VII CONGRESSO NAZIONALE ANEU

CONTROVERSIE IN NEUROLOGIA D'EMERGENZA E URGENZA

SESSIONE VII
CONTROVERSIE IN STROKE

Stroke da occlusione vaso maggiore come trattare? TPA+ trombectomia

Dott. Andrea Zini, MD, FESO
Direttore UOC Neurologia e Rete Stroke metropolitana
Ospedale Maggiore
IRCCS Istituto delle Scienze Neurologiche di Bologna
AUSL Bologna

Sin SOCIETÀ ITALIANA DI NEUROLOGIA
SERVIZIO SANITARIO REGIONALE EMILIA-ROMAGNA
Azienda Unità Sanitaria Locale di Bologna
OSPEDALE MAGGIORE
Istituto delle Scienze Neurologiche
Istituto di Ricovero e Cura a Carattere Scientifico
Associazione Neurologia Emergenza Urgenza

Conflitti di interesse

- BOEHRINGER INGELHEIM
- CLS-BEHRING
- ANGELS
- ALEXION – ASTRA ZENECA
- BAYER

TERAPIE DI RIPERFUSIONE

E’ una lotta al bersaglio…
…non al tipo di freccia

Farmaci

Devices

Presente?
Futuro?

Presente

Linee guida ISA-SPREAD

Chairmen: Danilo Toni - Salvatore Mangiafico - Nicoletta Reale

ISO-SPREAD:
- Elio Agostoni
- Valeria Caso
- Manuel Cappellari
- Paolo Cerrato
- Alfonso Ciccone
- Andrea Zini

AINR:
- Francesco Causin
- Enrico Fainardi
- Antonio Pitrone
- Stefano Vallone

ALICe
- Fabrizio Pennacchi
- Franco Groppali

- Metodologo: Stefano Ricci
- Revisori: Antonio Carolei, Carlo Gandolfo, Gaetano Lanza, Maurizio Melis, Leonardo Pantoni, Alessandro Pezzini, Paola Santalucia, Roberto Sterzi

Società Scientifiche

SIN: Gioacchino Tedeschi

SNO: Maurizio Melis

SICVE: Gaetano Lanza

AINR: Mario Muto

SIRM: Stefano Bastianello

SINSEC: Giuditta Giussani

FADOI: Dario Manfellotto

ISA-AII
Italian Stroke Association - Associazione Italiana Ictus

PICO: in pazienti adulti con ictus ischemico acuto da occlusione di grossa arteria candidabili sia a trombolisi e.v. che a trattamento endovascolare, il solo trattamento endovascolare rispetto al trattamento combinato (trombolisi e.v. e trattamento endovascolare), migliora l'esito clinico?

TROMBECTOMIA DIRETTA o PRIMARIA

vs

TRATTAMENTO COMBINATO

PICO: in pazienti adulti con ictus ischemico acuto da occlusione di grossa arteria candidabili sia a trombolisi e.v. che a trattamento endovascolare, il solo trattamento endovascolare rispetto al trattamento combinato (trombolisi e.v. e trattamento endovascolare), migliora l'esito clinico?

Raccomandazione 9.30a

In pazienti adulti con ictus ischemico acuto da occlusione di grossa arteria candidabili sia a trombolisi e.v. che a trattamento endovascolare **in centri di secondo livello**, il solo trattamento endovascolare **non è raccomandato** in alternativa al trattamento combinato con la trombolisi e.v.

Forza raccomandazione: Forte contro ↓↓

Qualità Evidenza: elevata ⊕⊕⊕⊕

Sintesi 9.35

Non sono invece al momento **disponibili dati da RCT** sul confronto **TM diretta versus trattamento combinato** per pazienti con ictus ischemico acuto da occlusione di grossa arteria intracranica in un setting organizzativo di "**drip and ship**".

PICO: in pazienti adulti con ictus ischemico acuto da occlusione di grossa arteria candidabili sia a trombolisi e.v. che a trattamento endovascolare, il solo trattamento endovascolare rispetto al trattamento combinato (trombolisi e.v. e trattamento endovascolare), migliora l'esito clinico?

Raccomandazione 9.30b

Date le evidenze raccolte sull'argomento in caso di centralizzazione primaria (modello mothership) presso centri in grado di fornire sia il trattamento trombolitico che il trattamento endovascolare il gruppo di lavoro **suggerisce** a maggior ragione in setting organizzativi diversi con centralizzazione secondaria (**drip&ship**) che il trattamento combinato, quando indicato, rimanga il trattamento standard.

Forza raccomandazione: GPP

Qualità Evidenza: -

Raccomandazione 9.31

In particolari **sottogruppi** di pazienti in cui sono possibili clinicamente e logisticamente entrambi gli approcci, è **raccomandato proseguire gli studi di confronto** tra trombectomia primaria e associazione della trombectomia con la trombolisi e.v. (es. **occlusioni tandem, occlusioni a T, occlusioni di basilare, imaging con ampio core, quadri ad elevato rischio emorragico**, ecc)

Raccomandazione per la ricerca

EVIDENZE

6 RCTs:

- DIRECT-MT
- DEVT
- SKIP
- MRCLEAN-NO IV
- SWIFT DIRECT
- DIRECT SAFE


The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Endovascular Thrombectomy with or without Intravenous Alteplase in Acute Stroke

P. Yang, Yongwei Zhang, L. Zhang, Yongxin Zhang, K.M. Treurniet, W. Chen, Y. Peng, H. Han, J. Wang, S. Wang, C. Yin, S. Liu, P. Wang, Q. Fang, Hongchao Shi, J. Yang, C. Wen, C. Li, C. Jiang, J. Sun, X. Yue, M. Lou, M. Zhang, H. Shu, D. Sun, H. Liang, Tong Li, F. Guo, K. Ke, H. Yuan, G. Wang, W. Yang, Huaizhang Shi, Tianxiao Li, Z. Li, P. Xing, P. Zhang, Y. Zhou, H. Wang, Y. Xu, Q. Huang, T. Wu, R. Zhao, Q. Li, Y. Fang, Laixing Wang, J. Lu, Y. Li, J. Fu, X. Zhong, Y. Wang, Longde Wang, M. Goyal, D.W.J. Dippel, B. Hong, B. Deng, Y.B.W.E.M. Roos, C.B.L.M. Majoie, and J. Liu, for the DIRECT-MT Investigators*


JAMA | Original Investigation

Effect of Endovascular Treatment Alone vs Intravenous Alteplase Plus Endovascular Treatment on Functional Independence in Patients With Acute Ischemic Stroke
The DEVT Randomized Clinical Trial

Wenjie Zi, MD; Zhongming Qiu, MD; Fengli Li, MD; Hongfei Sang, MD; Deping Wu, MD; Weidong Luo, MD; Shuai Liu, MD; Junjie Yuan, MD; Jiaxing Song, MD; Zhonghua Shi, MD; Wenguo Huang, MD; Min Zhang, MS; Wenhua Liu, MD; Zhangbao Guo, MS; Tao Qiu, MD; Qiang Shi, MS; Peiyang Zhou, MD; Li Wang, MD; Xinmin Fu, MD; Shudong Liu, MD; Shiquan Yang, MD; Shuai Zhang, MD; Zhiming Zhou, MD; Xianjun Huang, MD; Yan Wang, MD; Jun Luo, MS; Yongjie Bai, MD; Min Zhang, MS; Youlin Wu, MS; Guoyong Zeng, MD; Yue Wan, MD; Changming Wen, MD; Hongbin Wen, MD; Wentong Ling, MS; Zhuo Chen, MS; Miao Peng, MS; Zhibing Ai, MD; Fuqiang Guo, MD; Huagang Li, MD; Jing Guo, MS; Haitao Guan, MD; Zhiyi Wang, MS; Yong Liu, MS; Jie Pu, MD; Zhen Wang, MD; Hansheng Liu, MD; Luming Chen, MD; Jiacheng Huang, MD; Guoqiang Yang, MD; Zili Gong, MD; Jie Shuai, MD; Raul G. Nogueira, MD; Qingwu Yang, MD, PhD; for the DEVT Trial Investigators


JAMA | Original Investigation

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; Yuji Matsumaru, MD, PhD; Masataka Takeuchi, MD; Masafumi Morimoto, MD, PhD; Ryuzaburo Kanazawa, MD, PhD; D; Keigo Shigeta, MD, PhD; Seiji Okubo, MD, PhD; Mikito Hayakawa, MD; Norihiro Ishii, MD, PhD; MD, PhD; Masato Inoue, MD, PhD; Hiromichi Naito, MD; Takahiro Ota, MD, PhD; Teruyuki Hirano, MD, PhD; ID, PhD; Yasuyuki Iguchi, MD, PhD; Kazunori Akaji, MD, PhD; Wataro Tsuruta, MD, PhD; Kazunori Miki, MD, PhD; ishida, MD, PhD; Mitsuhiro Iwasaki, MD; Junya Aoki, MD, PhD; Yasuhiro Nishiyama, MD, PhD; , MD, PhD; for the SKIP Study Investigators


Thrombectomy alone versus intravenous alteplase plus thrombectomy in patients with stroke: an open-label, blinded-outcome, randomised non-inferiority trial

Urs Fischer, Johannes Kaesmacher*, Daniel Strbian, Omer Eker, Christoph Cognard, Patricia S Plattner, Lukas Bütikofer, Pasquale Mordasini, Sandro Deppeler, Vitor M Pereira, Jean François Albucher, Jean Darcourt, Romain Bourcier, Guillon Benoit, Chrysanthi Papagiannaki, Ozlem Ozkul-Wermester, Gerli Sibolt, Marjaana Tiainen, Benjamin Gory, Sébastien Richard, Jan Liman, Marielle Sophie Ernst, Marion Boulanger, Charlotte Barbier, Laura Mechtouff, Liqun Zhang, Gaultier Marnat, Igor Sibon, Omid Nikoubashman, Arno Reich, Arturo Consoli, Bertrand Lapergue, Marc Ribo, Alejandro Tomasello, Suzana Salerno, Francisco Macian, Solène Moulin, Paolo Pagano, Guillaume Saliou, Emmanuel Carrera, Kevin Janot, Maria Hernández-Pérez, Raoul Pop, Lucie Della Schiava, Andreas R Luft, Michel Piotin, Jean Christophe Gentric, Aleksandra Pikula, Waltraud Pfeilschifter, Marcel Arnold, Adnan H Siddiqui, Michael T Froehler, Anthony J Furlan, René Chapot, Martin Wiesmann, Paolo Machi, Hans-Christoph Diener, Zsolt Kulcsar, Leo H Bonati, Claudio L Bassetti, Mikael Mazighi, David S Liebeskind, Jeffrey L Saver, Jan Gralla, on behalf of the SWIFT DIRECT Collaborators†*


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. Botin, 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. Schoneville, 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. Krieteneijer, 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*

DIRECT-SAFE

13TH WORLD STROKE CONGRESS

28-29 OCTOBER 2021 VIRTUAL

Linee guida ESO-ESMINT

Guideline

EUROPEAN STROKE JOURNAL

European Stroke Journal
2022, Vol. 7(1) I–XXVI

DOI: 10.1177/23969873221076968
journals.sagepub.com/home/eso
SAGE

European Stroke Organisation – European Society for Minimally Invasive Neurological Therapy expedited recommendation on indication for intravenous thrombolysis before mechanical thrombectomy in patients with acute ischaemic stroke and anterior circulation large vessel occlusion

Guillaume Turc[1], Georgios Tsivgoulis[2,3], Heinrich J. Audebert[4], Hieronymus Boogaarts[5], Pervinder Bhogal[6], Gian Marco De Marchis[7], Ana Catarina Fonseca[8], Pooja Khatri[9], Mikaël Mazighi[10,11], Natalia Pérez d
Peter D. Schellinger[13], Daniel Strbian[14], Danilo Toni[15], Philip White[16], William Whiteley[17], Andrea Zini[18], Wim van Zwam[19], and Jens Fiehler[20]

Evidence-based recommendation

For patients directly admitted to a thrombectomy-capable centre for an acute ischaemic stroke (≤4.5 hrs of symptom onset) with anterior circulation large vessel occlusion and who are eligible for both treatments, we recommend intravenous thrombolysis plus mechanical thrombectomy over mechanical thrombectomy alone.

Both treatments should be performed as early as possible after hospital arrival. Mechanical thrombectomy should not prevent the initiation of intravenous thrombolysis, and intravenous thrombolysis should not delay mechanical thrombectomy.

Quality of evidence: **Moderate** ⊕⊕⊕
Strength of recommendation: **Strong** ↑↑

Standards

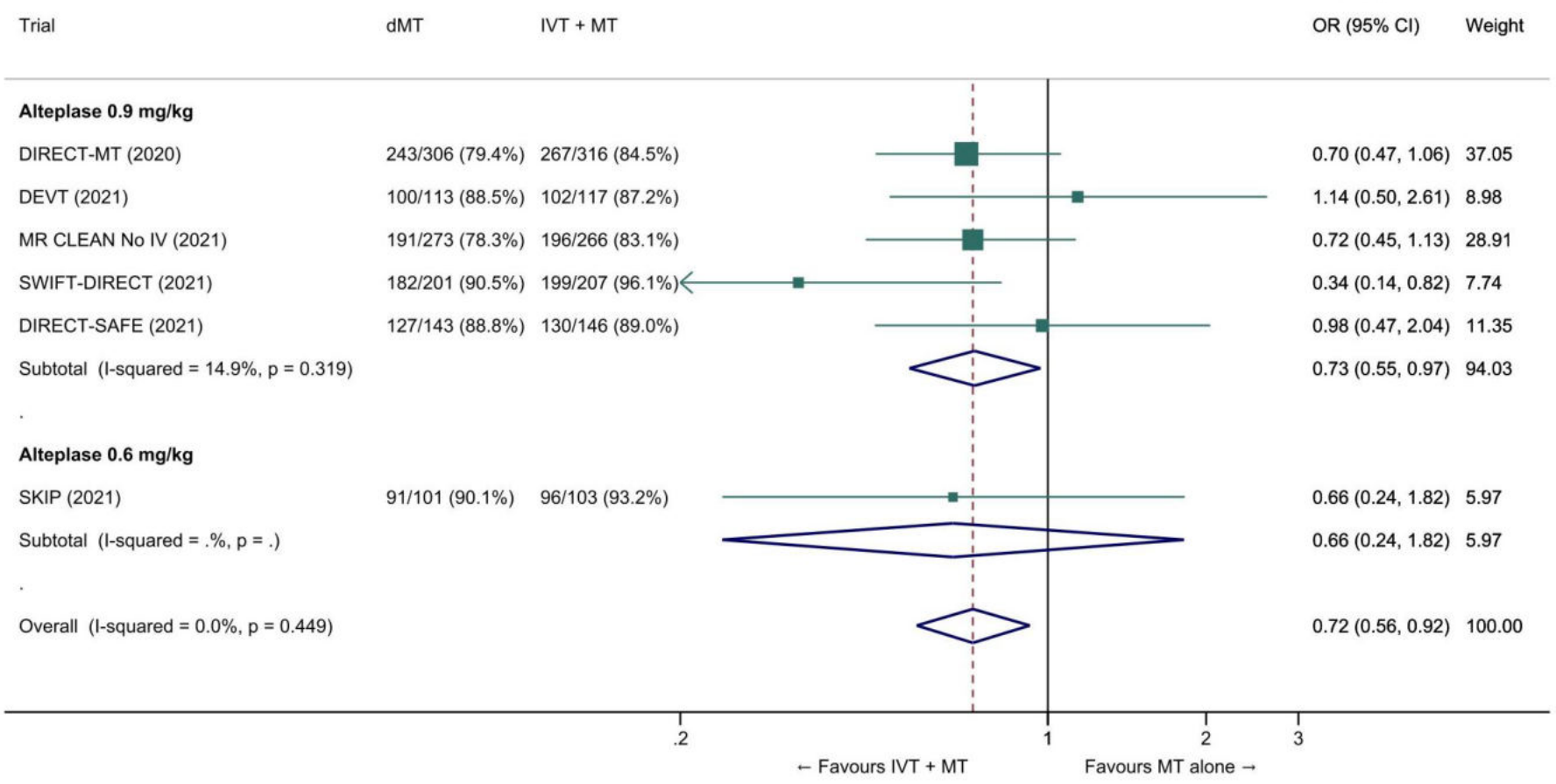
European Stroke Organisation (ESO)–European Society for Minimally Invasive Neurological Therapy (ESMINT) expedited recommendation on indication for intravenous thrombolysis before mechanical thrombectomy in patients with acute ischemic stroke and anterior circulation large vessel occlusion

Guillaume Turc [1], Georgios Tsivgoulis [2,3], Heinrich J Audebert,[4] Hieronymus Boogaarts [5], Pervinder Bhogal [6], Gian Marco De Marchis [7], Ana Catarina Fonseca [8], Pooja Khatri [9], Mikaël Mazighi [10,11], Natalia Pérez de la Ossa,[12] Peter D Schellinger,[13] Daniel Strbian,[14] Danilo Toni,[15] Philip White [16], William Whiteley [17], Andrea Zini [18], Wim van Zwam [19], Jens Fiehler [20]

Trial	DIRECT-MT	DEVT	SKIP	MR CLEAN-NO IV	SWIFT-DIRECT	DIRECT-SAFE
Design	Non-inferiority RCT (PROBE)	Non-inferiority RCT (PROBE)	Non-inferiority RCT (PROBE)	Superiority RCT (PROBE)	Non-inferiority RCT (PROBE)	Non-inferiority RCT (PROBE)
Primary endpoint	mRS (cOR)	mRS 0-2	mRS 0-2	mRS (cOR)	mRS 0-2	mRS 0-2
Pre-specified non-inferiority margin	Relative: lower boundary of the CI of the cOR ≥ 0.80	Absolute: 10%	Relative: lower boundary of the CI of the OR ≥ 0.74	Relative: lower boundary of the CI of the cOR ≥ 0.80	Absolute: 12%	Absolute: 10%
Main inclusion criteria	• ICA, MI or M2 • Eligible for IVT within 4.5 h	• ICA or MI • Eligible for IVT within 4.5 h	• ICA or MI • Eligible for IVT within 4.5 h	• ICA-T, MI or M2 • Eligible for IVT within 4.5 h	• ICA or MI • Eligible for IVT within 4.5 h	• ICA, MI, M2 or basilar • Eligible for IVT within 4.5 h
Thrombolytic agent	Alteplase 0.9 mg/kg **(non rimborsato)**	Alteplase 0.9 mg/kg **(non rimborsato)**	Alteplase 0.6 mg/kg	Alteplase 0.9 mg/kg	Alteplase 0.9 mg/kg	Alteplase 0.9 mg/kg
N. of patients	656	234 (stoppato rispetto ai 970 previsti)	204	539	408	293 (stoppato rispetto ai 780 previsti)
mRS 0-2 at 90 days	36.5% vs. 36.9% aOR 0.97 (0.68 - 1.37)	54.3% vs. 46.6% aOR 1.48 (0.81 - 2.74)	59.4% vs. 57.3% OR 1.09 (0.63 - 1.90*)	49.1% vs. **51.1%** aOR 0.95 (0.65 - 1.40)	56.7% vs. **65.2%** OR 0.70 (0.47-1.04)	54.8% vs. **60.5%** OR 0.75 (0.45-1.24)
mTICI ≥2b (end of the procedure)	79.4% vs. 84.5% OR 0.70 (0.47 - 1.06)	88.5% vs. 87.2% OR 1.14 (0.50 - 2.61)	90.1% vs. 93.2% OR 0.66 (0.24 - 1.82)	78.7% vs. 83.1% aOR 0.73 (0.47 - 1.13)	90.5% vs. 96.6%	88.8% vs. 89.0% aOR 0.84 (0.39-1.82)
Conclusioni	**dimostrata non inferiorità** (acOR 1.07; IC95% 0.81 - 1.40; **p=0.04**)	**dimostrata non inferiorità** (diff. 7.7%, IC97.5% unilaterale −5.1% to ∞, **p = 0.003**)	**non dimostrata non inferiorità** (diff. 2.1%, IC97.5% unilaterale -11.4% - ∞; OR 1.09, IC97.5% unilaterale 0.63 - ∞, p=0.18)	**non dimostrata né superiorità né non inferiorità** (cOR aggiustato 0.84, IC95% 0.62-1.15, p=0.28)	**non dimostrata non inferiorità** (diff. assoluta aggiustata -7.3%, IC95% limite inferiore unilaterale −15.1%)	**non dimostrata non inferiorità** (risk difference -5.1%, IC95% -16.0 - 5.9, p=0.19)

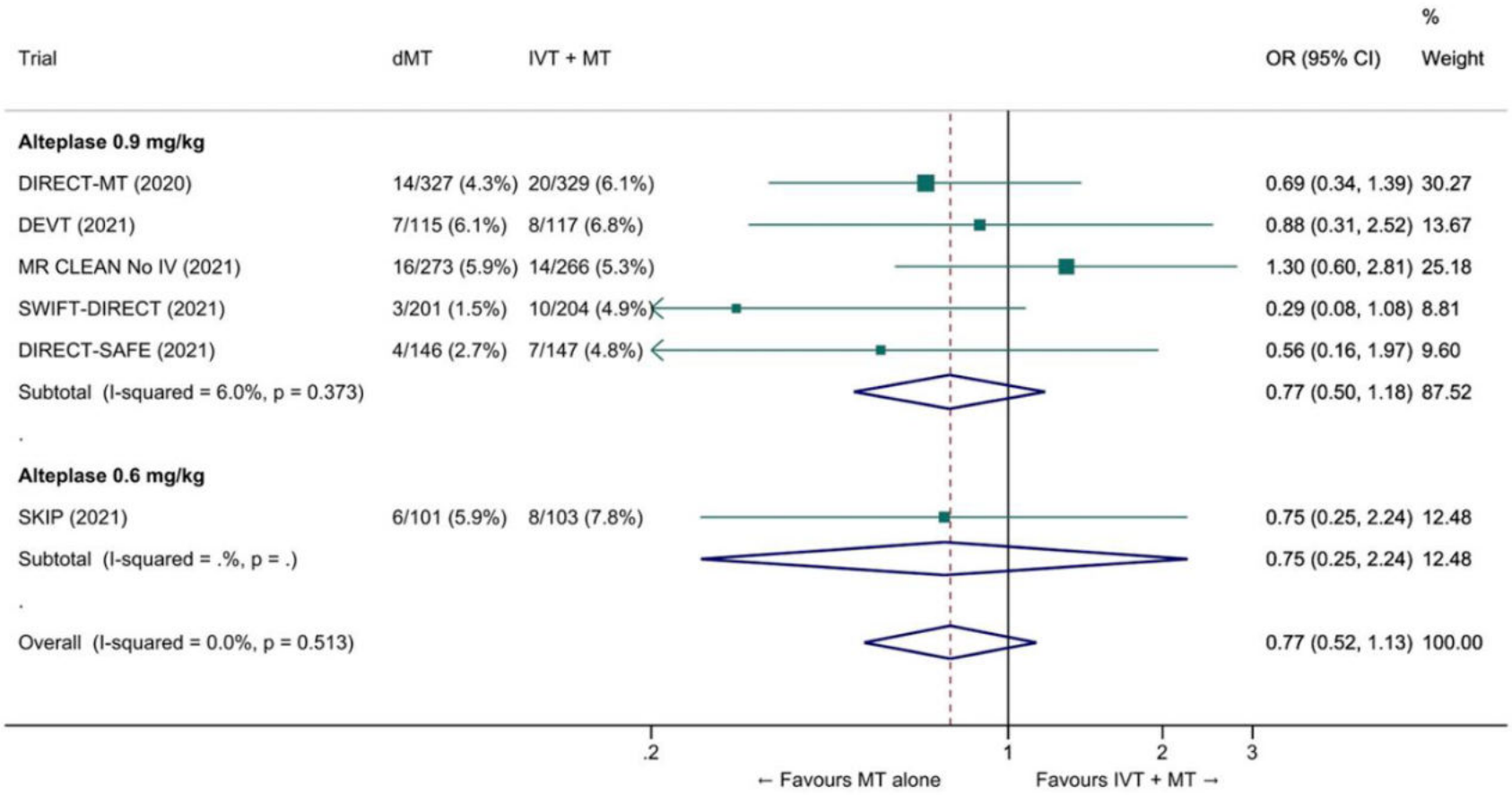
METANALISI 6 RCT

mRS 0-2b



METANALISI 6 RCT

sICH



Ridurre il rischio emorragico

- La soluzione è «saltare» la trombolisi?

NO

Neurological Sciences
https://doi.org/10.1007/s10072-021-05441-6

ORIGINAL ARTICLE

Fibrinogen depletion and intracerebral hemorrhage after thrombolysis for ischemic stroke: a meta-analysis

Michele Romoli[1,2,3] · David Giannandrea[4] · Andrea Zini[1]

Received: 28 February 2021 / Accepted: 24 June 2021

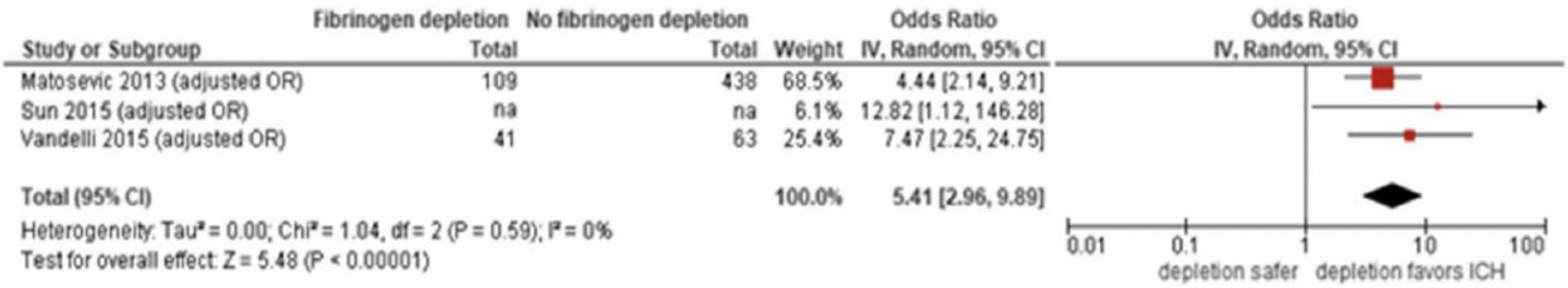


Fig. 3 Prevalence of intracerebral hemorrhage depending on fibrinogen depletion from adjusted odds ratio. Legend. ICH, intracerebral hemorrhage

Stroke

- **Trombectomia** in 409/1687 (24.3%)

ORIGINAL ARTICLE

Fibrinogen Depletion Coagulopathy Predicts Major Bleeding After Thrombolysis for Ischemic Stroke: A Multicenter Study

Michele Romoli, MD, PhD*; Laura Vandelli, MD*; Guido Bigliardi, MD; Marcello Naccarato, MD, PhD; Jessica Moller, MD; Maurizio Balestrino, MD; Fabrizio Giammello, MD; Mauro Gentile, MD; Maria Luisa Dell'Acqua, MD; Paolo Manganotti, MD; Stefano Forlivesi, MD; Maurizio Melis, MD; Livio Picchetto, MD, PhD; Francesca Rosafio, MD; Giovanni Furlanis, MD; Stefania Testoni, MD; Valeria Piras, MD; Laura Malfatto, MD, PhD; gliaccio, MSc; Tommaso Trenti, MD; Rita M lrea Zini, MD

Table 2. Bleeding Outcomes Depending on Fibrinogen Depletion Group

	No depletion (n=1137)	Fibrinogen depletion* (n=528)	*P* Value
sICH NINDS	63 (5.5%)	51 (9.7%)	0.002
Major bleeding	177 (15.6%)	116 (22.0%)	0.001
Additional outcomes			
sICH (ECASS)	46 (4%)	41 (7.8%)	0.002
Fatal ICH	21 (1.8%)	16 (3%)	0.12
Any ICH	183 (16.1%)	112 (21.3%)	0.01
Any bleeding complication	219 (19.3%)	137 (25.9%)	0.002

Fibrinogen depletion coagulopathy predicts major bleeding after thrombolysis for ischemic stroke: a multicentre study

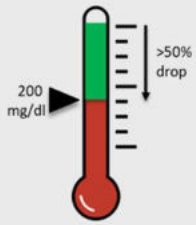
POPULATION

1678 people receiving intravenous thrombolysis (IVT) for acute ischemic stroke
- Mean age 72 years, 46% female
- Median NIHSS 8 points

SETTING

Multicenter study (6 Comprehensive Stroke Centers in Italy)

FIBRINOGEN DEPLETION



Relative reduction of fibrinogen below 50% of pre-IVT levels, or absolute concentration <200 mg/dl after 2 hours from thrombolysis

528 with fibrinogen depletion
1150 with no fibrinogen depletion

OUTCOMES

Symptomatic ICH (sICH) according to NINDS criteria
Major bleeding (fatal, or >2g/dl decrease in hemoglobin, or >1 unit transfusion, or bleeding at critical site)

FINDINGS

of people developing sICH had fibrinogen depletion
vs 31% in those without fibrinogen depletion
(+14% absolute increase)

of people with Major Bleeding had fibrinogen depletion
vs 30% in those without fibrinogen depletion
(+10% absolute increase)

Adjusted odds of sICH with fibrinogen depletion = 1.55 (95%CI 1.04-2.32)
Attributable fraction of sICH due to fibrinogen depletion = 40%

CONCLUSION

Fibrinogen depletion represents an independent predictor of sICH and major bleeding after IVT for acute ischemic stroke.

Stroke *Romoli et al., 2022*

Dove lancio le mie frecce?

- ✓ Nello stesso posto?
- ✓ Sincrone?
- ✓ Differite?

- ✓ Quale modello organizzativo?

MOTHERSHIP

Le nuove linee guida ISO-SPREAD/AINR sui trattamenti di rivascolarizzazione

Sintesi:

ISA-AII
Italian Stroke Association - Associazione Italiana Ictus

In assenza di evidenze a favore del modello mother-ship o del modello drip&ship, il modello adottato deve dipendere dall'organizzazione locale e dalle caratteristiche del paziente.
Il **modello mother-ship** può essere **da preferire** quando il tempo di **trasporto al centro** dotato di interventistica endovascolare sia **al di sotto dei 30-45 minuti**, nonostante vi sia un centro ictus primario, ove può essere effettuata la trombolisi e.v., più vicino; il modello drip-and-ship potrebbe essere da preferire quando i tempi per raggiungere il centro ictus secondario siano superiori ai 45 minuti, purché il tempo door-to-needle del centro ictus primario non sia superiore ai 60 minuti.

Notizie diverse dal Real World?

Original Research Article

INR INTERVENTIONAL NEURORADIOLOGY

Interventional Neuroradiology
1–10

DOI: 10.1177/15910199221086429
journals.sagepub.com/home/ine
SAGE

Benefit from successful recanalization in an Italian cohort of stroke patients receiving endovascular treatments according to the DIRECT-MT trial criteria

Manuel Cappellari[1], Valentina Saia[2], Giovanni Pracucci[3], Fabrizio Sallustio[4], Andrea Zini[5], Mauro Bergui[6], Cecilia Zivelonghi[1], Salvatore Mangiafico[7] and Danilo Toni[8]

Results: Differences were found between DIRECT-MT and IRETAS cohorts for 3-month mRS score 0 to 1 (23.5% vs. 33.1%) and 0 to 2 (36.7% vs. 47.1%), successful (82% vs. 76.7%) and complete recanalization (32.3% vs. 58.8%). Among unfavorable predictors for 3-month mRS shift, diabetes mellitus (18.9% vs. 13.9%) and asymptomatic intracerebral hemorhage (ICH) (34.8% vs. 25.5%) were more frequent in the DIRECT-MT, whereas age ≥80 years (23.7% vs. 15.3%) and pre-stroke mRS score >0 (16.1% vs. 7.8%) were more frequent in the IRETAS.

The direction of effect on the 3-month mRS shift (6 to 0) favored successful recanalization across all strata. Greatest benefit from successful recanalization was observed in patients with most severe strokes (NIHSS ≥20, OR:4.002; 16–19, OR:3.292; 2–5, OR:2.470) and most proximal occlusion site (intra-cranial ICA, OR:4.092; M1-MCA, OR:3.705; M2-MCA, OR:2.001), in younger patients (18–59 years, OR:3.677; 60–79, OR:3.267; ≥80, OR:1.993), and in patients who started the treatment earlier (onset-to-groin time ≤205 min, OR:4.361; onset-to-groin time >205, OR:2.326).

Futuro

The NEW ENGLAND JOURNAL of MEDICINE

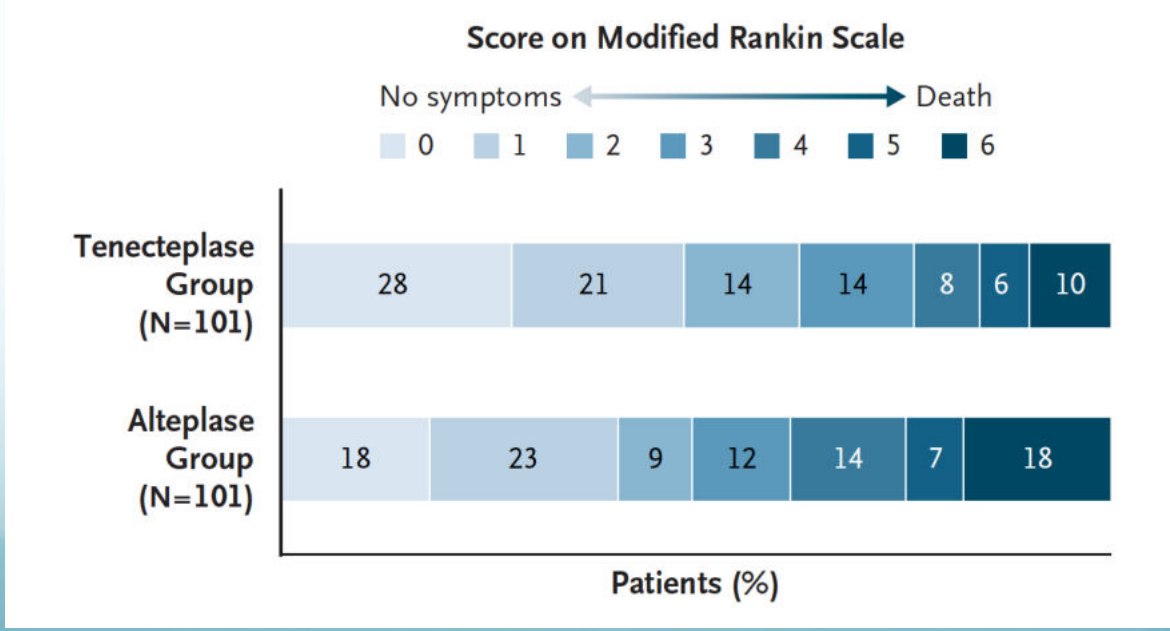
ESTABLISHED IN 1812 APRIL 26, 2018 VOL. 378 NO. 17

Tenecteplase versus Alteplase before Thrombectomy for Ischemic Stroke

NUOVI TROMBOLITICI

- ✓ Migliori ricanalizzazioni
- ✓ Migliori outcome

EXTEND-IA TNK



Modello Direct to Angio

Guideline

EUROPEAN STROKE JOURNAL

European Stroke Journal
2022, Vol. 7(1) XXVII–LIX

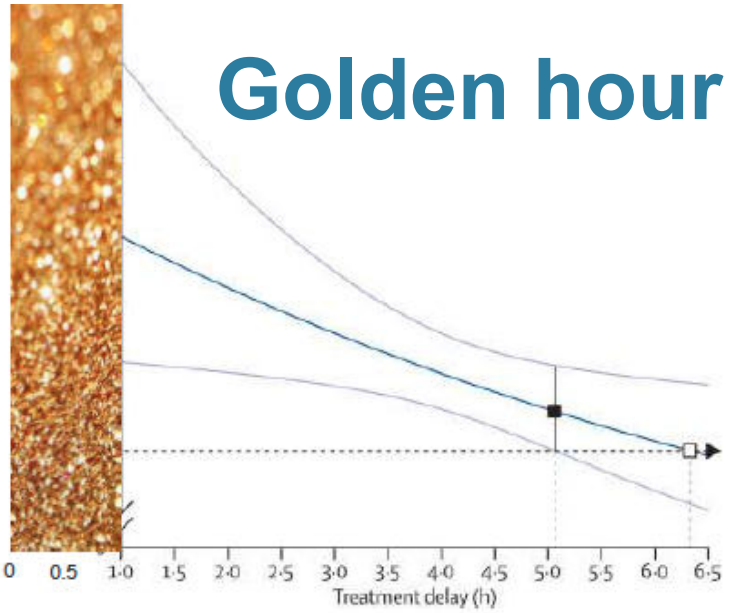
DOI: 10.1177/23969873221079413
journals.sagepub.com/home/eso
SAGE

European Stroke Organisation (ESO) guidelines on mobile stroke units for prehospital stroke management

Silke Walter[1], Heinrich J Audebert[2,3], Aristeidis H Katsanos[4,5], Karianne Larsen[6,7], Simona Sacco[8], Thorsten Steiner[9,10], Guillaume Turc[11,12,13,14] and Georgios Tsivgoulis[5,15]

Figure 2. Distribution of Scores on the Modified Rankin Scale at 90 Days in Patients Eligible for t-PA.

Golden hour



Evitiamo montagne russe organizzative

«LA CURA DELL'ICTUS E' UN GIOCO DI SQUADRA»

Grazie per l'attenzione