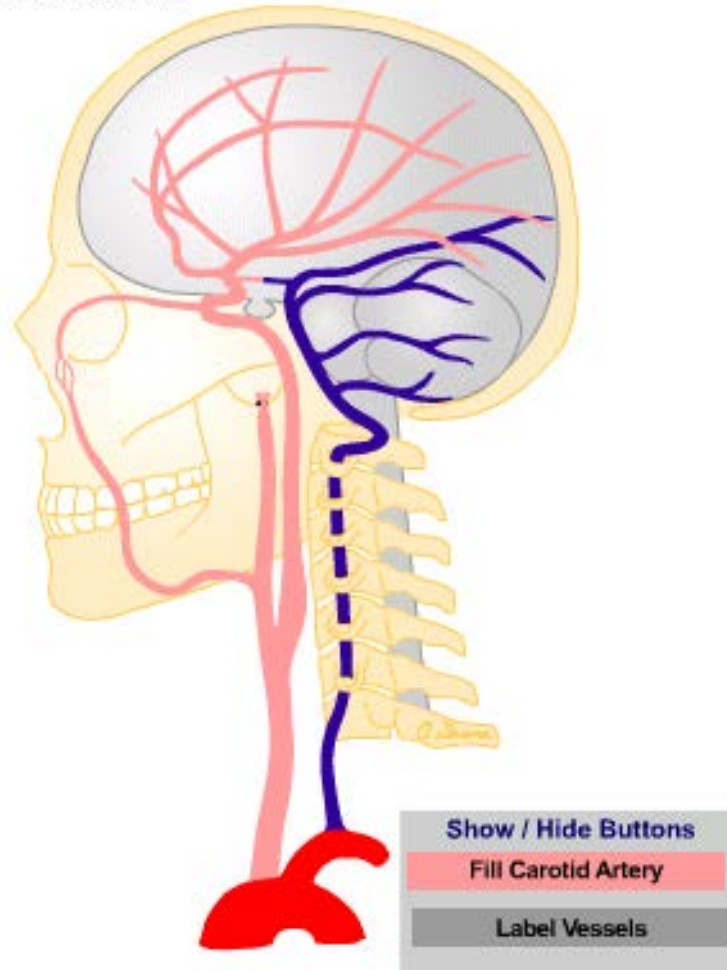
**Recruitment of ischemic penumbra
by the ischemic core**



Salvage of the ischemic penumbra

Anterieure circulatie

Carotid/Vertebral



Interventionele behandelingen

Table 1. Key Features and Results of Trials Comparing Endovascular Procedures with Medical Treatment for Acute Ischemic Stroke.*

Trial	No. of Patients and Sites	Enrollment Period	Key Patient Characteristics	Test Treatment†
IMS III ⁷	656 Patients enrolled (target, 900) at 58 sites	2006–2012	NIHSS score, ≥ 10 ¶; anterior or posterior circulation; 92% of 306 patients who underwent baseline CT angiography had large-artery occlusions	IV t-PA followed by endovascular therapy
SYNTHESIS Expansion ⁸	362 Patients enrolled at 24 sites	2008–2012	No limit on NIHSS score; anterior or posterior circulation; no data on percentage of patients with large-artery occlusions	Endovascular therapy
MR RESCUE ⁹	127 Patients enrolled at 22 sites but analysis restricted to 118 patients	2004–2011	NIHSS score, 6–29; large-vessel occlusion involving anterior circulation (ICA, M1, M2) required; 58% had favorable penumbral pattern	Endovascular therapy; 43.8% of patients in this group also initially received IV t-PA

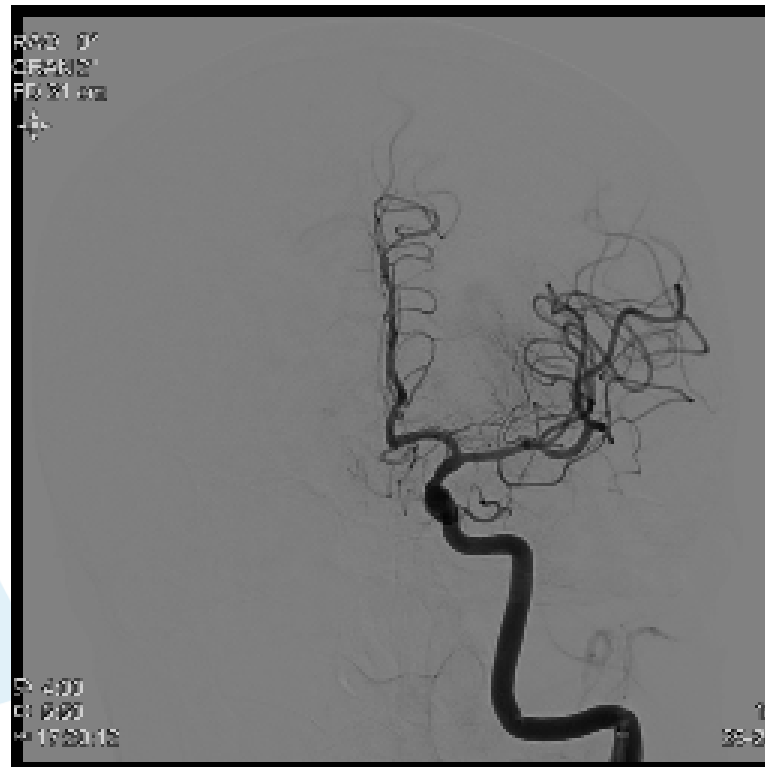
Intra-arteriële behandeling



Intra-arteriële behandeling



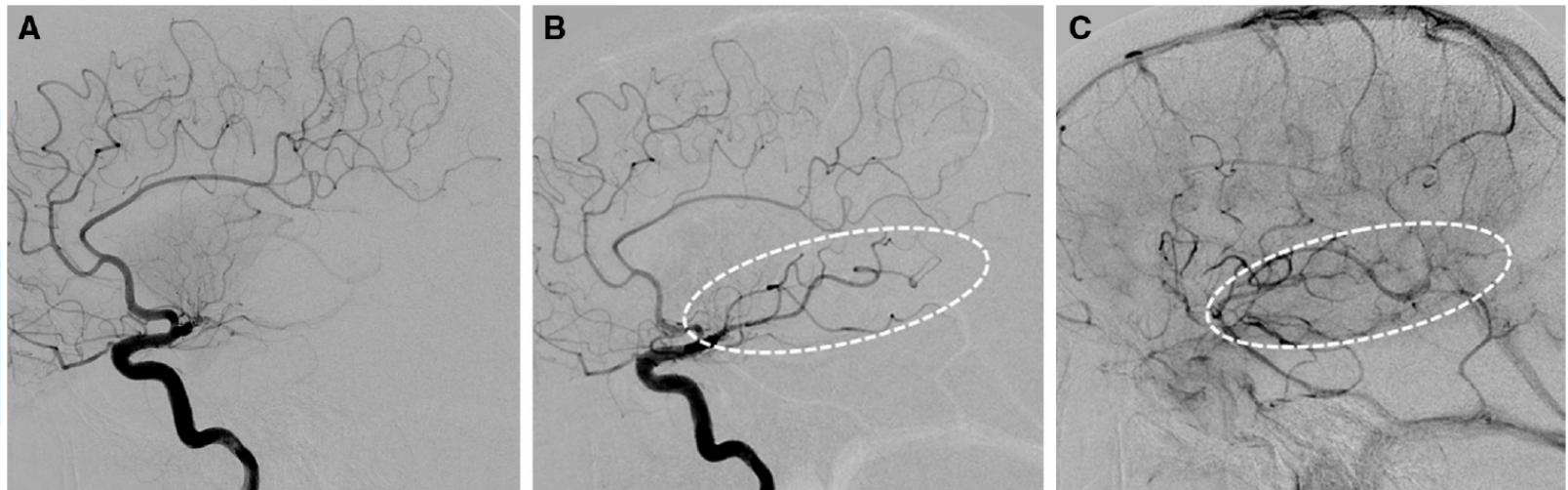
Intra-arteriële behandeling



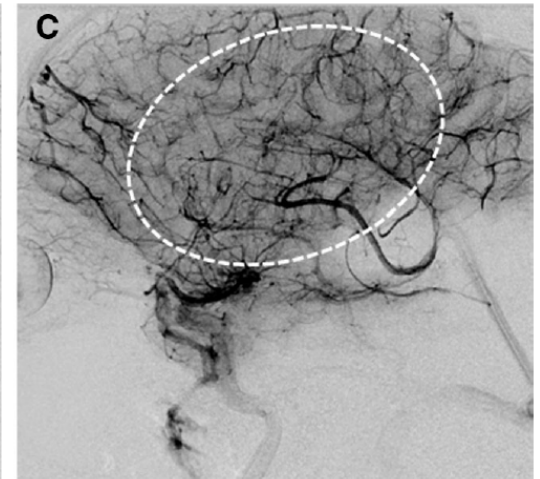
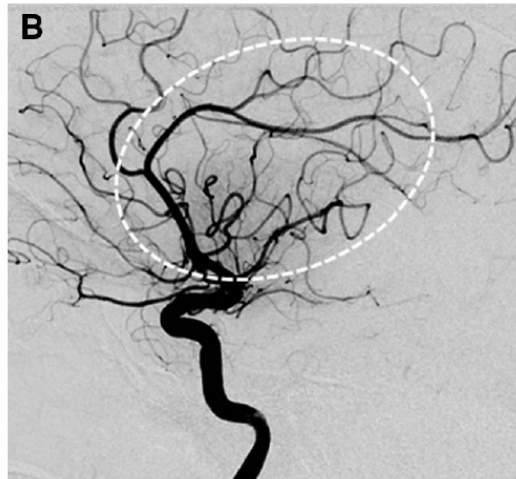
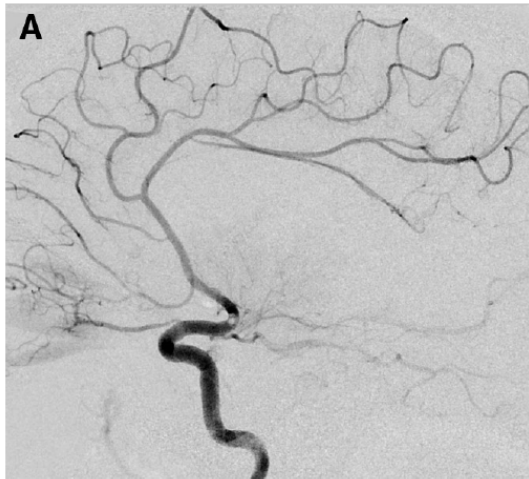
Modified TICI score

Grade	
0	No perfusion
1	Perfusion past the initial obstruction, but little or slow distal perfusion with limited branch filling
2a	Partial perfusion of $< \frac{1}{2}$ of the vascular distribution of the occluded artery
2b	Partial perfusion of $\geq \frac{1}{2}$ of the vascular distribution of the occluded artery
3	Full perfusion with filling of all distal branches

Definitie van reperfusie



Reperfusie



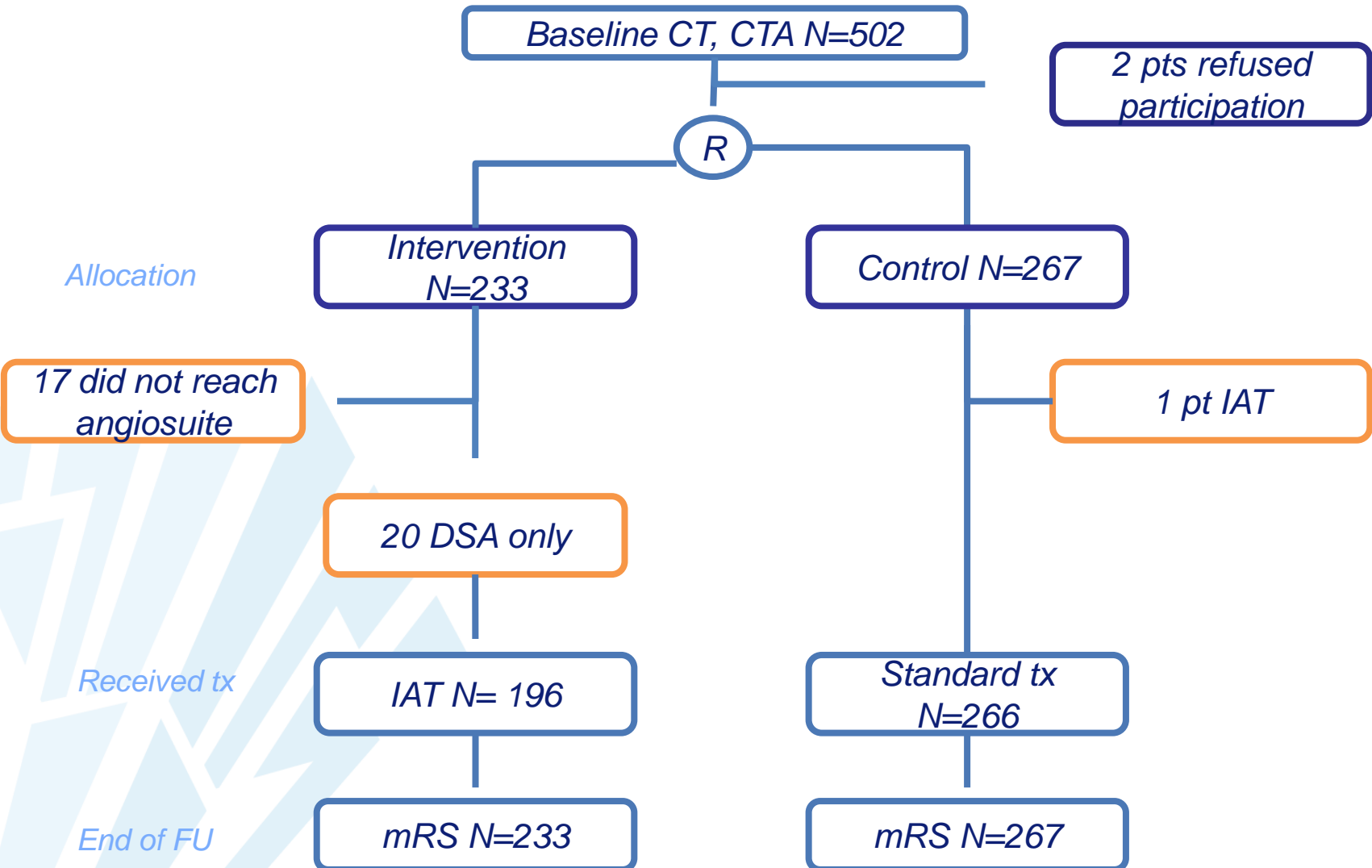
MR CLEAN

ORIGINAL ARTICLE

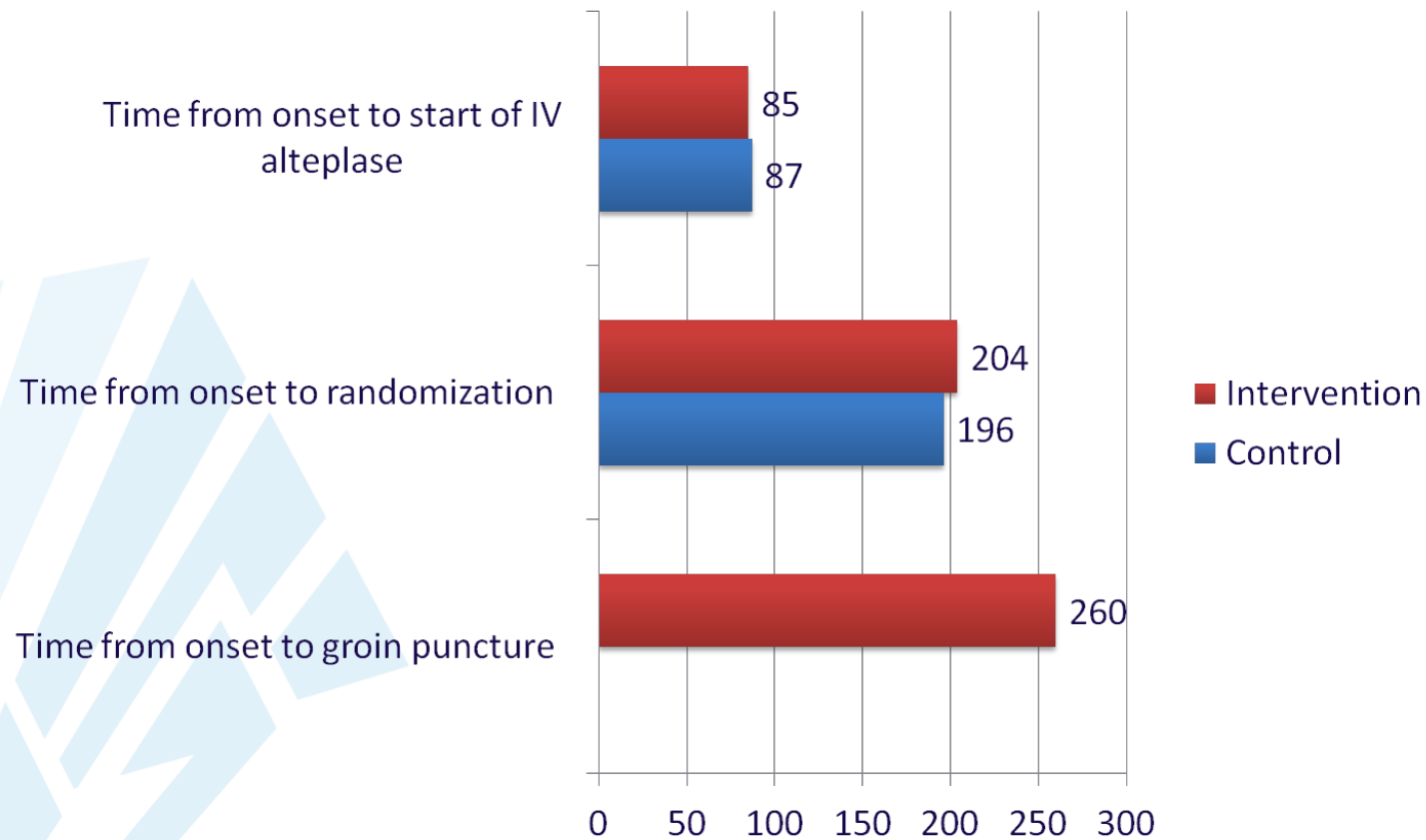
A Randomized Trial of Intraarterial Treatment for Acute Ischemic Stroke

Inclusie criteria

- Acuut ischemisch CVA
- Occlusie van een intracranieel bloedvat van de anterieure circulatie (vastgesteld dmv CTA)
- IA behandeling moest gestart worden binnen 6 uur na het begin van de symptomen
- Leeftijd ≥ 18
- NIHSS ≥ 2



Tijd tot behandeling

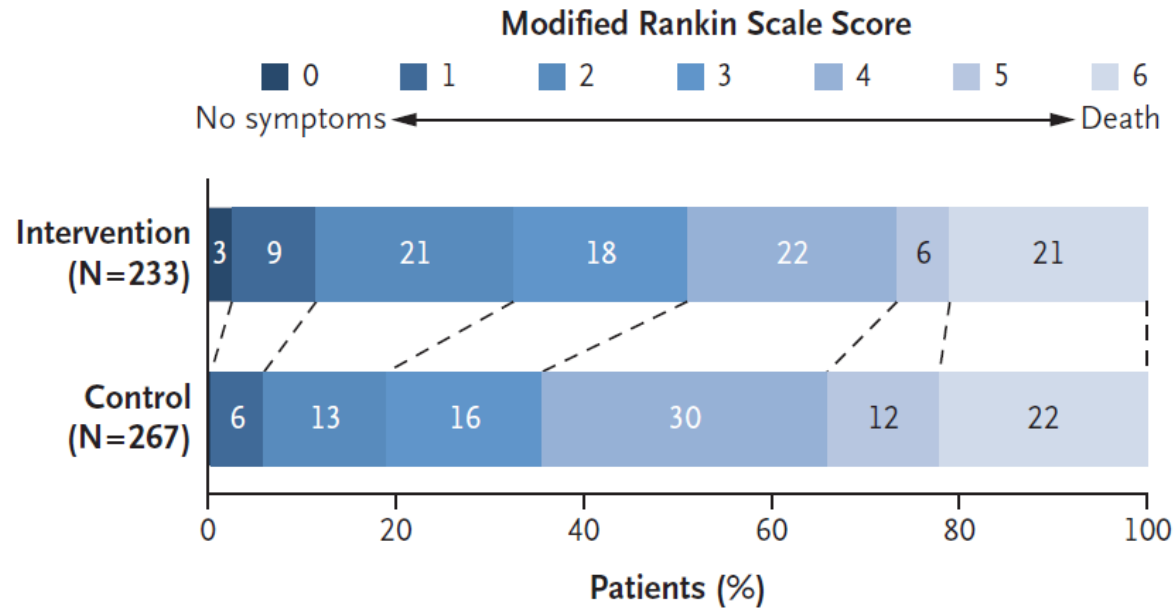


Modified Rankin Scale

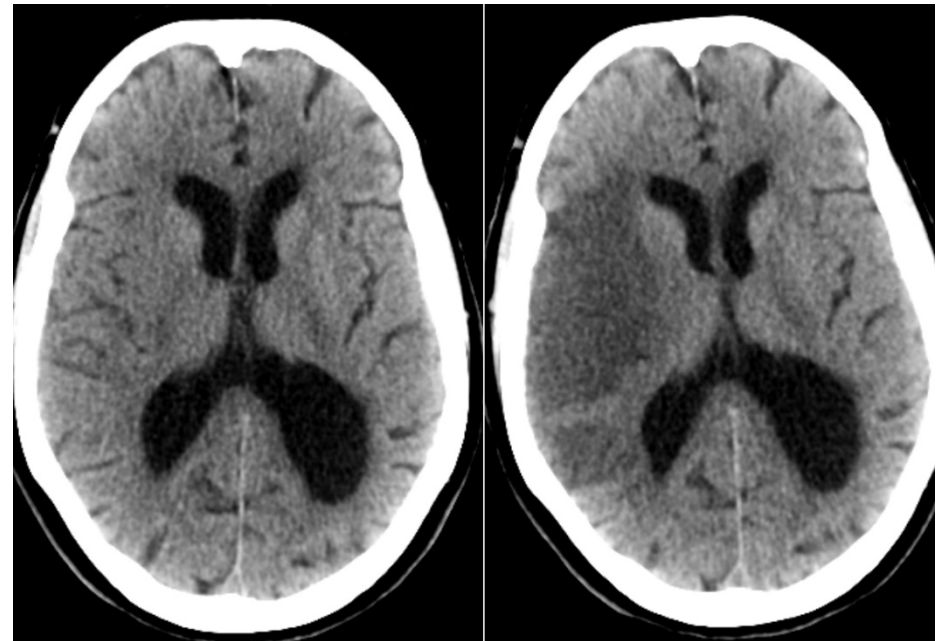
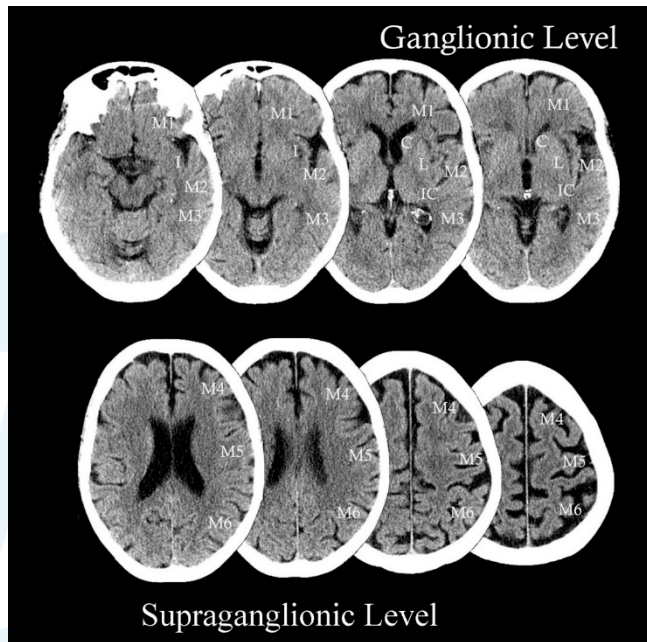
- 0 **Geen symptomen**
- 1 **Geen significante beperkingen:** kan ondanks symptomen alle gebruikelijke werkzaamheden en activiteiten uitvoeren
- 2 **Geringe beperkingen:** kan niet alle activiteiten zelfstandig uitvoeren die voorheen mogelijk waren, maar is wel zelfredzaam
- 3 **Matige beperkingen:** enige hulp vereist, maar kan zonder hulp lopen
- 4 **Matig ernstige beperkingen:** kan niet zonder hulp lopen en kan de lichamelijke verzorging niet zonder hulp uitvoeren
- 5 **Ernstige beperkingen:** bedlegerig, incontinent en constant aandacht- en zorgbehoefstig
- 6 **Overleden**

Thrombectomie verbetert de uitkomst

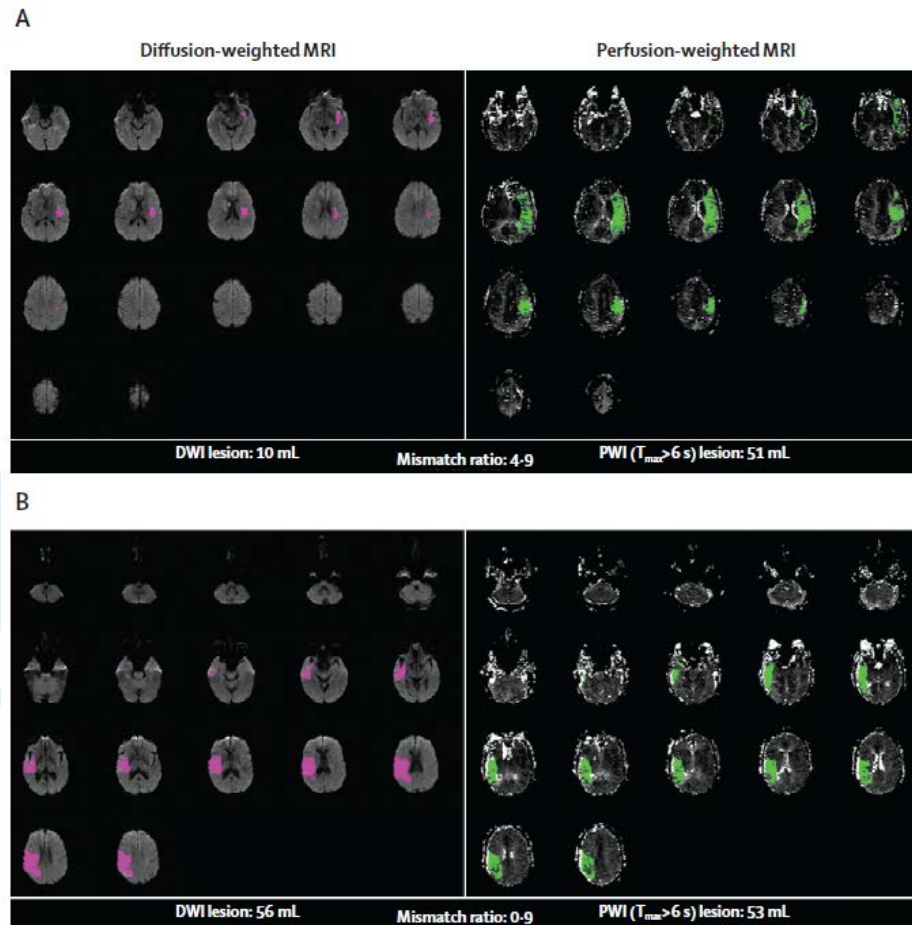
Common adjusted odds ratio: 1.67 (95% CI:1.21 to 2.30)



Selectie dmv beeldvorming: ASPECTS



Core vs Penumbra



Lansberg, Lancet Neurol 2013

EXTEND-IA

ORIGINAL ARTICLE

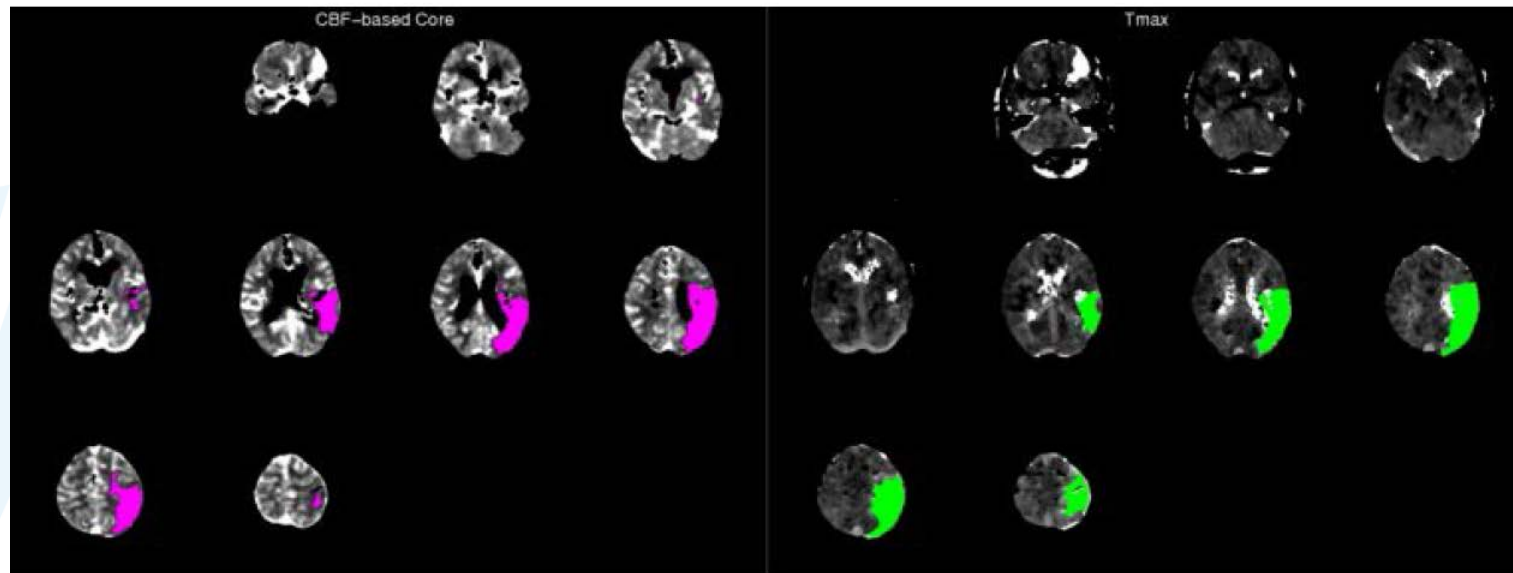
Endovascular Therapy for Ischemic Stroke with Perfusion-Imaging Selection

Inclusie criteria

- Acute ischemische beroerte
- Leeftijd ≥ 18
- Behandeling moest beginnen binnen de 6 uur na het begin van de symptomen
- Imaging inclusion criteria: Dual target
 - CTA reveals large artery occlusion in anterior anatomy (ICA, M1 or M2) **AND**
 - Mismatch - Using CT or MRI with a Tmax >6 second delay perfusion volume and either CT-rCBF or DWI infarct core volume.
 - Mismatch ratio of greater than 1.2 and
 - Absolute mismatch volume of greater than 10ml and
 - Infarct core lesion volume of less than 70mL

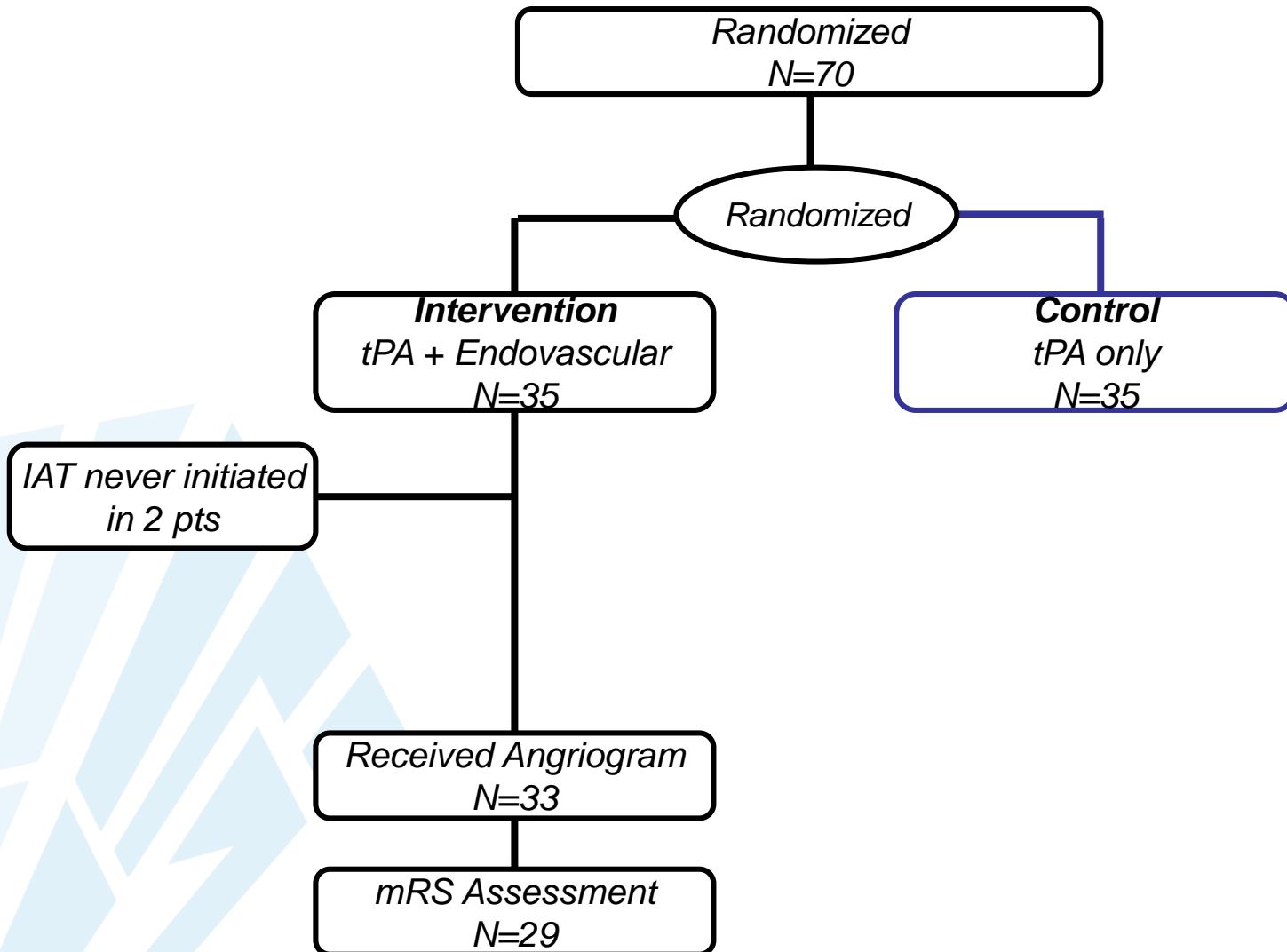
Core

70mL ischemic core

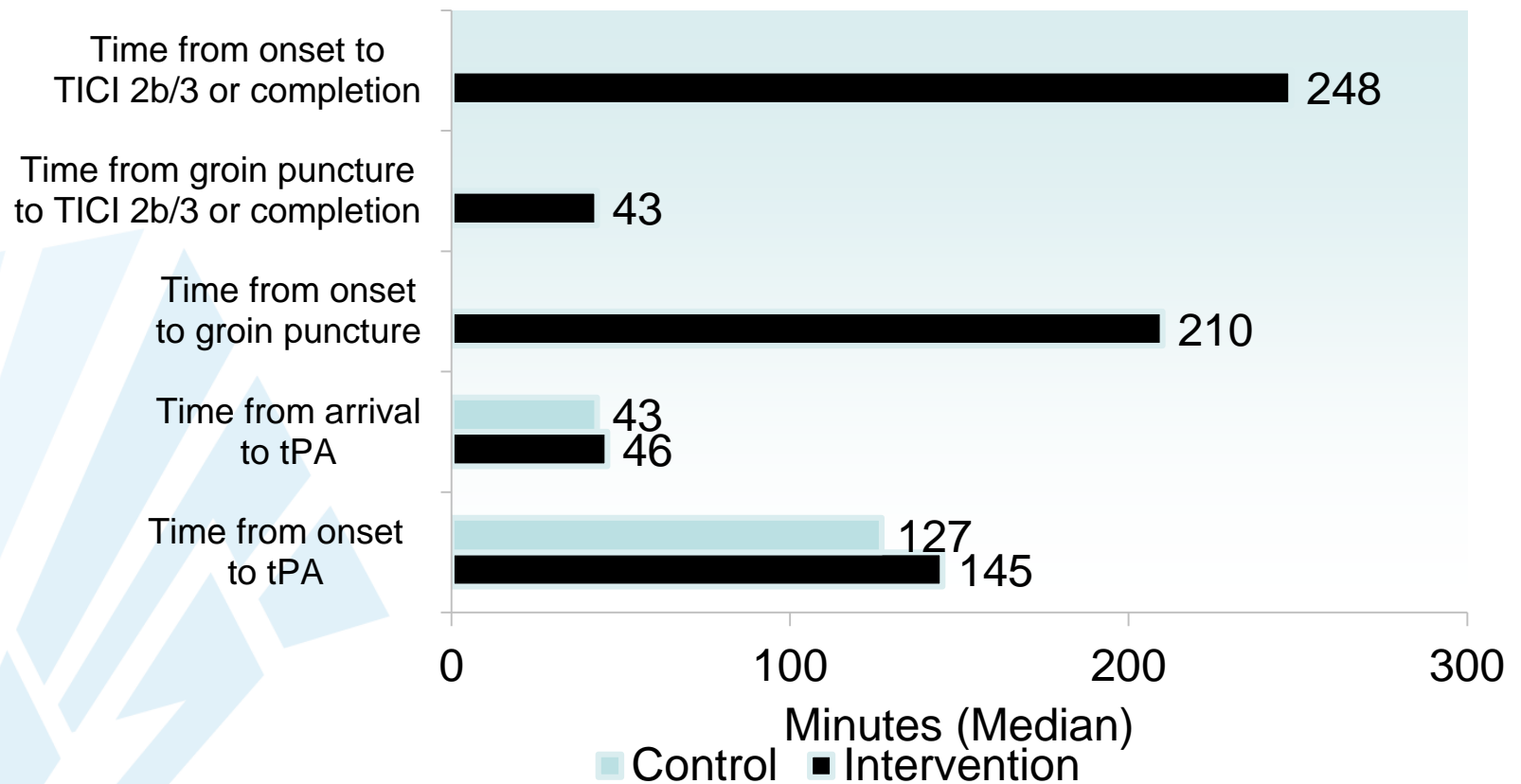


Ischemic core volume: 73mL

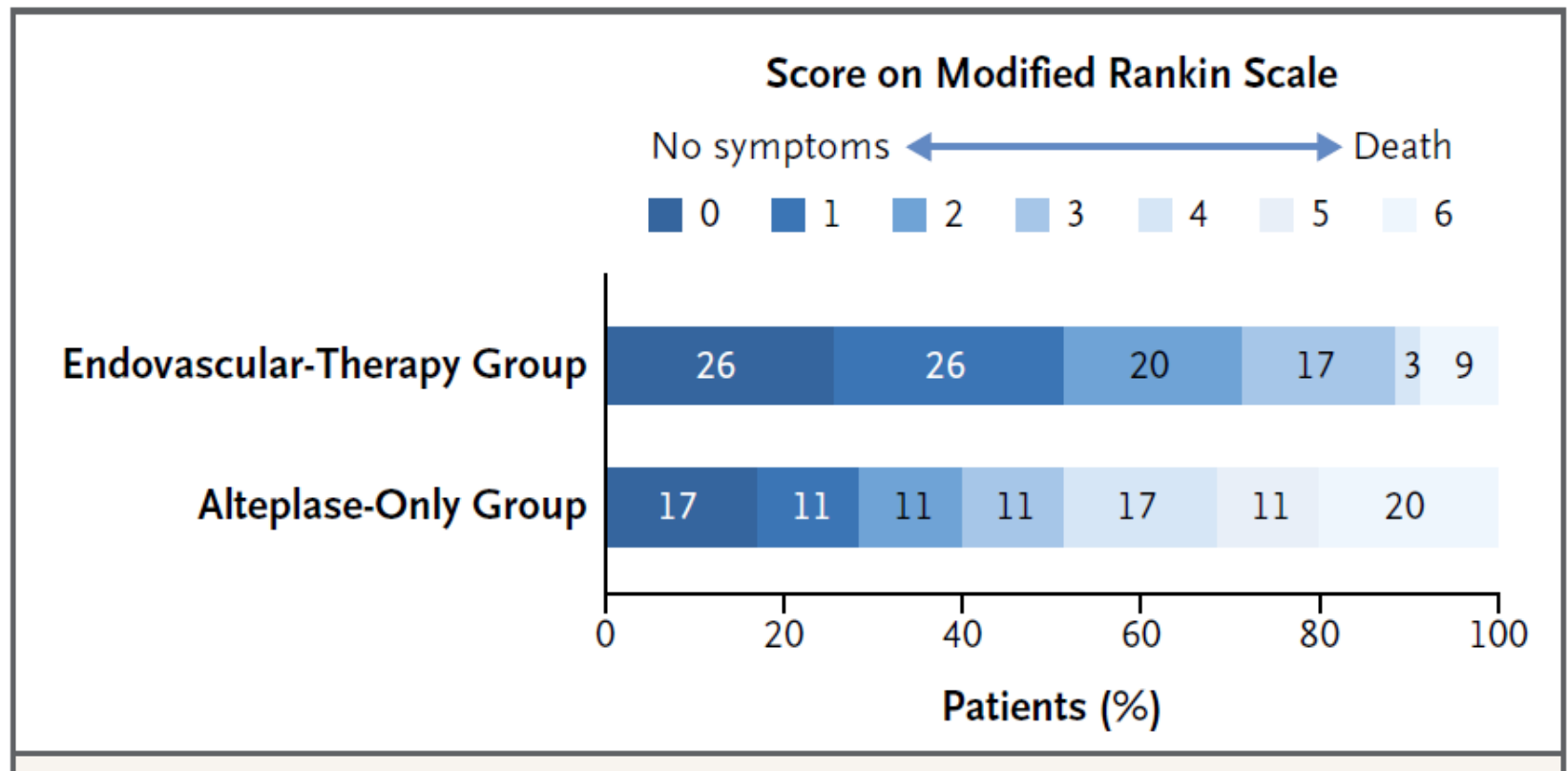
Perfusion (Tmax>6s) lesion: 88mL



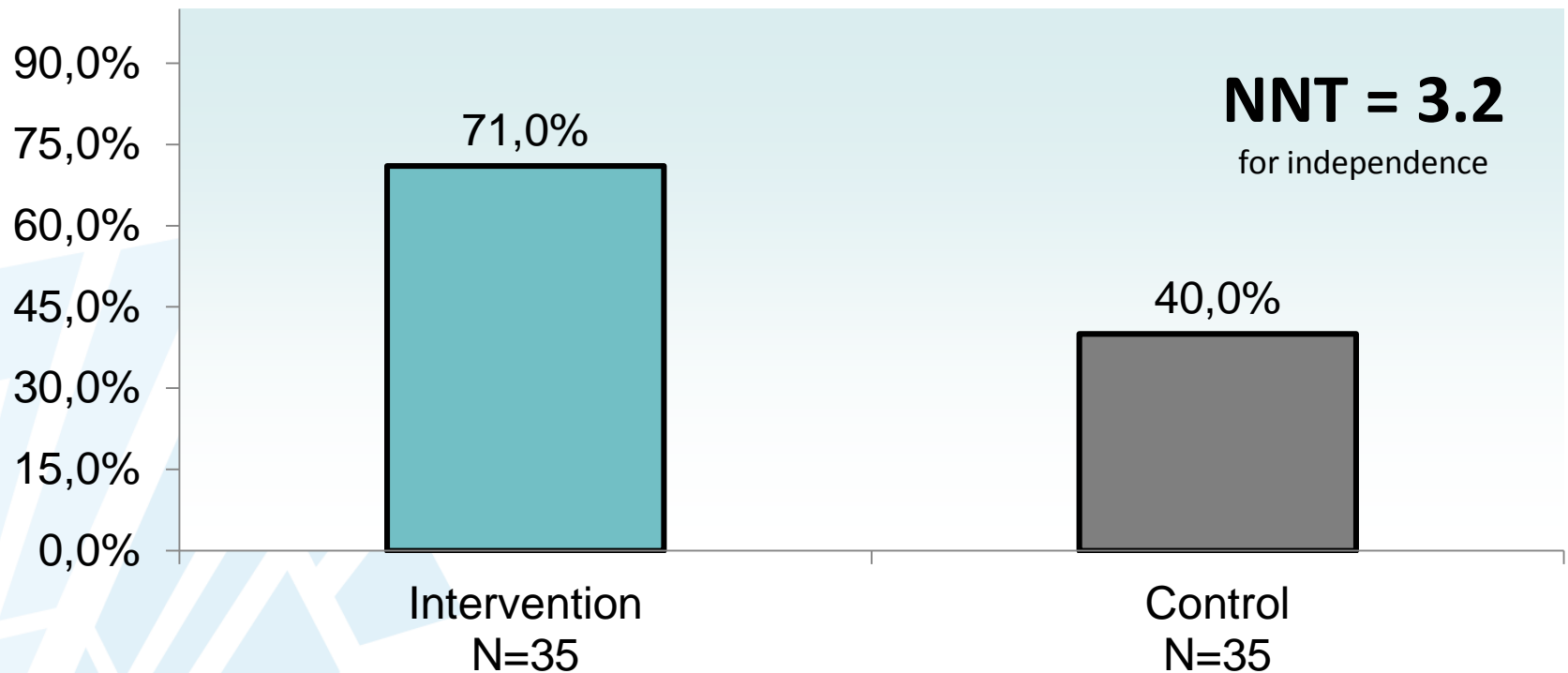
EXTEND-IA: time



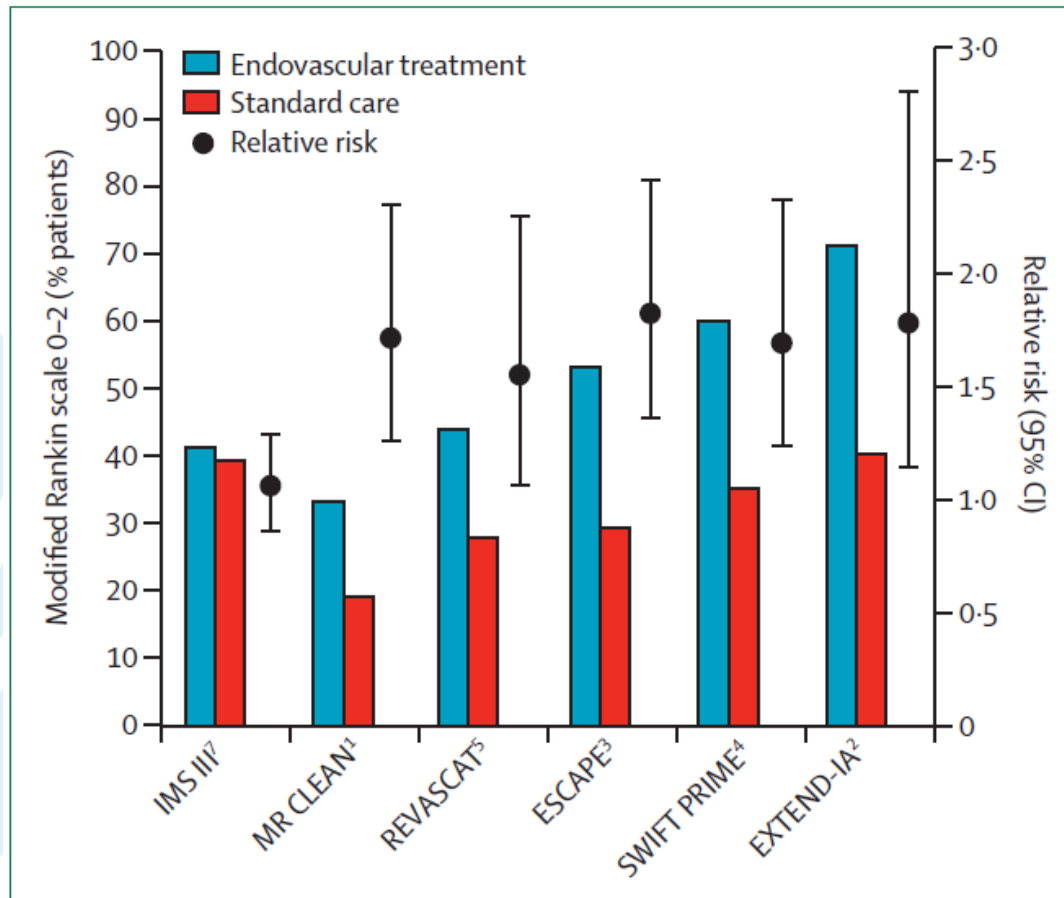
EXTEND-IA: Outcome



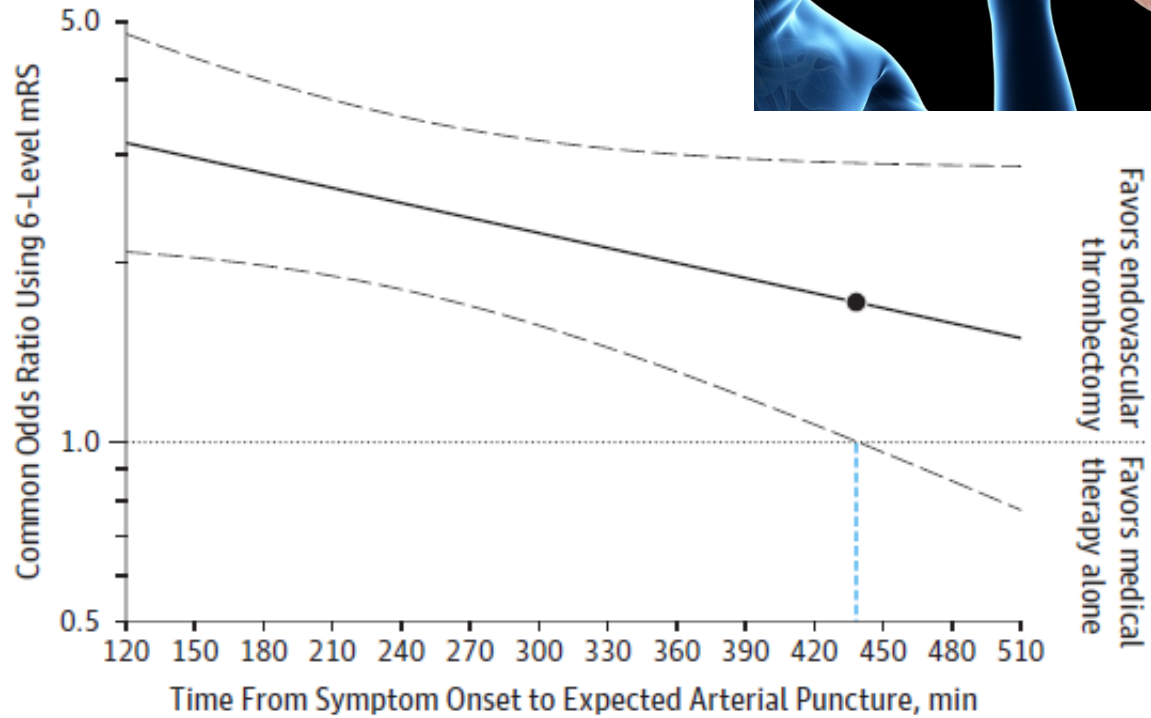
EXTEND-IA: Outcome



Intra-arteriële behandeling: Resultaten

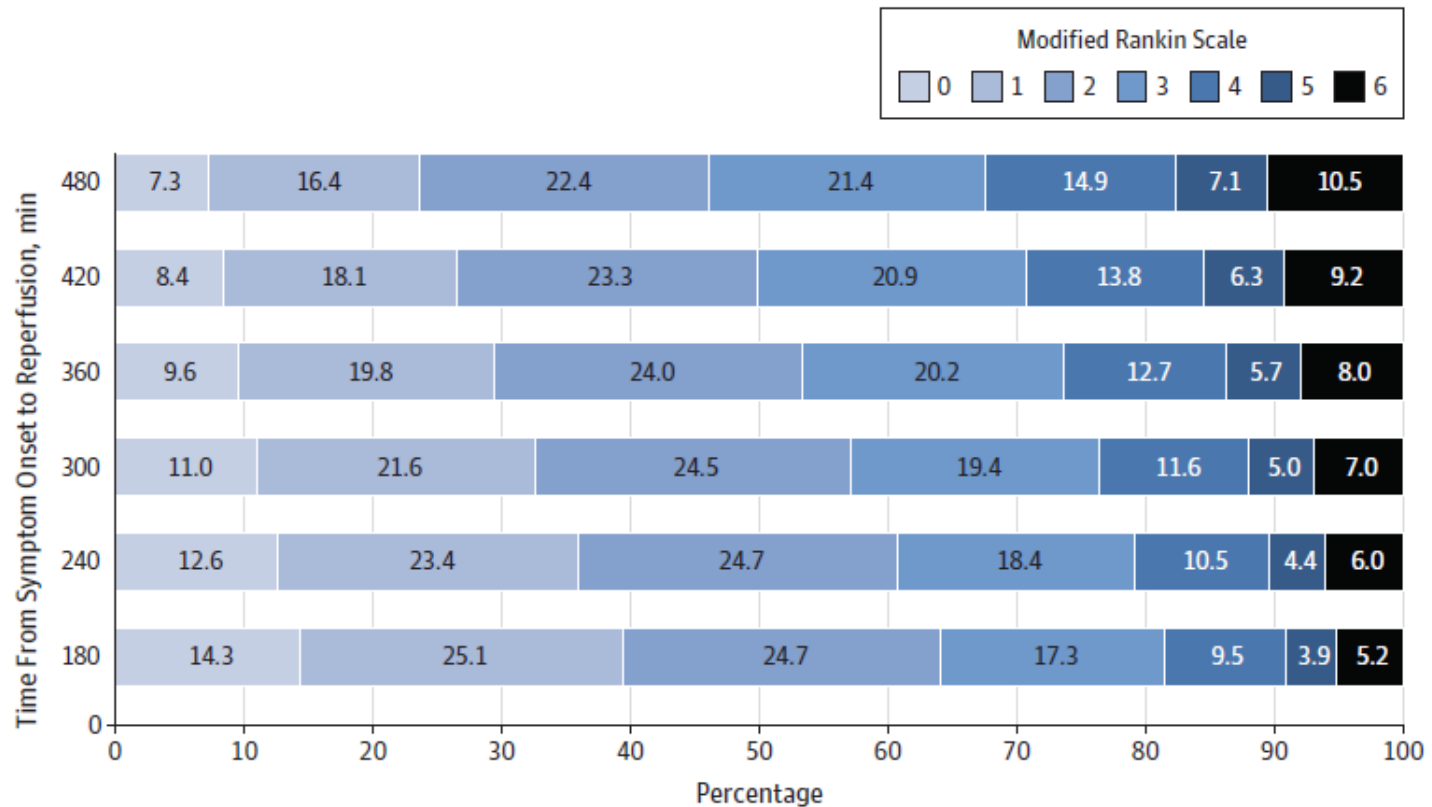


Time is Brain



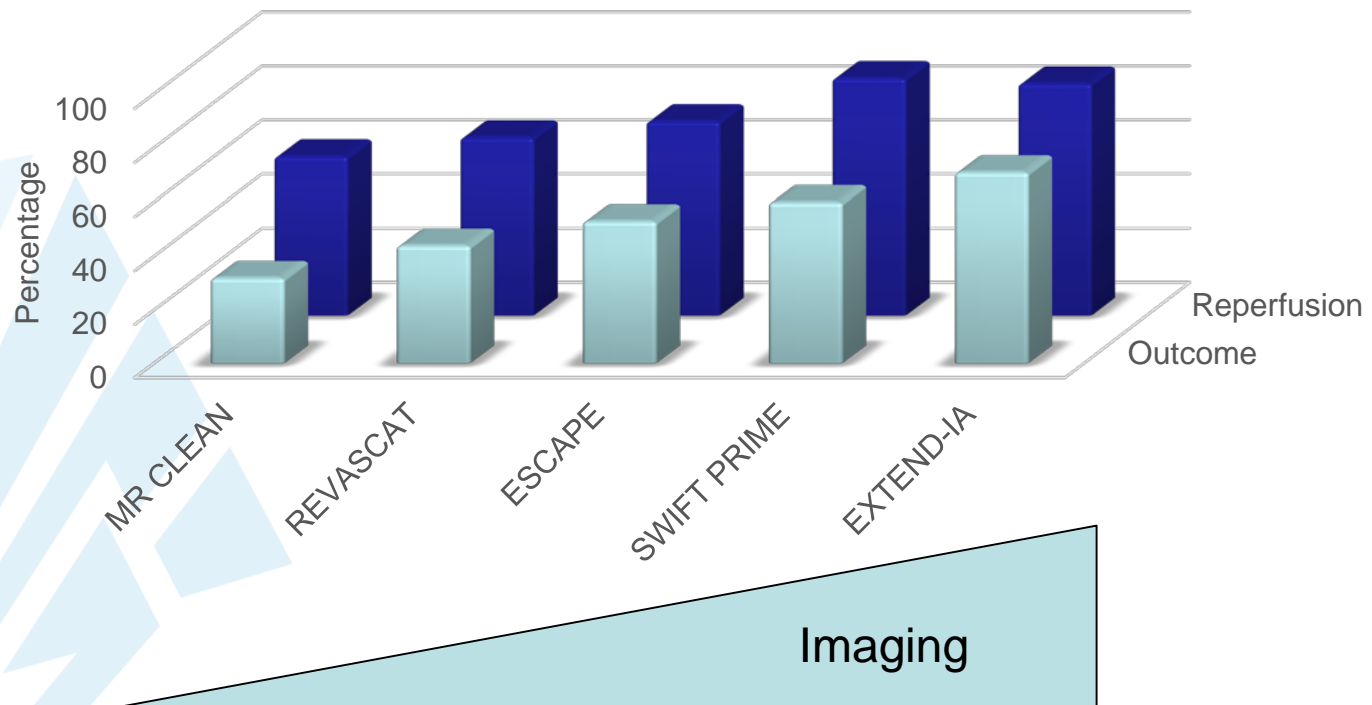
Saver, JAMA 2016

Patiënten met reperfusie



Saver, JAMA 2016

Uitkomst, reperfusie and imaging



Retrospectieve analyse in België 2007-2012



Inclusie criteria

- Leeftijd > 18 jaar
- Occlusie van een intracranieel bloedvat
- Begin van de behandeling binnen 12 uur na het begin van de symptomen
- Geen minimum NIHSS
- Met of zonder IV tPA

Resultaten

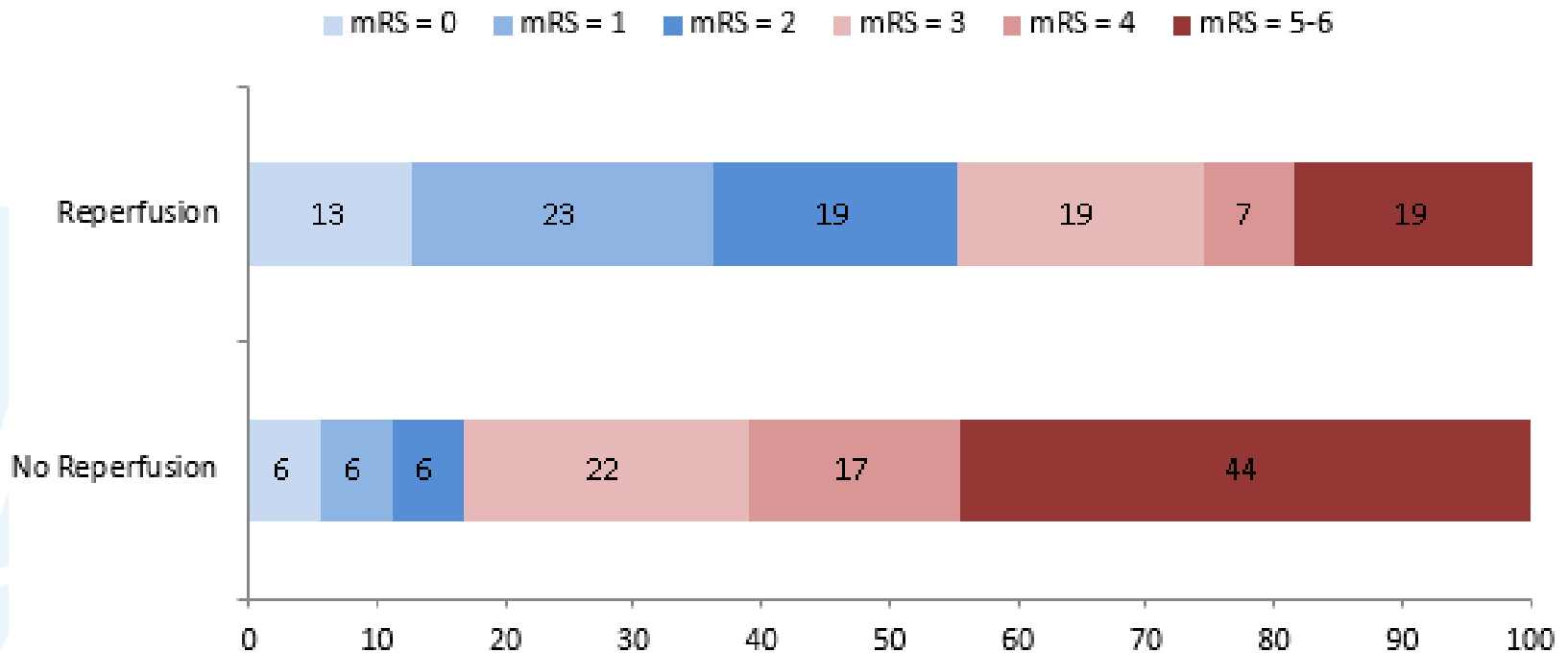
- 80 patiënten geïnccludeerd
- 65 anterieure and 15 posterieure circulatie
- Plaats van arteriële occlusie (AOL)

ICA	18 (23%)
MCA	47 (58%)
BA	15 (19%)

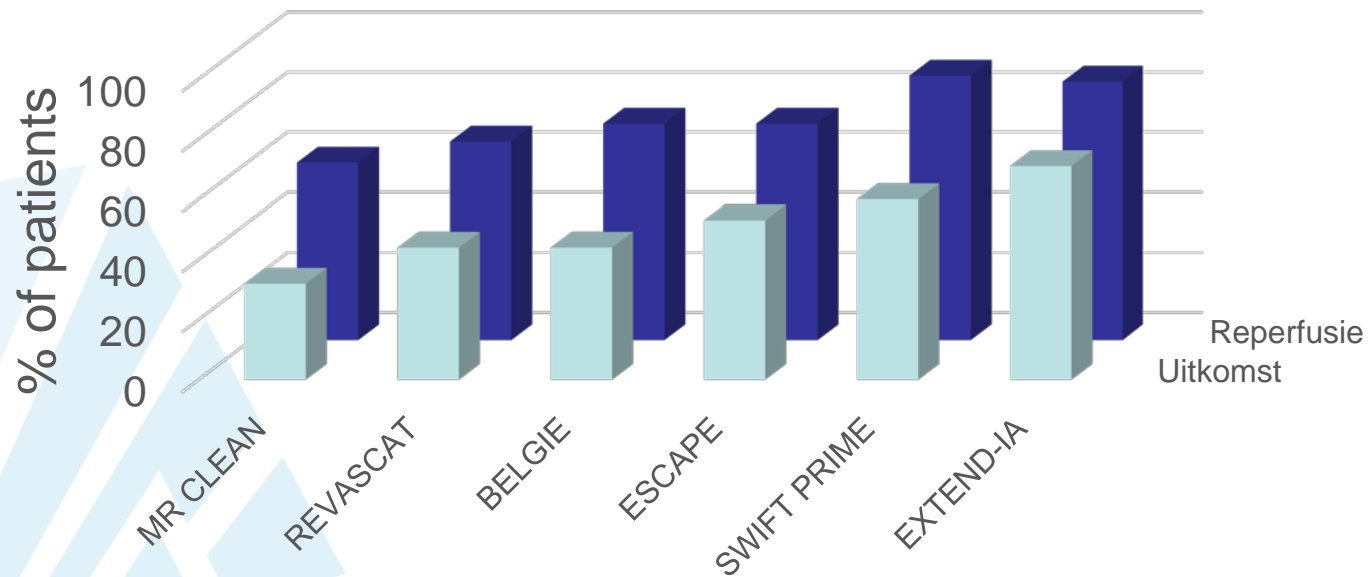
Baseline karakteristieken

Parameter	Overall	Total Anterior	BA
	N = 80	N = 65	N = 15
Age (years)			
Median	63	64	56
Range	22 – 86	22 – 86	29 -79
Sex – no. (%)			
Male	35 (43)	22 (34)	13 (87)
Female	45 (57)	43 (66)	2 (13)
NIHSS score			
Median	20	15	33
Range	6 – 42)	6 – 42	7 – 42
Intravenous t-PA – no.(%)	45 (56)	39 (60)	6 (40)
Time from stroke onset to groin insertion (minutes)			
N	62 (78)	53	9
Median	267	252	356
Device type – no.(%)			
Merci	4 (5)	3 (6)	1 (7)
Solitaire	73 (92)	59 (91)	14 (93)
Codman	2 (2)	2 (3)	0 (0)
Penumbra	1 (1)	1 (0)	0 (0)

Uitkomst in anterieure circulatie

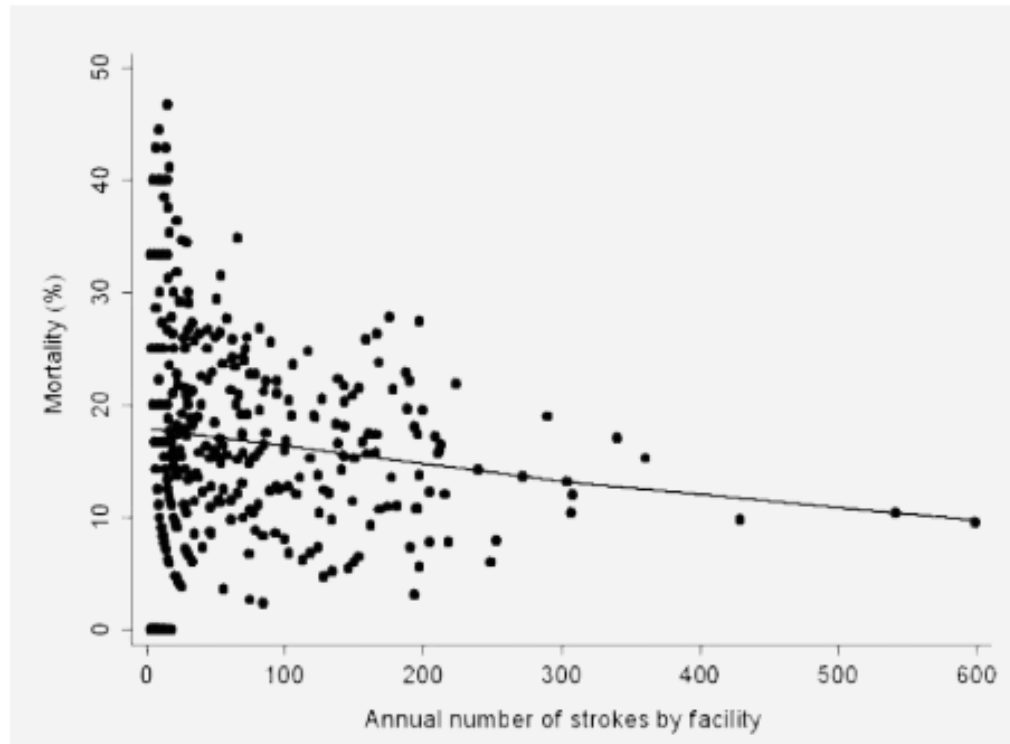


Reperfusie en functionele uitkomst



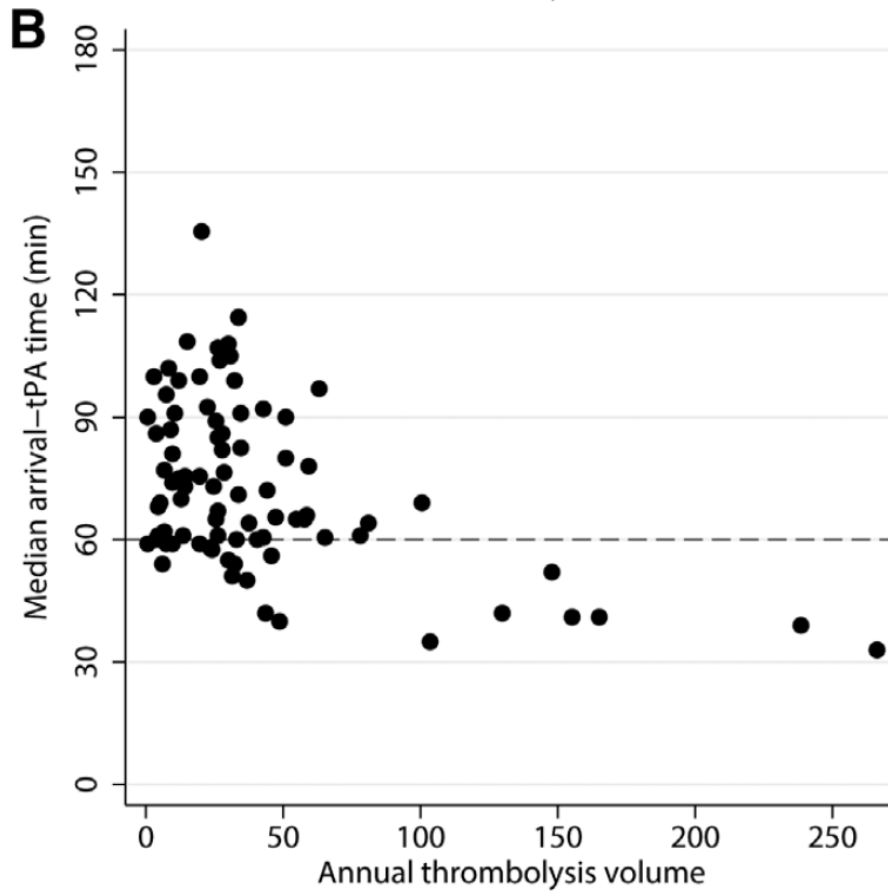
Optimaliseren van zorg: uitkomst

Figure 1 Institutional stroke mortality by hospital volume



Saposnik Neurology 2007

Optimaliseren van behandeling



Bray Stroke 2013

Conclusie

- Mechanische trombectomie is een bewezen behandeling voor patiënten met een occlusie van een groot bloedvat in de anterieure circulatie
- Een retrospectieve analyse van verschillende centra in België toont vergelijkbare resultaten als internationaal
- Behandeling kan slechts aangeboden worden in enkele centra => noodzaak tot het opzetten van goede beroerte-netwerken