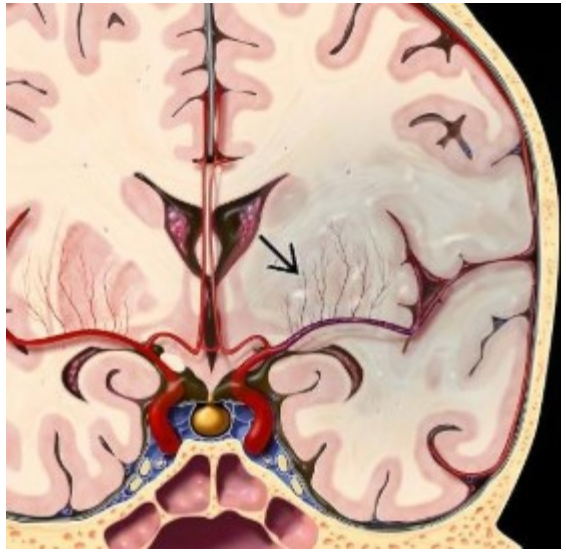
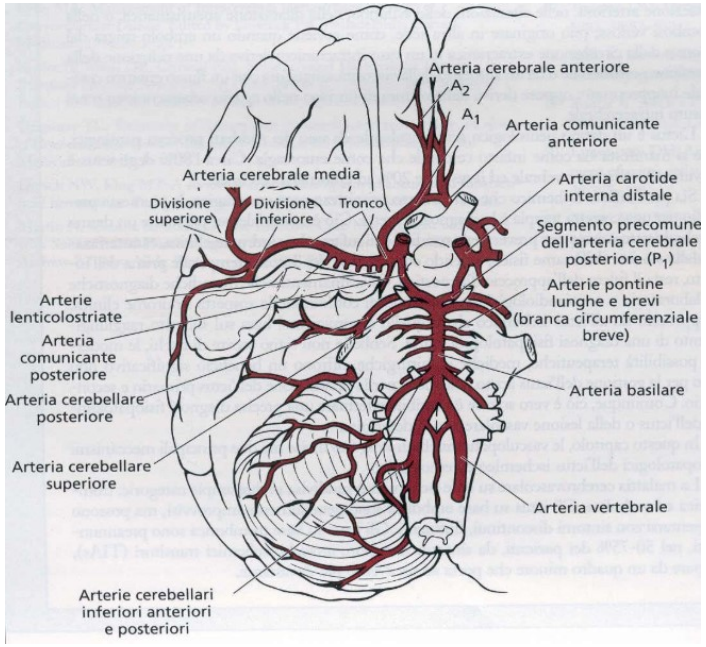
Indicazioni alla trombectomia

Antonino Barletta
UOC Neuroradiologia
ASST Papa Giovanni XXIII Bergamo

Definizione di Stroke Ischemico



L’ischemia cerebrale consiste in una riduzione del flusso ematico cerebrale o ipoperfusione a livello di una zona di tessuto nervoso



E’ causata dall’occlusione di un’arteria cerebrale da parte di un coagulo che si forma in sede (trombo) o da un frammento di trombo proveniente da un altro vaso (embolo)

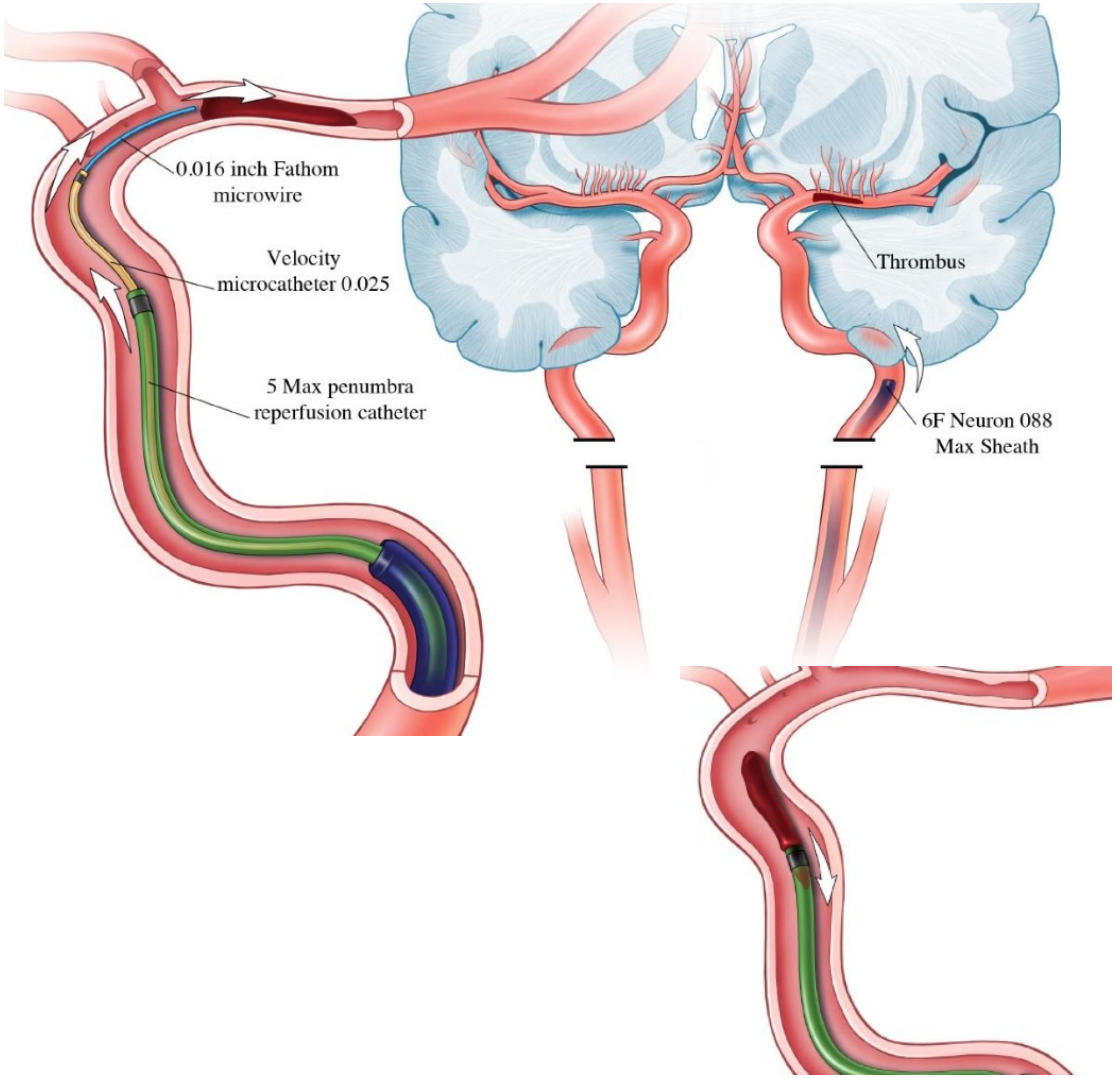
Trombectomia Meccanica

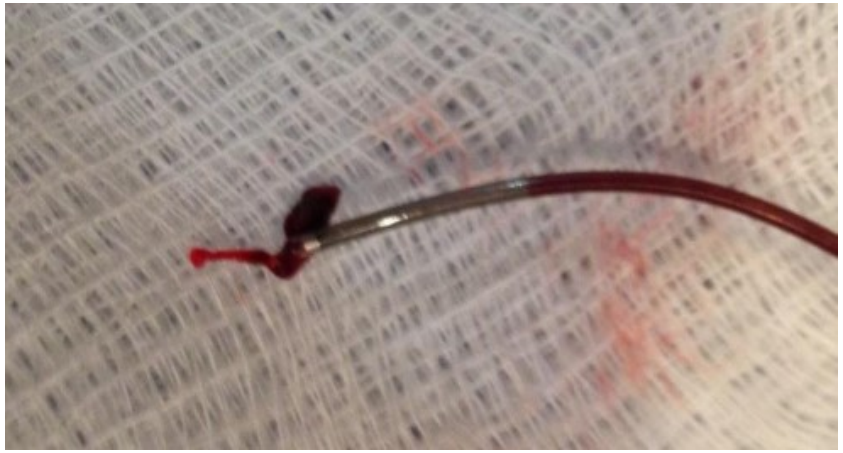
Che Cos'è la Trombectomia Meccanica?

Procedura potenzialmente salvavita che ha lo scopo di migliorare gli esiti funzionali.

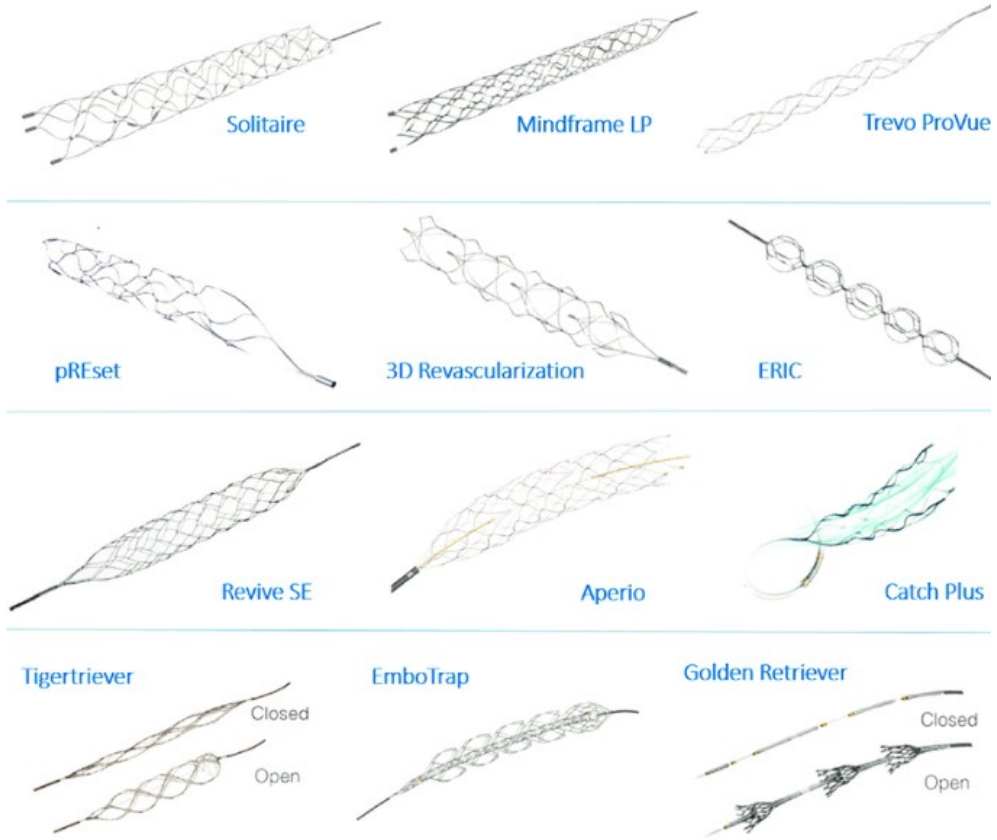
Dispositivi utilizzati: Stent retriever, aspirazione diretta (ADAPT).

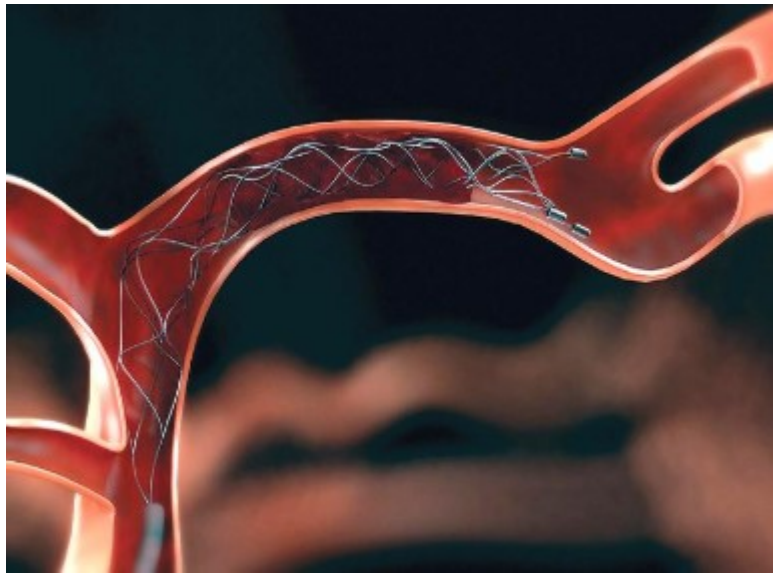
Aspirazione Diretta (ADAPT):





Stent Retriever: Modalità di utilizzo e efficacia.





Tecniche ibride: Combinazione di metodiche.

Aspiration Versus Stent Retriever Thrombectomy for Posterior Circulation Stroke

Marie Louise E. Bernsen ✉, Agnetha A.E. Bruggeman, Josje Brouwer, Bart J. Emmer, Charles B.L.M. Majoie, Jonathan M. Coutinho, Robert-Jan B. Goldhoorn, Robert J. van Oostenbrugge, Wim H. van Zwam, Christiaan van der Leij, Wouter J. Schonewille, Jasper M. Martens, Jeannette Hofmeijer and on behalf of the MR CLEAN Registry Investigators

Originally published 20 Oct 2021 | https://doi.org/10.1161/STROKEAHA.121.034926 | Stroke. 2022;53:749–757

Conclusions:

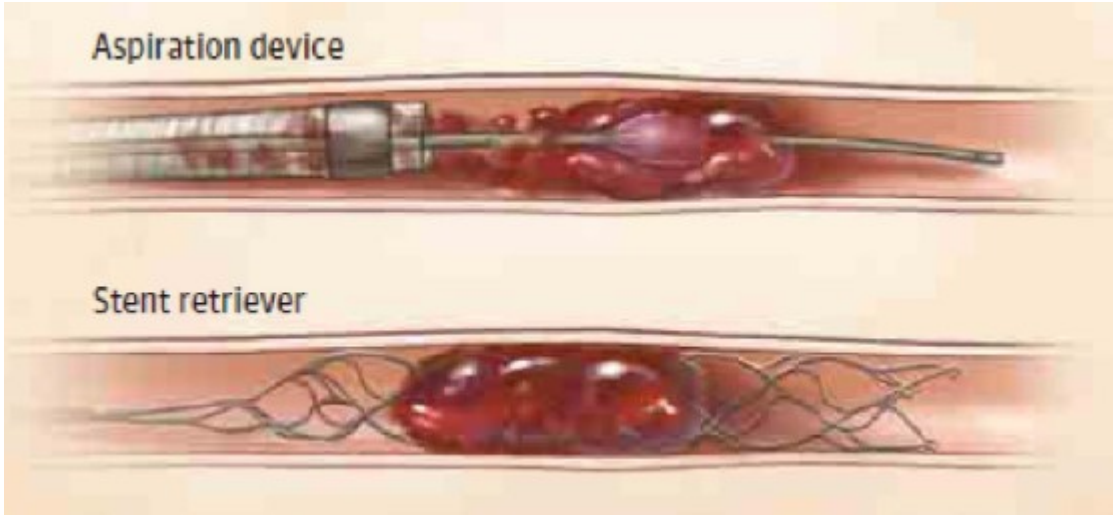
In this retrospective nonrandomized cohort study, our findings suggest that first-line aspiration is associated with a shorter procedure time, better reperfusion, and better clinical outcome than stent retriever thrombectomy in patients with ischemic stroke based on large vessel occlusion in the posterior circulation.

Effect of Endovascular Contact Aspiration vs Stent Retriever on Revascularization in Patients With Acute Ischemic Stroke and Large Vessel Occlusion

The ASTER Randomized Clinical Trial

Bertrand Lapergue, MD, PhD[1]; Raphael Blanc, MD, MSc[2]; Benjamin Gory, MD, PhD[3]; Julien Labreuche, BST[4]; Alain Duhamel, PhD[4]; Gautier Marnat, MD[5]; Suzana Saleme, MD[6]; Vincent Costalat, MD, PhD[7]; Serge Bracard, MD[8]; Hubert Desal, MD, PhD[9]; Mikael Mazighi, MD, PhD[2]; Arturo Consoli, MD[1]; Michel Piotin, MD, PhD[2]; for the ASTER Trial Investigators

JAMA. 2017;318(5):443-452. doi:10.1001/jama.2017.9644



Studi Chiave Pre-2018

ESCAPE

The NEW ENGLAND JOURNAL of MEDICINE

Randomized Assessment of Rapid Endovascular Treatment of Ischemic Stroke

Authors: Mayank Goyal, M.D., Andrew M. Demchuk, M.D., Bijoy K. Menon, M.D., Muneer Eesa, M.D., Jeremy L. Rempel, M.D., John Thornton, M.D., Daniel Roy, M.D., +37, for the ESCAPE Trial Investigators*

Published March 12, 2015 | **N Engl J Med 2015;372:1019-1030** | **DOI: 10.1056/NEJMoa1414905** | **VOL. 372 NO. 11**

Table 1. Baseline Characteristics and Process Measures.*

Variable	Intervention (N=165)	Control (N=150)
Demographic characteristics		
Age — yr		
Median	71	70
Interquartile range	60–81	60–81
Female sex — no. (%)	86 (52.1)	79 (52.7)
White race — no. (%)†	144 (87.3)	131 (87.3)

Table 2. Primary and Secondary Efficacy Outcomes.

Outcome	Intervention (N=165)	Control (N=150)	Difference (95% CI)*	Effect Variable	Unadjusted Value (95% CI)	Adjusted Value (95% CI)†
Primary outcome: modified Rankin score at 90 days‡				Common odds ratio	2.6 (1.7–3.8)	3.1 (2.0–4.7)
Modified Rankin score of 0–2 at 90 days — no./total no. (%)§	87/164 (53.0)	43/147 (29.3)	23.8 (13.2–34.4)	Rate ratio	1.8 (1.4–2.4)	1.7 (1.3–2.2)
NIHSS score of 0–2 at 90 days — no./total no. (%)	79/153 (51.6)	31/134 (23.1)	28.4 (17.8–39.2)	Rate ratio	2.2 (1.6–3.2)	2.1 (1.5–3.0)
Barthel Index score of 95–100 at 90 days — no./total no. (%)¶	94/163 (57.7)	49/146 (33.6)	24.1 (13.3–34.9)	Rate ratio	1.7 (1.3–2.2)	1.7 (1.3–2.2)
TICI score of 2b or 3 at final angiogram — no./total no. (%)‖	113/156 (72.4)					
Modified AOL score of 2 or 3 — no./total no. (%)**		43/138 (31.2)				
NIHSS score at 24 hours — median (interquartile range)††	6 (3–14)	13 (6–18)		Beta coefficient	4.0 (2.2–5.8)	4.1 (2.6–5.6)
NIHSS score at 90 days — median (interquartile range)††	2 (1–8)	8 (3–19)		Beta coefficient	6.5 (3.2–9.8)	6.5 (3.5–9.6)
EQ-5D visual-analogue scale score at 90 days — median (interquartile range)††‡‡	80 (60–90)	65 (50–80)		Beta coefficient	9.4 (3.5–15.2)	9.9 (3.8–16.0)

CONCLUSIONS

Among patients with acute ischemic stroke with a proximal vessel occlusion, a small infarct core, and moderate-to-good collateral circulation, rapid endovascular treatment improved functional outcomes and reduced mortality. (Funded by Covidien and others; ESCAPE ClinicalTrials.gov number, NCT01778335.)

MR CLEAN

The NEW ENGLAND JOURNAL of MEDICINE

A Randomized Trial of Intraarterial Treatment for Acute Ischemic Stroke

Authors: Olvert A. Berkhemer, M.D., Puck S.S. Fransen, M.D., Debbie Beumer, M.D., Lucie A. van den Berg, M.D., Hester F. Lingsma, Ph.D., Albert J. Yoo, M.D., Wouter J. Schonewille, M.D., +49, for the MR CLEAN Investigators*

Published January 1, 2015 | N Engl J Med 2015;372:11-20 | DOI: 10.1056/NEJMoa1411587

Table 2. Primary and Secondary Outcomes and Treatment Effects.*

Outcome	Intervention (N=233)	Control (N=267)	Effect Variable	Unadjusted Value (95% CI)	Adjusted Value (95% CI)†
Primary outcome: modified Rankin scale score at 90 days — median (interquartile range)	3 (2 to 5)	4 (3 to 5)	Common odds ratio	1.66 (1.21 to 2.28)	1.67 (1.21 to 2.30)
Secondary outcomes					
Clinical outcomes					
Modified Rankin score of 0 or 1 at 90 days — no. (%)	27 (11.6)	16 (6.0)	Odds ratio	2.06 (1.08 to 3.92)	2.07 (1.07 to 4.02)
Modified Rankin score of 0–2 at 90 days — no. (%)	76 (32.6)	51 (19.1)	Odds ratio	2.05 (1.36 to 3.09)	2.16 (1.39 to 3.38)
Modified Rankin score of 0–3 at 90 days — no. (%)	119 (51.1)	95 (35.6)	Odds ratio	1.89 (1.32 to 2.71)	2.03 (1.36 to 3.03)
NIHSS score after 24 hr — median (interquartile range)‡	13 (6 to 20)	16 (12 to 21)	Beta	2.6 (1.2 to 4.1)	2.3 (1.0 to 3.5)
NIHSS score at 5–7 days or discharge — median (interquartile range)§	8 (2 to 17)	14 (7 to 18)	Beta	3.2 (1.7 to 4.7)	2.9 (1.5 to 4.3)
Barthel index of 19 or 20 at 90 days — no./total no. (%)¶	99/215 (46.0)	73/245 (29.8)	Odds ratio	2.0 (1.3 to 2.9)	2.1 (1.4 to 3.2)
EQ-5D score at 90 days — median (interquartile range)‖	0.69 (0.33 to 0.85)	0.66 (0.30 to 0.81)	Beta	0.08 (0.00 to 0.15)	0.06 (−0.01 to 0.13)
Imaging outcomes					
No intracranial occlusion on follow-up CT angiography — no./total no. (%)**	141/187 (75.4)	68/207 (32.9)	Odds ratio	6.27 (4.03 to 9.74)	6.88 (4.34 to 10.94)
Final infarct volume on CT††					
Patients evaluated — no. (%)	138 (59.2)	160 (59.9)			
Median (interquartile range) — ml	49 (22 to 96)	79 (34 to 125)	Beta	20 (3 to 36)	19 (3 to 34)

Table 1. Baseline Characteristics of the 500 Patients.*

Characteristic	Intervention (N=233)	Control (N=267)
Age — yr		
Median	65.8	65.7
Interquartile range	54.5–76.0	55.5–76.4
Male sex — no. (%)	135 (57.9)	157 (58.8)
NIHSS score†		
Median (interquartile range)	17 (14–21)	18 (14–22)
Range	3–30	4–38
Location of stroke in left hemisphere — no. (%)	116 (49.8)	153 (57.3)
History of ischemic stroke — no. (%)	29 (12.4)	25 (9.4)
Atrial fibrillation — no. (%)	66 (28.3)	69 (25.8)
Diabetes mellitus — no. (%)	34 (14.6)	34 (12.7)
Prestroke modified Rankin scale score — no. (%)‡		
0	190 (81.5)	214 (80.1)
1	21 (9.0)	29 (10.9)
2	12 (5.2)	13 (4.9)
>2	10 (4.3)	11 (4.1)
Systolic blood pressure — mm Hg§	146±26.0	145±24.4
Treatment with IV alteplase — no. (%)	203 (87.1)	242 (90.6)
Time from stroke onset to start of IV alteplase — min		
Median	85	87
Interquartile range	67–110	65–116
ASPECTS — median (interquartile range)¶	9 (7–10)	9 (8–10)
Intracranial arterial occlusion — no./total no. (%)‖		
Intracranial ICA	1/233 (0.4)	3/266 (1.1)
ICA with involvement of the M1 middle cerebral artery segment	59/233 (25.3)	75/266 (28.2)
M1 middle cerebral artery segment	154/233 (66.1)	165/266 (62.0)
M2 middle cerebral artery segment	18/233 (7.7)	21/266 (7.9)
A1 or A2 anterior cerebral artery segment	1/233 (0.4)	2/266 (0.8)
Extracranial ICA occlusion — no./total no. (%)‖**	75/233 (32.2)	70/266 (26.3)
Time from stroke onset to randomization — min††		
Median	204	196
Interquartile range	152–251	149–266
Time from stroke onset to groin puncture — min		
Median	260	NA
Interquartile range	210–313	

CONCLUSIONS

In patients with acute ischemic stroke caused by a proximal intracranial occlusion of the anterior circulation, intraarterial treatment administered within 6 hours after stroke onset was effective and safe. (Funded by the Dutch Heart Foundation and others; MR CLEAN Netherlands Trial Registry number, NTR1804, and Current Controlled Trials number, ISRCTN10888758.)

EXTEND-IA

The NEW ENGLAND JOURNAL of MEDICINE

Endovascular Therapy for Ischemic Stroke with Perfusion-Imaging Selection

Authors: Bruce C.V. Campbell, M.D., Peter J. Mitchell, M.D., Timothy J. Kleinig, M.D., Helen M. Dewey, M.D., Leonid Churilov, Ph.D., Nawaf Yassi, M.D., Bernard Yan, M.D., +29, for the EXTEND-IA Investigators*

Published March 12, 2015 | **N Engl J Med 2015;372:1009-1018** | **DOI: 10.1056/NEJMoa1414792** | **VOL. 372 NO. 11**

Table 1. Characteristics of the Patients at Baseline.*

Characteristic	Alteplase-Only Group (N=35)	Endovascular-Therapy Group (N=35)
Age — yr	70.2±11.8	68.6±12.3
Male sex — no. (%)	17 (49)	17 (49)
Median NIHSS score (IQR)†	13 (9–19)	17 (13–20)

CONCLUSIONS

In patients with ischemic stroke with a proximal cerebral arterial occlusion and salvageable tissue on CT perfusion imaging, early thrombectomy with the Solitaire FR stent retriever, as compared with alteplase alone, improved reperfusion, early neurologic recovery, and functional outcome. (Funded by the Australian National Health and Medical Research Council and others; EXTEND-IA ClinicalTrials.gov number, NCT01492725, and Australian New Zealand Clinical Trials Registry number, ACTRN12611000969965.)

REVASCAT

The NEW ENGLAND JOURNAL of MEDICINE

Thrombectomy within 8 Hours after Symptom Onset in Ischemic Stroke

Authors: Tudor G. Jovin, M.D., Angel Chamorro, M.D., Erik Cobo, Ph.D., María A. de Miquel, M.D., Carlos A. Molina, M.D., Alex Rovira, M.D., Luis San Román, M.D., +20, for the REVASCAT Trial Investigators*

Published June 11, 2015 | **N Engl J Med 2015;372:2296-2306** | **DOI: 10.1056/NEJMoa1503780** | **VOL. 372 NO. 24**

Table 1. Characteristics of the Patients and Workflow Measures at Baseline.*

Variable	Thrombectomy (N=103)	Control (N=103)
Mean age ±SD — yr	65.7±11.3	67.2±9.5
Male sex — no. (%)	55 (53.4)	54 (52.4)

CONCLUSIONS

Among patients with anterior circulation stroke who could be treated within 8 hours after symptom onset, stent retriever thrombectomy reduced the severity of post-stroke disability and increased the rate of functional independence. (Funded by Fundació Ictus Malaltia Vascular through an unrestricted grant from Covidien and others; REVASCAT ClinicalTrials.gov number, NCT01692379.)

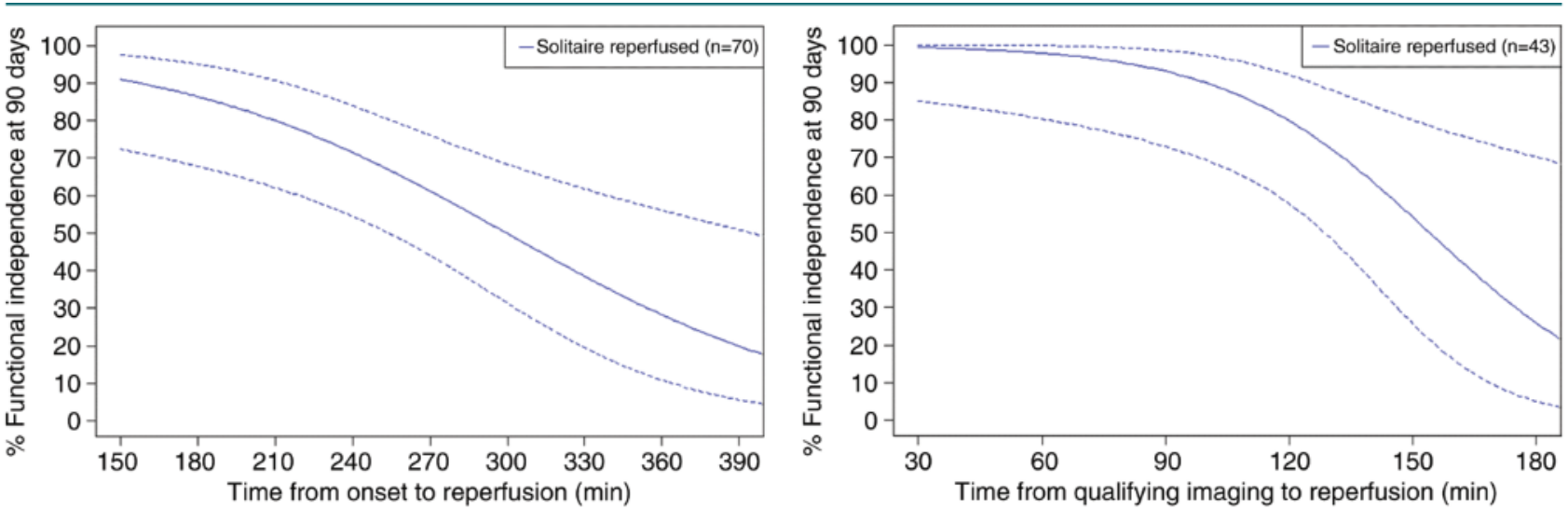
SWIFT PRIME

Mayank Goyal, MD, FRCPC
Ashutosh P. Jadhav, MD, PhD
Alain Bonafe, MD
Hans Diener, MD
Vitor Mendes Pereira, MD
Elad Levy, MD
Blaise Baxter, MD
Tudor Jovin, MD
Reza Jahan, MD
Bijoy K. Menon, MD
Jeffrey L. Saver, MD
For the SWIFT PRIME investigators

Radiology

Analysis of Workflow and Time to Treatment and the Effects on Outcome in Endovascular Treatment of Acute Ischemic Stroke: Results from the SWIFT PRIME Randomized Controlled Trial[1]

Conclusion: Fast reperfusion leads to improved functional outcome among patients with acute stroke treated with stent retrievers. Detailed attention to workflow with iterative feedback and aggressive time goals may have contributed to efficient workflow environments.



Miglioramenti significativi negli esiti funzionali.

Studi Chiave Post-2018

ASTER, SKIP, DIRECT-MT: Confronti tra dispositivi e tecniche.

Effect of Mechanical Thrombectomy Without vs With Intravenous Thrombolysis on Functional Outcome Among Patients With Acute Ischemic Stroke

The SKIP Randomized Clinical Trial

Kentaro Suzuki, MD, PhD[1]; Yuji Matsumaru, MD, PhD[2]; Masataka Takeuchi, MD[3]; et al

JAMA. 2021;325(3):244-253. doi:10.1001/jama.2020.23522

International Journal of Stroke
0(0) 1–10

Direct Intra-arterial thrombectomy in order to Revascularize AIS patients with large vessel occlusion Efficiently in Chinese Tertiary hospitals: A Multicenter randomized clinical Trial (DIRECT-MT)—Protocol

Pengfei Yang[1], Kilian M Treurniet[2], Lei Zhang[1], Yongwei Zhang[3], Zifu Li[1], Pengfei Xing[3], Yongxin Zhang[1], Ping Zhang[3], Hao Wang[1], Bo Hong[1], Diederik WJ Dippel[4], Yvo BWEM Roos[5], Charles BLM Majoie[2], Benqiang Deng[3] and Jianmin Liu[1]; on behalf of DIRECT-MT investigators*

BEYOND-SWIFT, RESILIENT, MR CLEAN-NO IV: Espansione dei criteri di inclusione e alternative terapeutiche.

Thrombectomy for Stroke in the Public Health Care System of Brazil

Authors: Sheila O. Martins, M.D., Ph.D., Francisco Mont'Alverne, M.D., Ph.D., Letícia C. Rebello, M.D., Daniel G. Abud, M.D., Ph.D., Gisele S. Silva, M.D., Ph.D., Fabrício O. Lima, M.D., Ph.D., Bruno S.M. Parente, M.D., +25, for the RESILIENT Investigators*

Published June 10, 2020 | N Engl J Med 2020;382:2316-2326 | DOI: 10.1056/NEJMoa2000120 | VOL. 382 NO. 24

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 NOVEMBER 11, 2021 VOL. 385 NO. 20

A Randomized Trial of Intravenous Alteplase before Endovascular Treatment for Stroke

N.E. LeCouffe, M. Kappelhof, K.M. Treurniet, L.A. Rinkel, A.E. Bruggeman, O.A. Berkhemer, L. Wolff, H. van Voorst, M.L. Tolhuisen, D.W.J. Dippel, A. van der Lugt, A.C.G.M. van Es, J. Boiten, G.J. Lycklama à Nijeholt, K. Keizer, R.A.R. Gons, L.S.F. Yo, R.J. van Oostenbrugge, W.H. van Zwam, B. Roozenbeek, H.B. van der Worp, R.T.H. Lo, I.R. van den Wijngaard, I.R. de Ridder, V. Costalat, C. Arquizan, R. Lemmens, J. Demeestere, J. Hofmeijer, J.M. Martens, W.J. Schonewille, J.-A. Vos, M. Uyttenboogaart, R.P.H. Bokkers, J.H. van Tuijl, H. Kortman, F.H.B.M. Schreuder, H.D. Boogaarts, K.F. de Laat, L.C. van Dijk, H.M. den Hertog, B.A.A.M. van Hasselt, P.J.A.M. Brouwers, T. Bulut, M.J.M. Remmers, A. van Norden, F. Imani, A.D. Rozeman, O.E.H. Elgersma, P. Desfontaines, D. Brisbois, Y. Samson, F. Clarençon, G.M. Krietemeijer, A.A. Postma, P.-J. van Doormaal, R. van den Berg, A. van der Hoorn, L.F.M. Beenen, D. Nieboer, H.F. Lingsma, B.J. Emmer, J.M. Coutinho, C.B.L.M. Majoie, and Y.B.W.E.M. Roos, for the MR CLEAN–NO IV Investigators*

DAWN, DEFUSE 3: Estensione della finestra temporale a 24 ore.

Thrombectomy 6 to 24 Hours after Stroke with a Mismatch between Deficit and Infarct

Authors: Raul G. Nogueira, M.D., Ashutosh P. Jadhav, M.D., Ph.D., Diogo C. Haussen, M.D., Alain Bonafe, M.D., Ronald F. Budzik, M.D., Parita Bhuva, M.D., Dileep R. Yavagal, M.D., +40, for the DAWN Trial Investigators*

Published November 11, 2017 | N Engl J Med 2018;378:11-21 | DOI: 10.1056/NEJMoa1706442 | VOL. 378 NO. 1

CONCLUSIONS

Among patients with acute stroke who had last been known to be well 6 to 24 hours earlier and who had a mismatch between clinical deficit and infarct, outcomes for disability at 90 days were better with thrombectomy plus standard care than with standard care alone.
(Funded by Stryker Neurovascular; DAWN ClinicalTrials.gov number, NCT02142283.)

Thrombectomy for Stroke at 6 to 16 Hours with Selection by Perfusion Imaging

Authors: Gregory W. Albers, M.D., Michael P. Marks, M.D., Stephanie Kemp, B.S., Soren Christensen, Ph.D., Jenny P. Tsai, M.D., Santiago Ortega-Gutierrez, M.D., Ryan A. McTaggart, M.D., +19, for the DEFUSE 3 Investigators*

Published January 24, 2018 | N Engl J Med 2018;378:708-718 | DOI: 10.1056/NEJMoa1713973 | VOL. 378 NO. 8

CONCLUSIONS

Endovascular thrombectomy for ischemic stroke 6 to 16 hours after a patient was last known to be well plus standard medical therapy resulted in better functional outcomes than standard medical therapy alone among patients with proximal middle cerebral artery or internal-carotid-artery occlusion and a region of tissue that was ischemic but not yet infarcted.
(Funded by the National Institute of Neurological Disorders and Stroke; DEFUSE 3 ClinicalTrials.gov number, NCT02586415.)

Si Passa da…

Fino a 6 ore: Standard di cura basato su studi iniziali.

a…

6-24 ore: Evidenze da DAWN e DEFUSE 3.

Linee Guida

Linee Guida "Attuali"

Multisociety Consensus Quality Improvement Revised Consensus Statement for Endovascular Therapy of Acute Ischemic Stroke

From the American Association of Neurological Surgeons (AANS), American Society of Neuroradiology (ASNR), Cardiovascular and Interventional Radiology Society of Europe (CIRSE), Canadian Interventional Radiology Association (CIRA), Congress of Neurological Surgeons (CNS), European Society of Minimally Invasive Neurological Therapy (ESMINT), European Society of Neuroradiology (ESNR), European Stroke Organization (ESO), Society for Cardiovascular Angiography and Interventions (SCAI), Society of Interventional Radiology (SIR), Society of NeuroInterventional Surgery (SNIS), and World Stroke Organization (WSO), David Sacks, MD, Blaise Baxter, MD, Bruce C.V. Campbell, MBBS, PhD, Jeffrey S. Carpenter, MD, Christophe Cognard, MD, PhD, Diederik Dippel, MD, PhD, Muneer Eesa, MD, Urs Fischer, MD, Klaus Hausegger, MD, Joshua A. Hirsch, MD, Muhammad Shazam Hussain, MD, Olav Jansen, MD, Mahesh V. Jayaraman, MD, Alexander A. Khalessi, MD, MS, Bryan W. Kluck, DO, Sean Lavine, MD, Philip M. Meyers, MD, Stephen Ramee, MD, Daniel A. Rüfenacht, MD, Clemens M. Schirmer, MD, PhD, and Dierk Vorwerk, MD

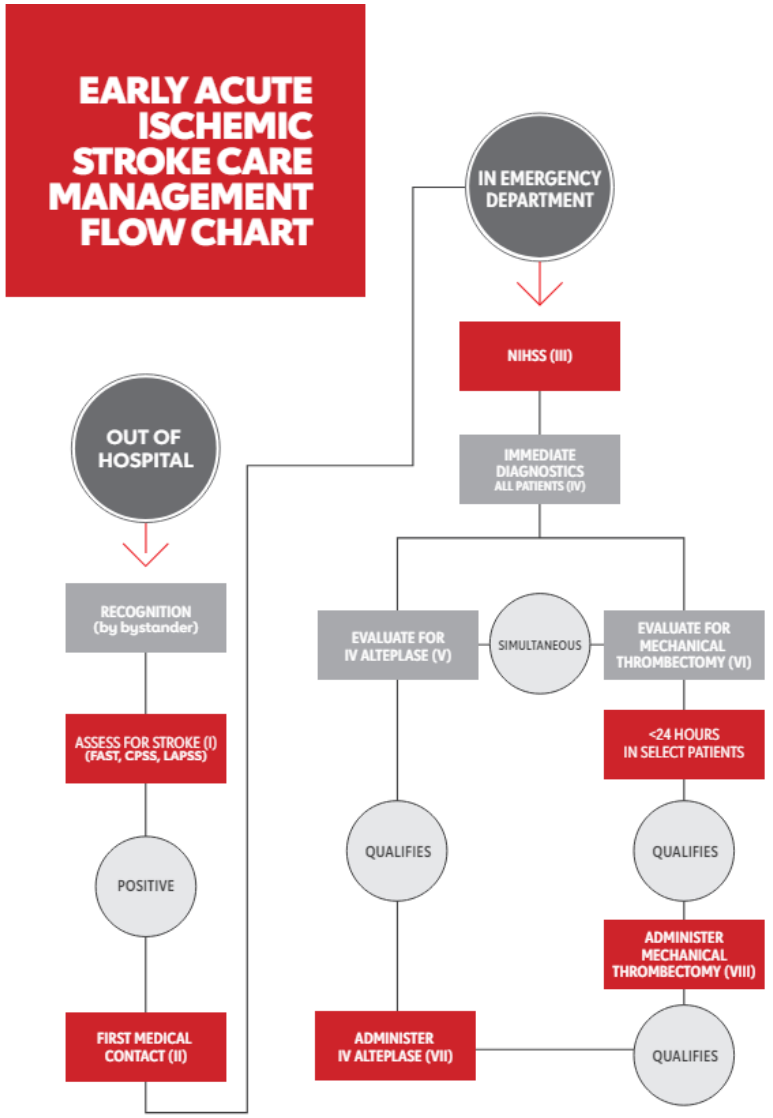
International Journal of Stroke
Volume 13, Issue 6, August 2018, Pages 612-632

https://doi.org/10.1177/1747493018778713

Indications and Contraindications

EVT for acute ischemic stroke with large vessel occlusion is established in guidelines as the standard of care (22,36). If the patient is also eligible for intravenous TPA, this drug should be administered as a "bridging" strategy in parallel without delaying thrombectomy. Waiting to assess "response" to TPA is strongly discouraged (22), as clinical improvement may not indicate recanalization.

American Heart Association (AHA) / American Stroke Association (ASA):



- IV alteplase within 4.5 hours of stroke onset remains the standard of care for most ischemic stroke patients, providing the opportunity for more favorable outcomes. Patients eligible for IV alteplase should receive it, even if mechanical thrombectomy is being considered.
- Mechanical thrombectomy evaluation and treatment should occur as rapidly as possible to ensure the treatment of as many eligible patients as possible.
- Mechanical thrombectomy is recommended within 16 hours and reasonable up to 24 hours in selected patients with AIS with large vessel occlusion in the anterior circulation greater than 6 hours from symptom onset who meet certain advanced imaging criteria.
- The benefits of both IV alteplase and mechanical thrombectomy are time dependent. The earlier the treatment within the time window, the greater the benefit to patients.

European Stroke Organization (ESO):

European Stroke Organisation (ESO) – European Society for Minimally Invasive Neurological Therapy (ESMINT) Guidelines on Mechanical Thrombectomy in Acute Ischemic Stroke

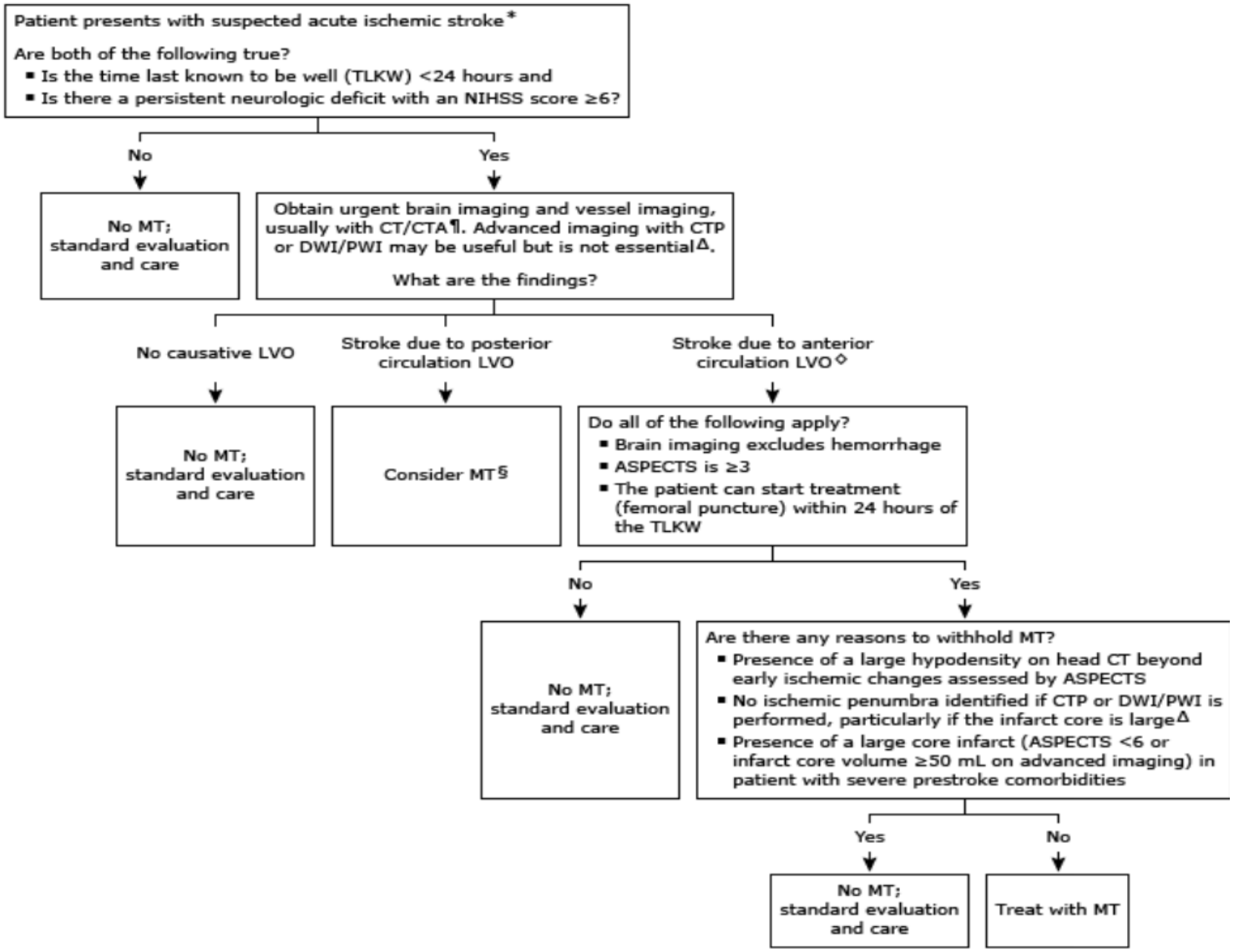
Guillaume Turc ,[1,2,3,4] Pervinder Bhogal ,[5] Urs Fischer,[6] Pooja Khatri,[7] Kyriakos Lobotesis,[8] Mikaël Mazighi,[3,9,10,11] Peter D. Schellinger,[12] Danilo Toni,[13] Joost de Vries,[14] Philip White,[15] Jens Fiehler[16]

J NeuroIntervent Surg 2023;**15**:e8. doi:10.1136/neurintsurg-2018-014569

Results We found high-quality evidence to recommend MT plus best medical management (BMM, including intravenous thrombolysis whenever indicated) to improve functional outcome in patients with LVO-related acute ischemic stroke within 6 hours after symptom onset. We found moderate quality of evidence to recommend MT plus BMM in the 6–24h time window in patients meeting the eligibility criteria of published randomized trials. These guidelinesdetails aspects of prehospital management, patient selection based on clinical and imaging characteristics, and treatment modalities.

Conclusions MT is the standard of care in patients with LVO-related acute stroke. Appropriate patient selection and timely reperfusion are crucial.

Selezione dei Pazienti



Criteri di Inclusione:

Età

Stato clinico (scala NIHSS)

Imaging cerebrale (TC/CTP, RM)

Sede dell'occlusione (ICA, M1 ecc…)

Raccomandazione 9.37 **Grado Forte a favore**

In pazienti adulti con ictus ischemico acuto da occlusione di grossa arteria del circolo anteriore (arteria carotide interna intracranica e/o arteria cerebrale media tratto M1) fra 6 e 24 ore dall'ultima volta in cui sono stati visti/sentiti in benessere, è raccomandato il trattamento endovascolare associato al miglior trattamento medico (MTM) rispetto al solo MTM, secondo i criteri dei trial DEFUSE 3 e DAWN.

Sintesi 9.41

I criteri di selezione dei pazienti arruolati nei trial DEFUSE 3 e DAWN sono i seguenti:

DEFUSE-3: RM DW/PW o TCP
- 6-16 ore dall'ultima volta visti/sentiti in benessere
- età ≤90 anni
- NIHSS≥6
- presenza di core infartuale < 70 ml, area di penombra ≥ 15 ml, rapporto volumetrico fra area di ipoperfusione e area infartuale ≥1.8

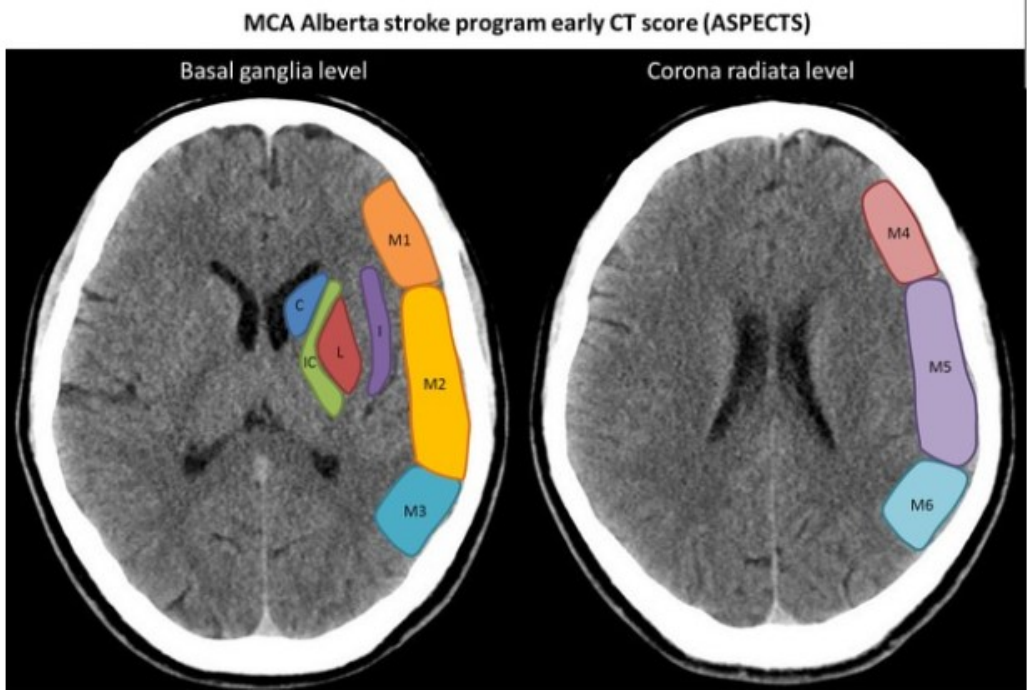
DAWN: RM DW o TCP (solo core)
- 6-24 ore dall'ultima volta visti/sentiti in benessere
- età ≥ 80 anni, punteggio NIHSS ≥10 e volume infartuale < 21 ml
- età < 80 anni, punteggio NIHSS ≥10 e volume infartuale <31 ml
- età < 80 anni, punteggio NIHSS ≥20 e volume infartuale fra 31 e 51 ml

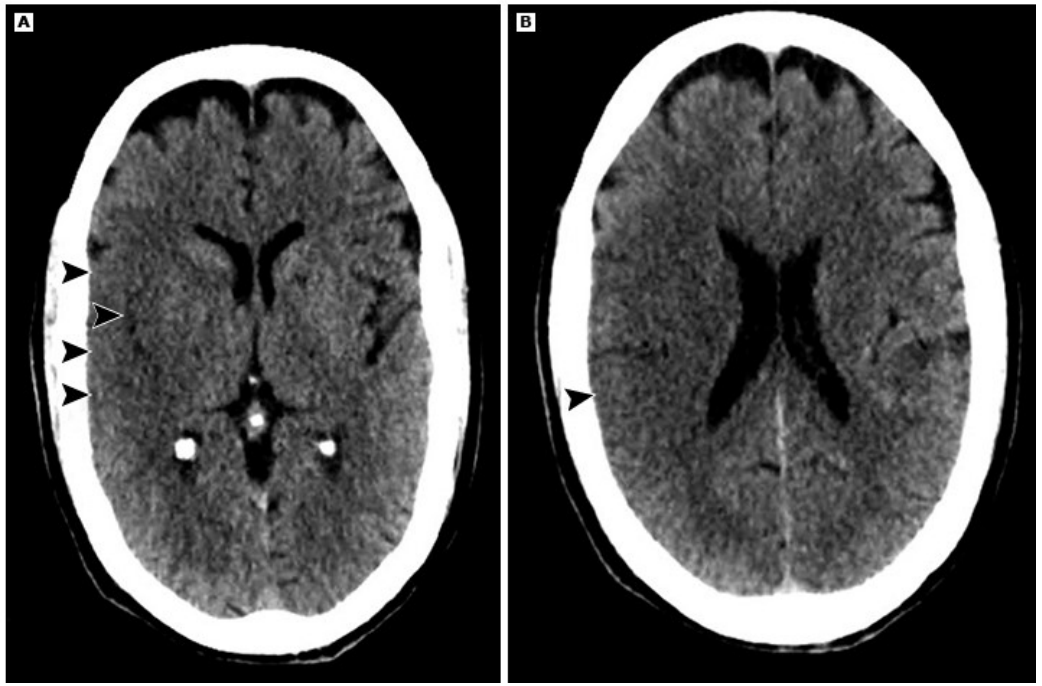
Protocollo di Imaging

- *TC basale*
- *Angio TC*
- *TC perfusionale*

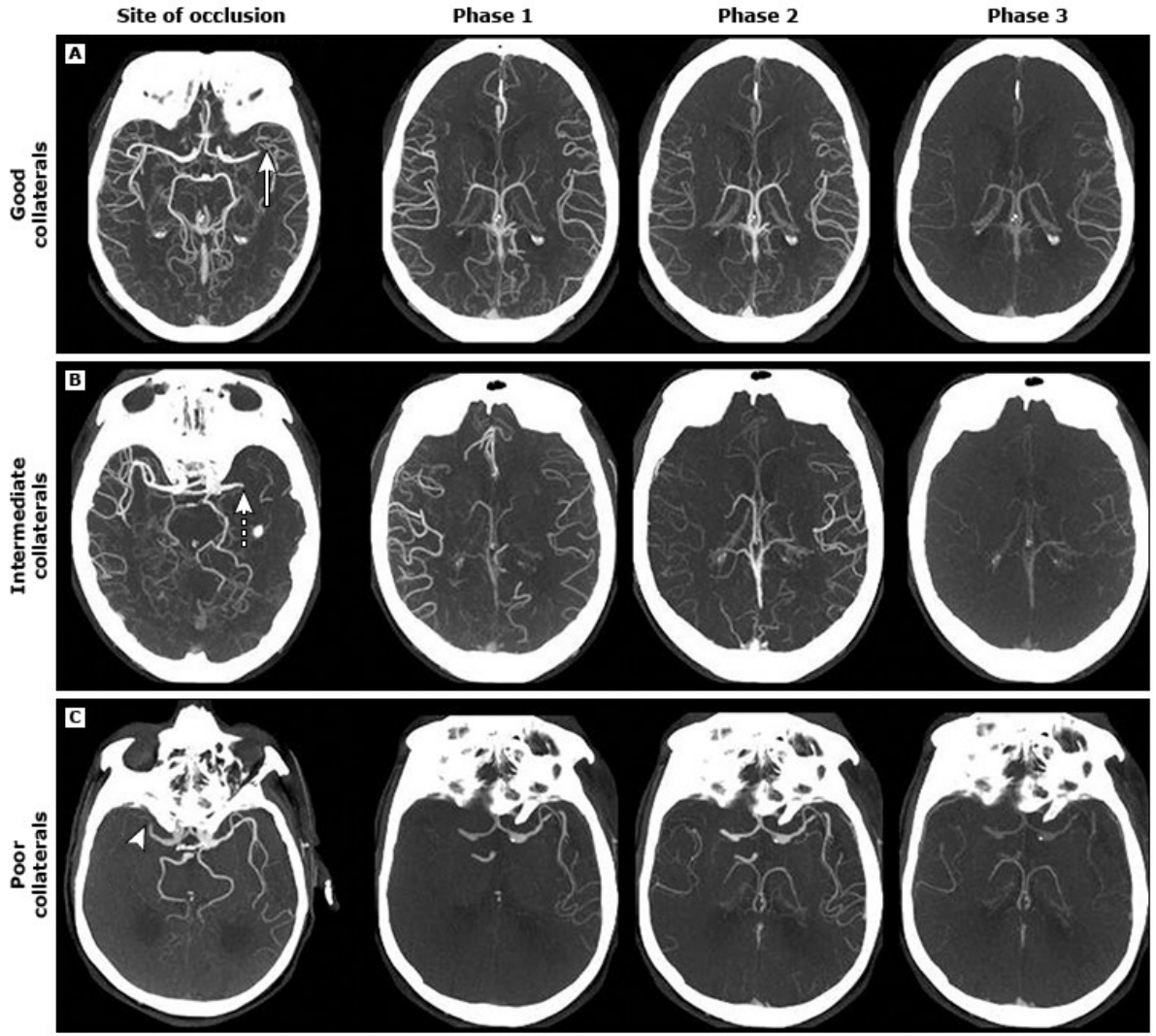
- *Risonanza magnetica*

TC basale

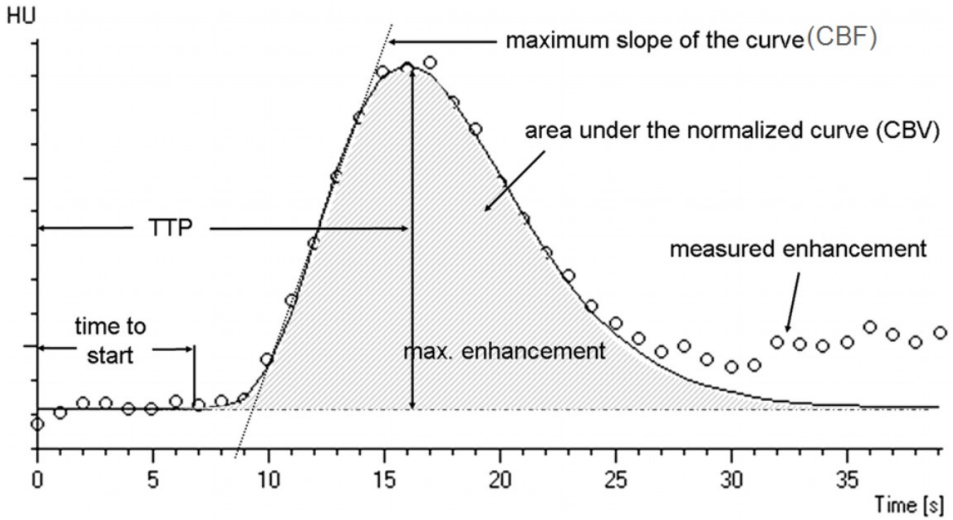

MCA Alberta stroke program early CT score (ASPECTS)
Basal ganglia level
Corona radiata level
M1
C
IC
L
I
M2
M3
M4
M5
M6

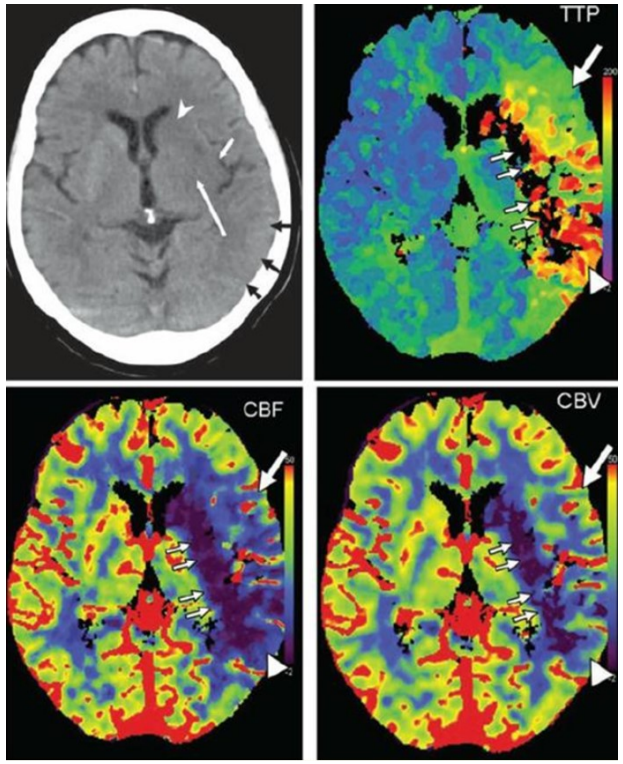

A
B

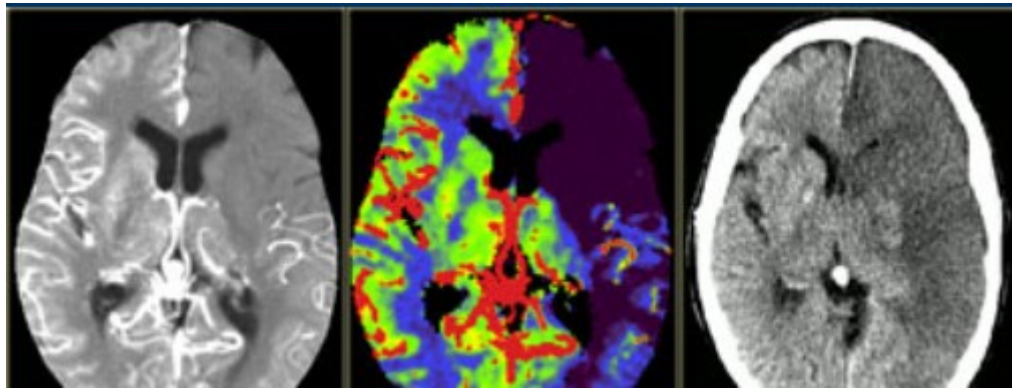
Angio-TC studio multifasico



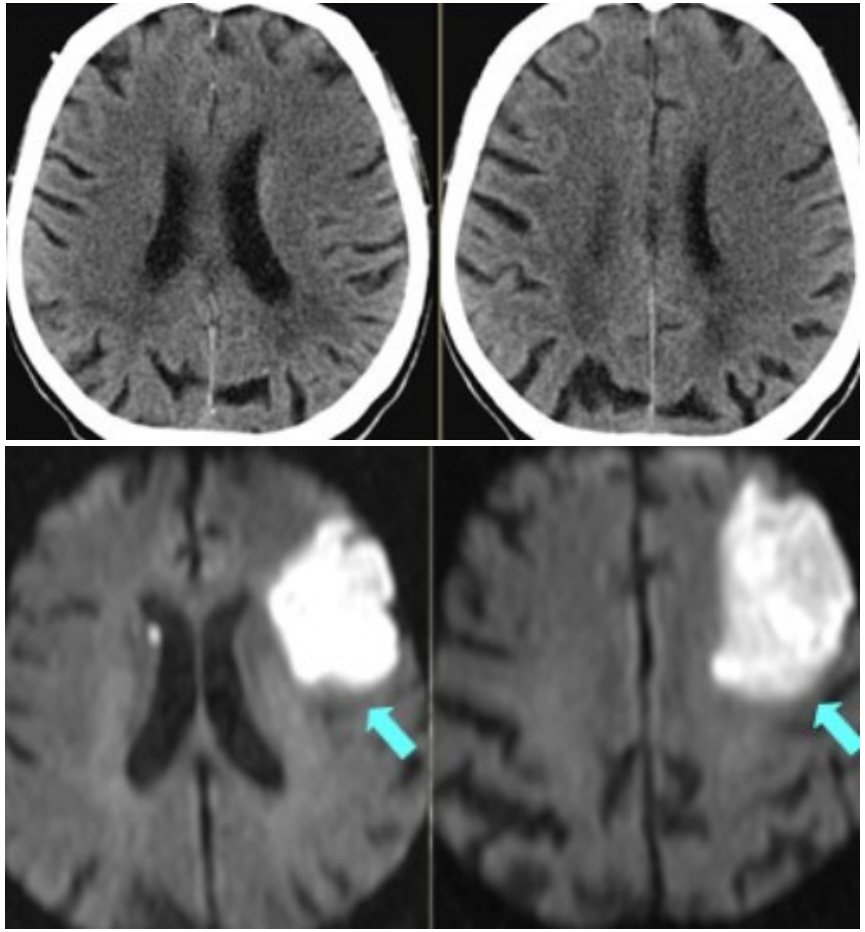
TC perfusion

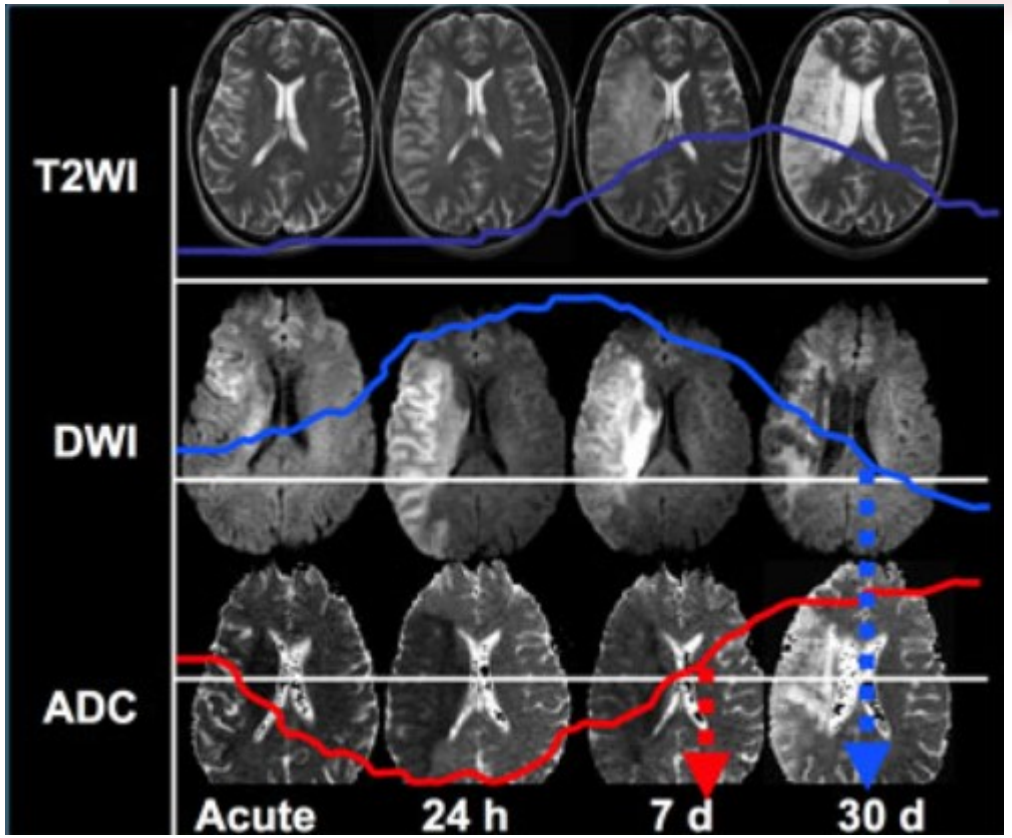




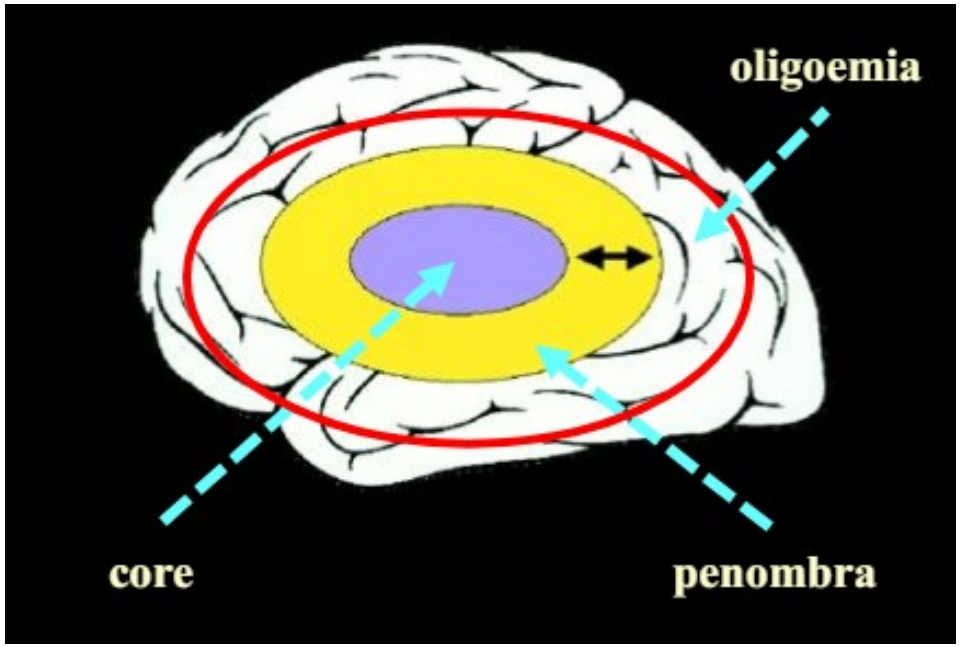


Studio RM





Ruolo dell'imaging avanzato (1):

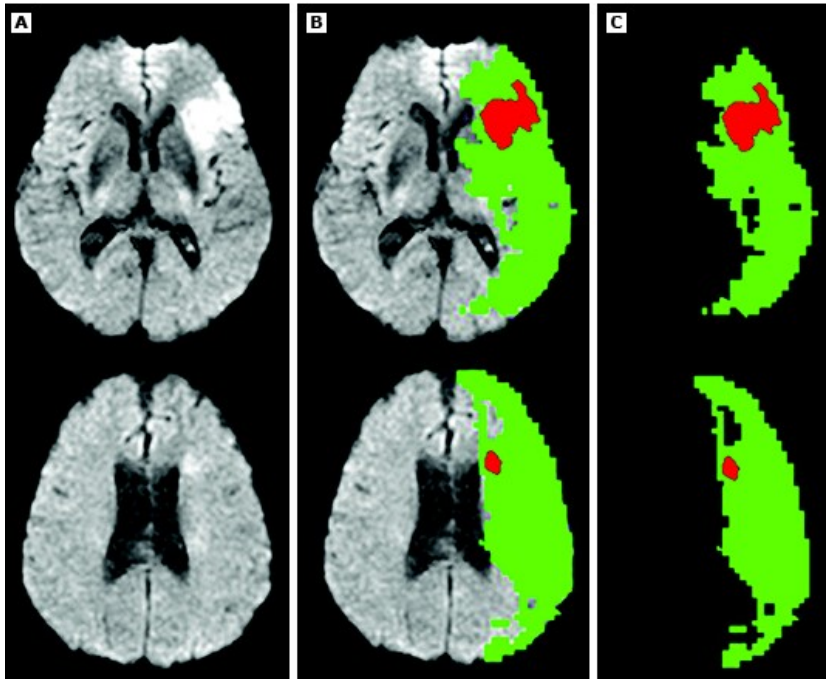


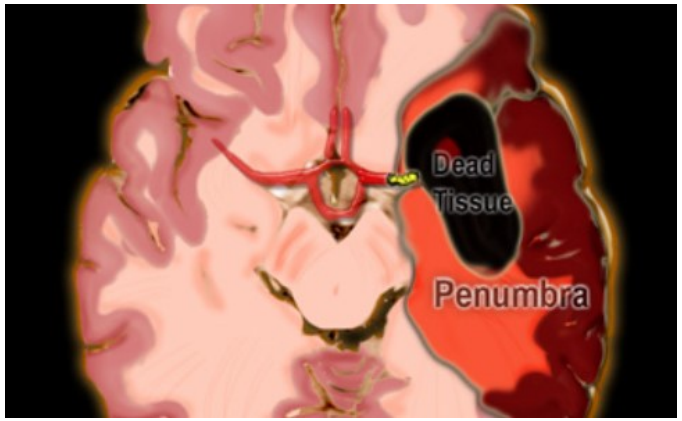
Dal punto di vista funzionale la lesione ischemica acuta può essere suddivisa in 3 zone distinte:

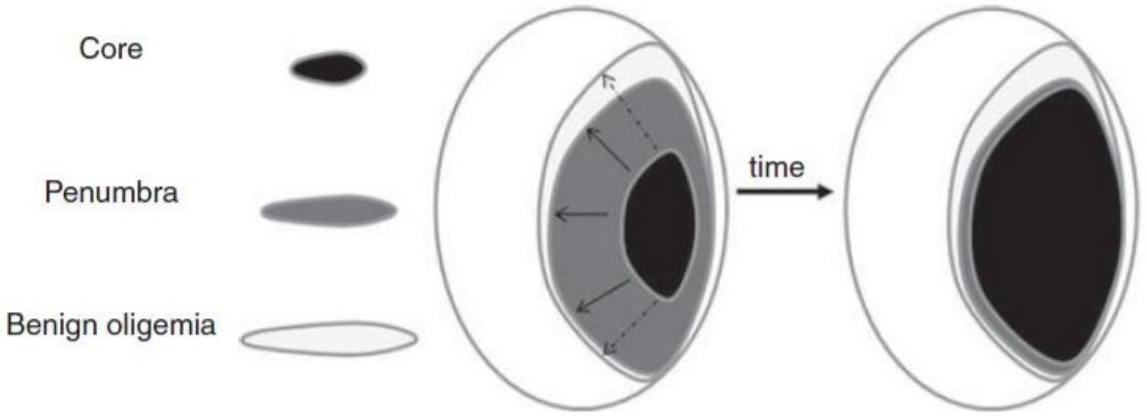
1) una zona centrale = il core ischemico
2) una zona periferica = la penombra ischemica
3) una zona perilesionale = l'oligoemia benigna

Ruolo dell'imaging avanzato (2):

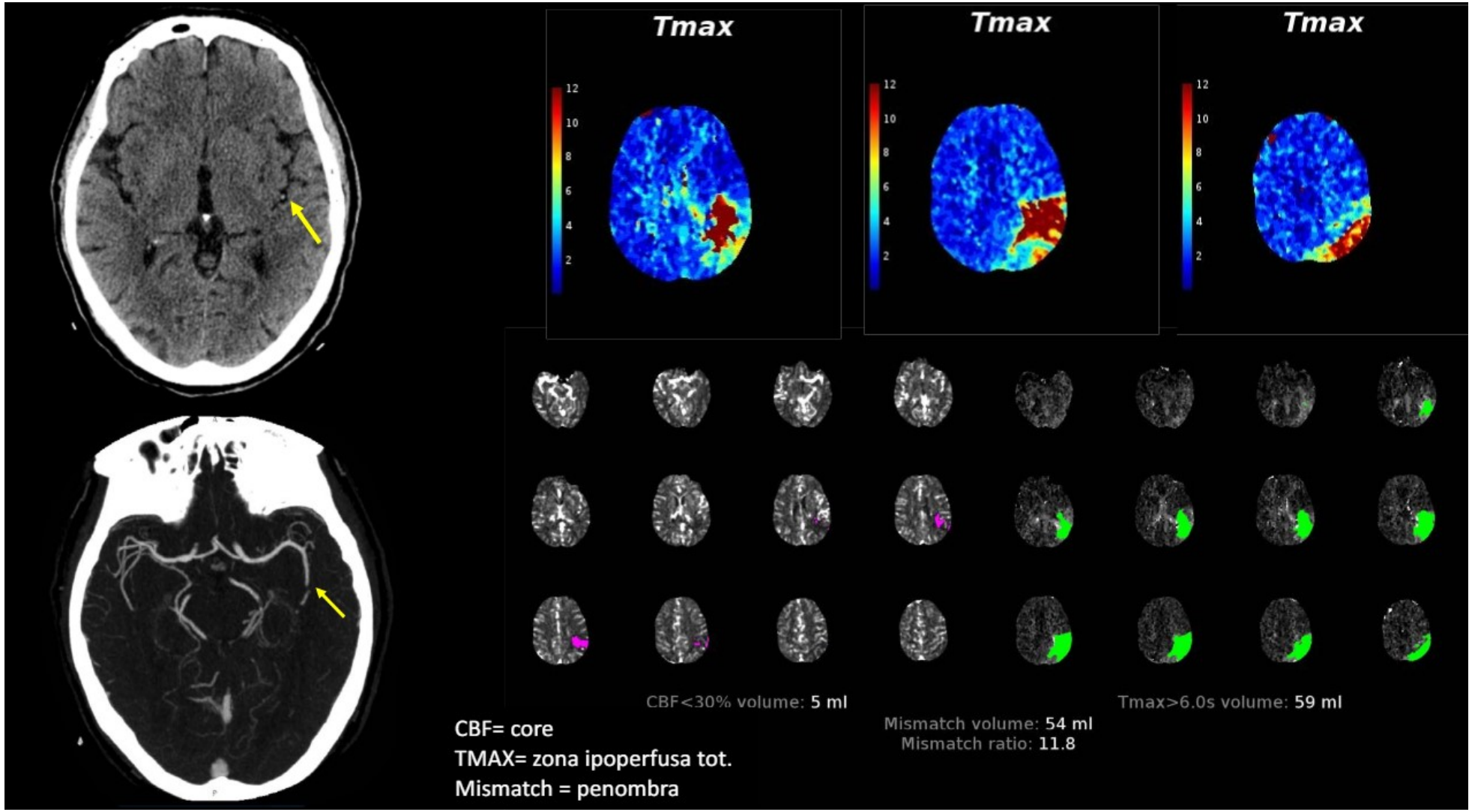
Identificazione della penombra ischemica.







Ruolo dell'imaging avanzato (3):

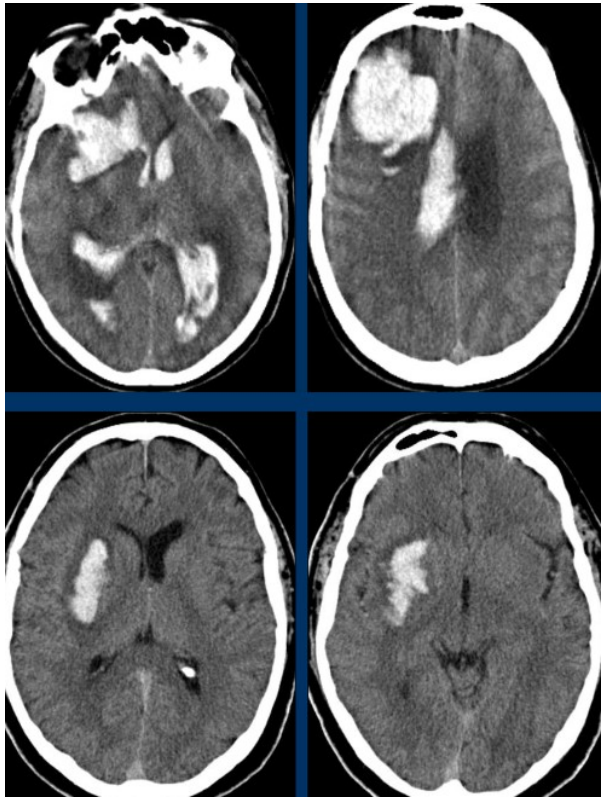


Controindicazioni

Assolute:

Emorragia intracranica attiva

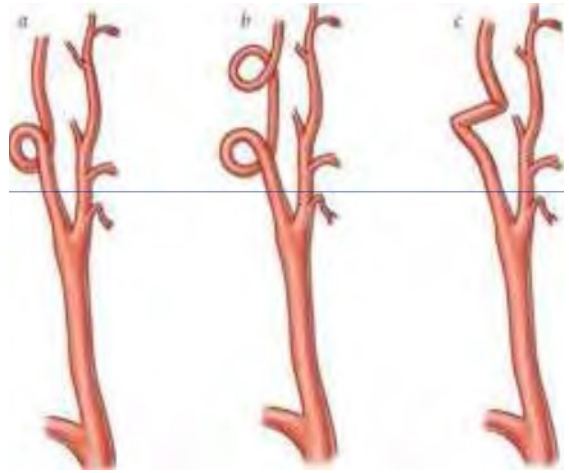
Impossibilità tecnica.



Relative:

Comorbidità gravi

Età avanzata.



Sintesi: Efficacia della trombectomia meccanica, importanza della selezione dei pazienti.

Trial clinici randomizzati e controllati hanno stabilito con evidenza 1 A l'efficacia del trattamento ev dello stroke ischemico acuto sia in finestra < 6 h che con finestra di 6- 24 h (selezione con neuroimaging avanzato).

Pazienti con stroke ischemico acuto devono essere trasportati in STROKE UNIT e Centri di riferimento per essere sottoposti a terapie riperfusive.

Centralità dello Stroke Team (Urgentista, Neurologo e Neuroradiologo Interventista) ed implementazione della rete Stroke sul territorio.

Riduzione della spesa pubblica per riduzione disabilità dei pazienti colpiti

Prospettive future: Ricerca in corso, miglioramento delle tecniche.

Direzioni attuali: trattamento occlusioni di medio vaso e distali anche con basso NIHSS

Direzioni future: trasporto diretto in sala Angiografica e studi su nuovi farmaci neuroprotettivi

Estensione delle tecniche e adattamento delle indicazioni al contesto pediatrico e neonatale.