ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

Stroke interventions. Why cardiologists should be involved?. Collaboration with neurologists.

Ivo Petrov, MD, PhD, FESC, FACC
Head Cardiology/angiology Dpt
Acibademm City Clinic, Sofia, Bulgaria

petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST 2019

WIST

DISCLOSURE STATEMENT OF FINANCIAL INTEREST

I, Ivo Petrov, DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as
a real or apparent conflict of interest in the context of the subject of this presentation.

petrovivo@hotmail.com

City Clinic Cardiovascular center Grand Opening. 12.12.2012

petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

Endovascular experience after 6 years of work:

ICCA STROKE 2019

WIST

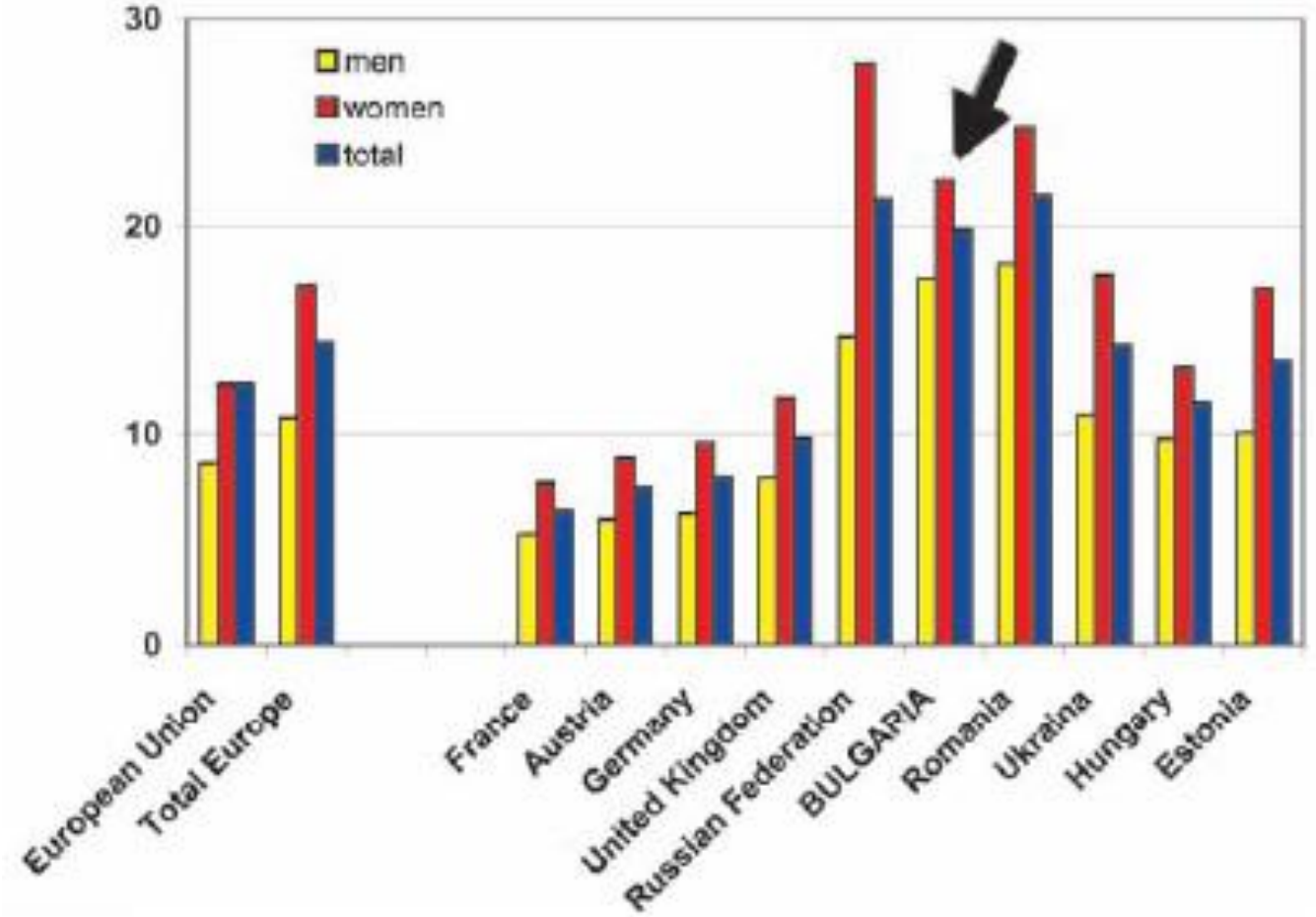
- 10820 endovascular cases (“Head to toe”) in the cathlab and the hybrid OR including:
  - CTO and Left main Coronary interventions
  - EVAR/TEVAR
  - TAVR
  - Intracranial thrombus retrieval in stroke
  - CAS and intracranial EVI (>800)
  - Radial approach for complex peripheral cases
  - Complex venous interventions (including May-Thurner, CCSVI)
  - Renal denervation

petrovivo@hotmail.com

Bulgaria.Causes of death 2013

petrovivo@hotmail.com

Proportion: Stroke mortality to general mortality in Bulgaria 2013



Фиг. 1. Смъртност от инсулти като процент от общата смъртност в Европа, Европейския съюз и някои от европейските страни.

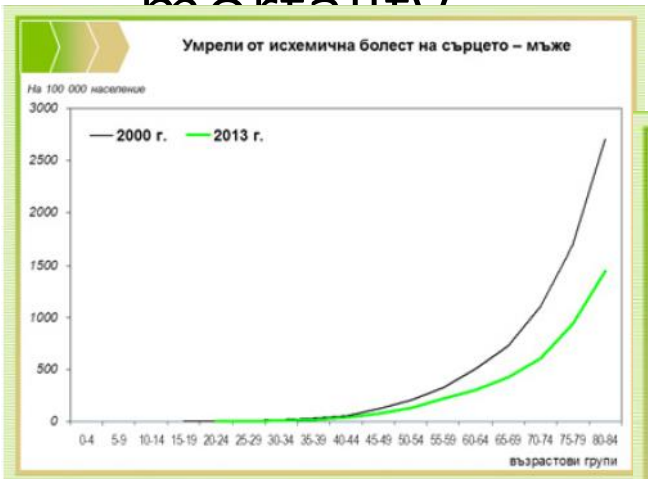
petrovivo@hotmail.com

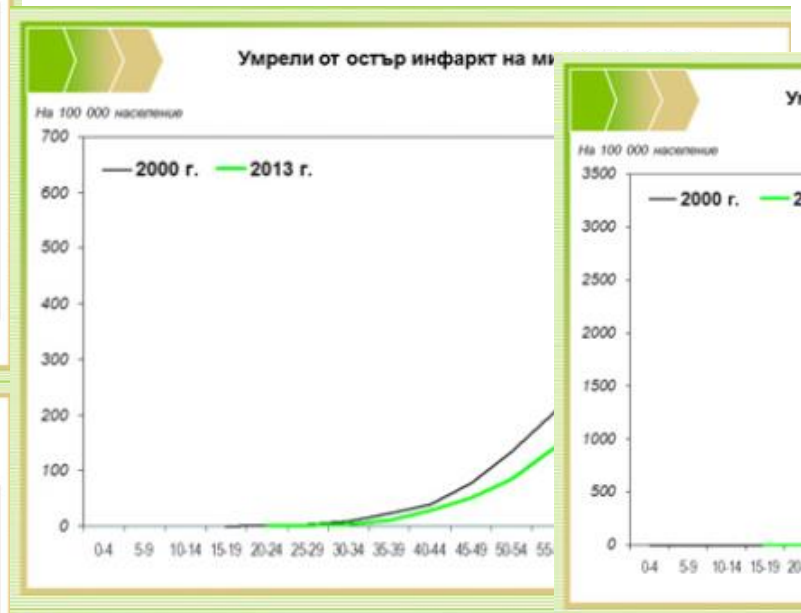
ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

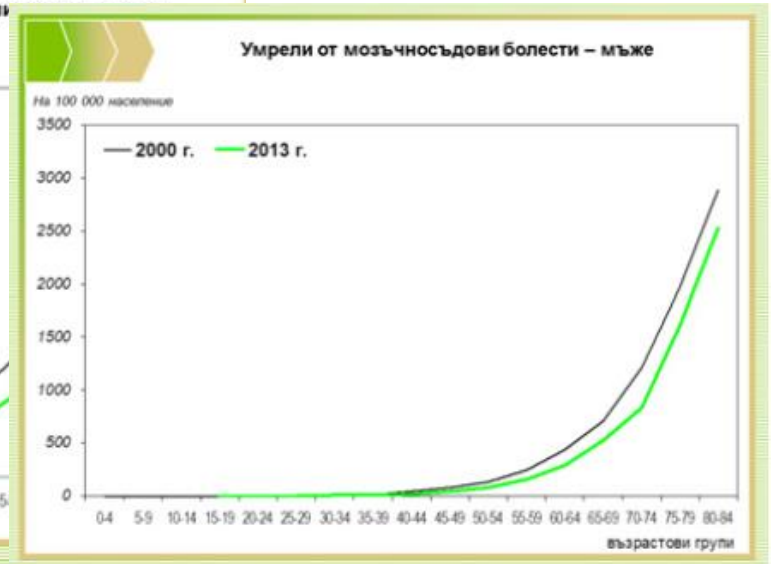
CHD in Bulgaria. Mortality trend vs Stroke mortality

ICCA STROKE 2019

WIST





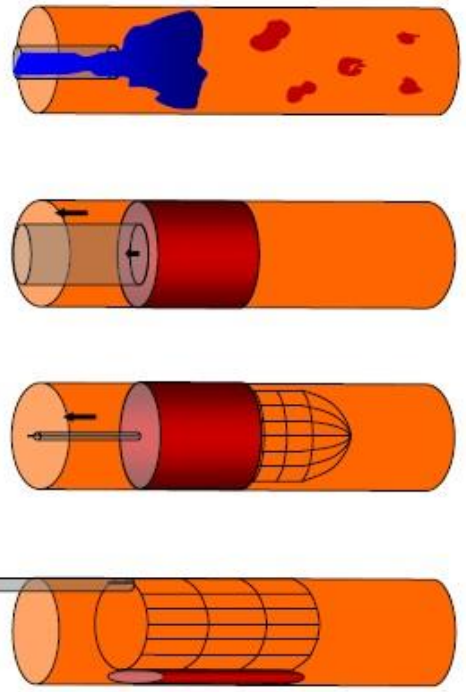


НАЦИОНАЛЕН ЦЕНТЪР ПО ОБЩЕСТВЕНО ЗДРАВЕ И АНАЛИЗИ - Смъртност по основни причини в Република България, бюлетин 14

petrovivo@hotmail.com

Mechanical thrombectomy

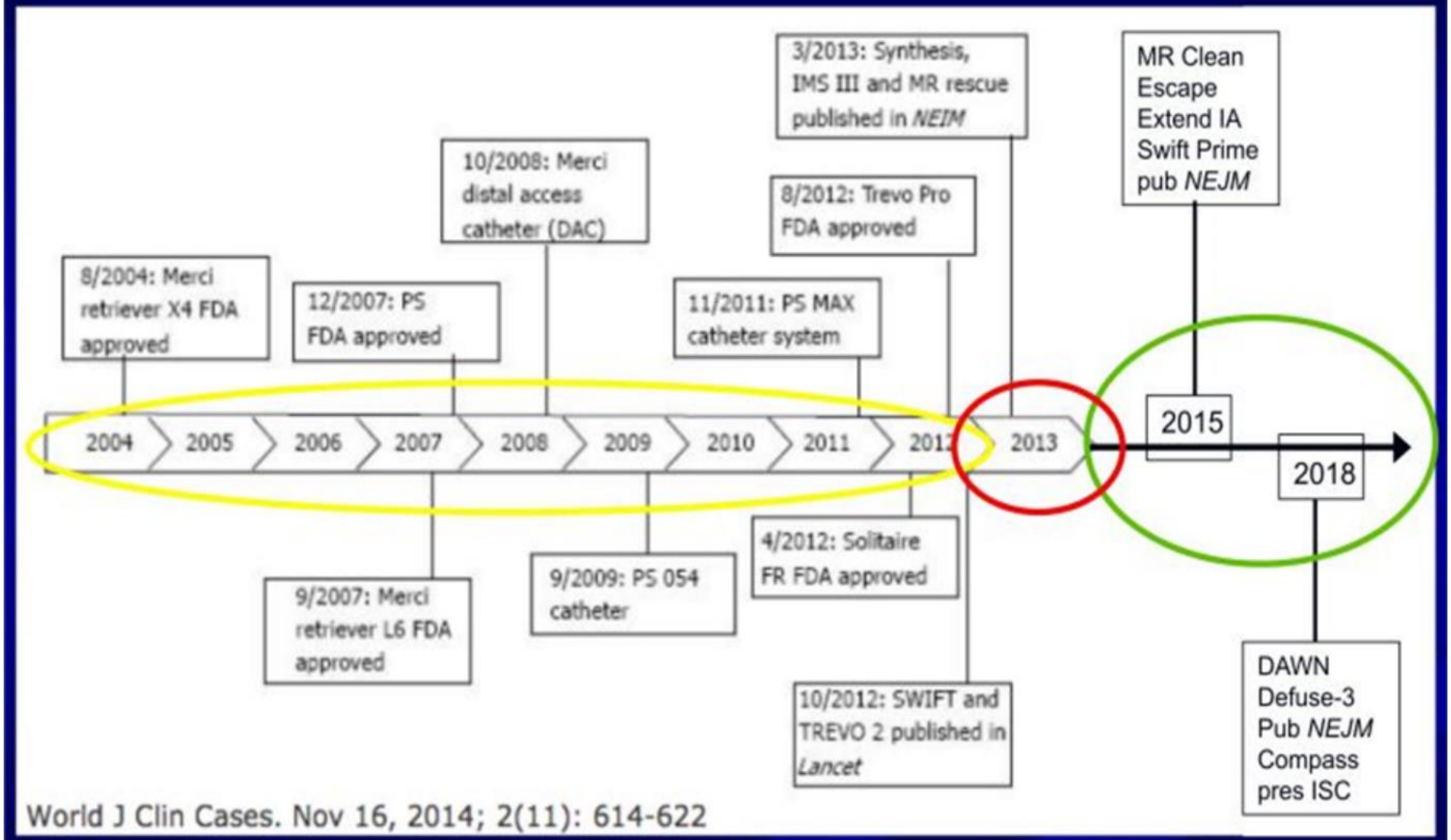
- Intraarterial thrombolysis
- Proximal thrombectomy
- Distal thrombectomy
- Mechanical recanalisation



- Different modalities in catheter based stroke tharapy

petrovivo@hotmail.com

Stroke EVT Timeline

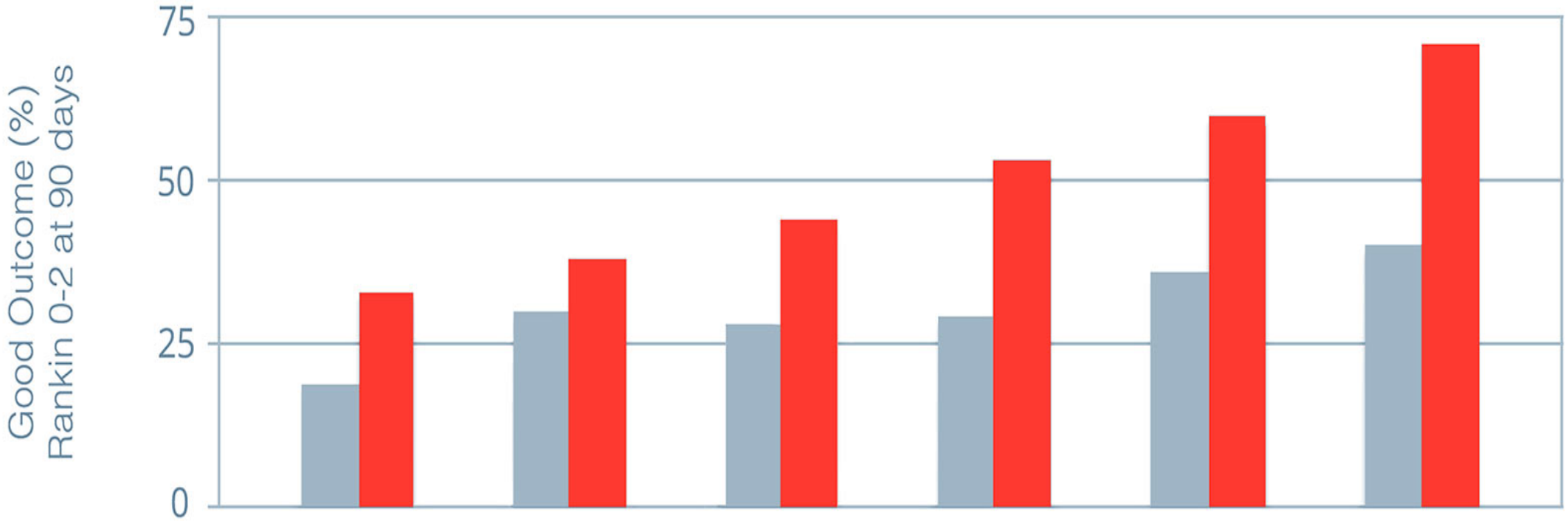


World J Clin Cases. Nov 16, 2014; 2(11): 614-622

RANDOMIZED ENDOVASCULAR TRIAL RESULTS

E 2019

WIST



	MR CLEAN	THERAPY	REVASCAT	ESCAPE	SWIFT PRIME	EXTEND-IA
	Non-contrast CT	CTA Clot ≥ 8 mm	ASPECTS ≥ 6	ASPECTS ≥ 6 CTA collaterals	CT/MR Perfusion **RAPID (80%)**	CT Perfusion **RAPID (100%)**
Endovascular	33%	38%	44%	53%	60%	71%
Control	19%	30%	28%	29%	36%	40%

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

2018. Stroke guidelines

2. Regional systems of stroke care should be developed. These should consist of the following: (a) Healthcare facilities that provide initial emergency care, including administration of IV alteplase, and, (b) Centers capable of performing endovascular stroke treatment with comprehensive periprocedural care to which rapid transport can be arranged when appropriate.	I	A	Rec fro und See for

petrovivo@hotmail.com

Time to reperfusion and mRS ≤2 in IMS III

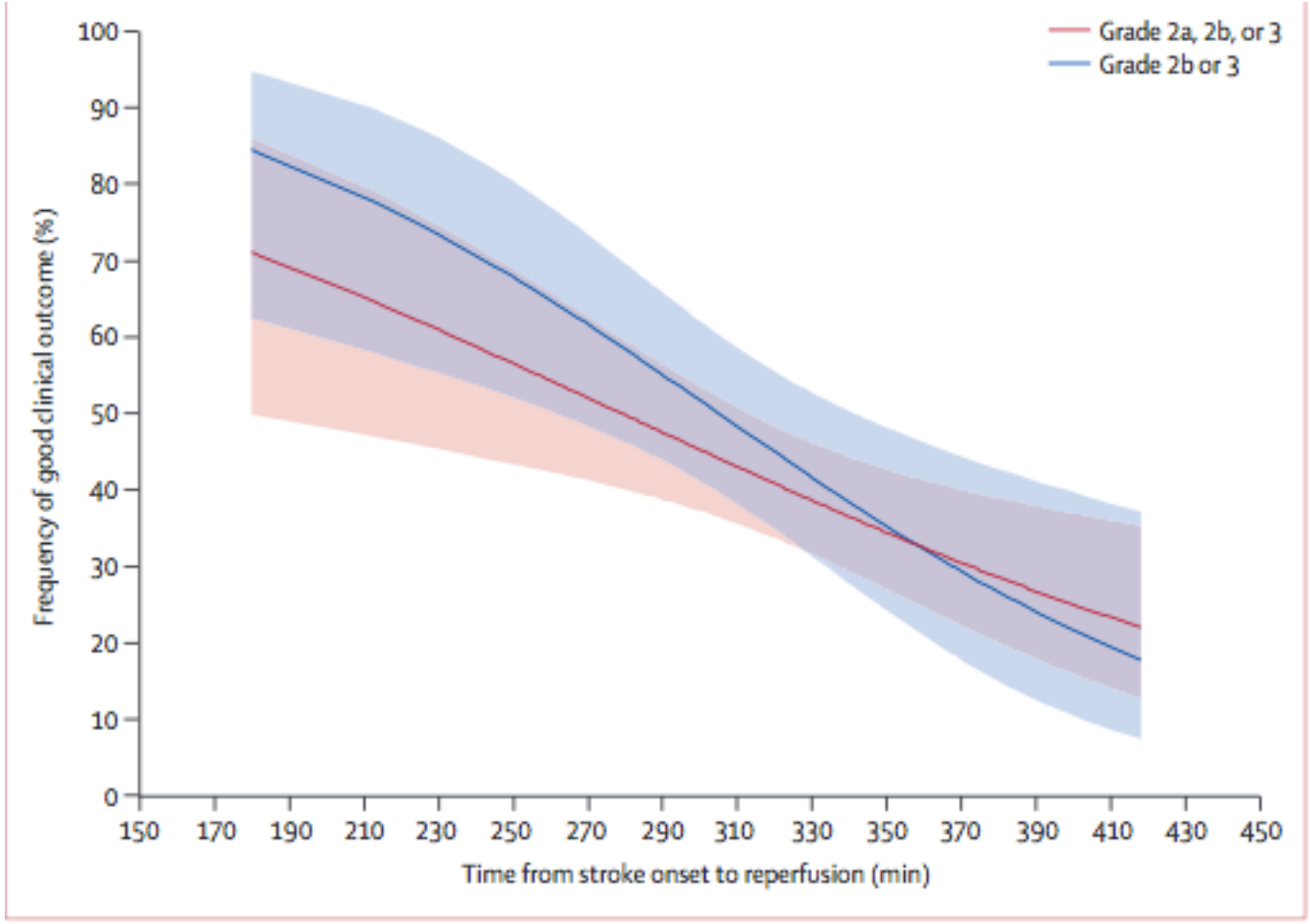


Figure 5: **Probability of good clinical outcome by time as predicted by unadjusted analysis, by reperfusion status**
Shaded areas show 95% CIs. Good clinical outcome was defined as a modified Rankin Scale score of ≤2.

petrovivo@hotmail.com

Khatri et al, Lancet Neurology 2014

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

: 2019

WIST

Cardiologists' experience: 3 centers registry

Petr Widimski, Goktekin.JACC, 2016

TABLE 1 Baseline Characteristics, Time Delays, and Outcomes

Baseline clinical characteristics	
Female	37 (44)
Anterior stroke	82 (97)
Age, yrs	64.8 ± 13.8
Diabetes mellitus	25 (30)
History of hypertension	63 (75)
Clinical evidence of atherosclerosis	37 (44)
Atrial fibrillation (any type, any time)	34 (40)
History of stroke or TIA	9 (11)
Admission NIHSS	18.0 ± 4.1 (median 18, range 6–27)
Time delays: median values, min (IQR: 25–75)	
Stroke onset to CT	90 (55–145)
CT to sheath insertion	64 (24–89)
Sheath insertion to recanalization	53 (41–70)
Stroke onset to sheath insertion	165 (95–260)
Stroke onset to recanalization	236 (202–342)
Procedural data	
Intubation/general anesthesia use	24 (29)
Heparin dose, units	3,570 ± 3,800 (median 2500)
Angiographic and clinical outcomes	
Recanalization rate (TICI 2a/2b/3 flow)	62 (74)
Good neurological outcome at 90 days (mRS ≤2)	35 (42)
90-day mRS among early presenters (stroke onset to sheath insertion time <3 h)	3.15 ± 2.20 (median 2)*
90-day mRS among late presenters (stroke onset to sheath insertion time >3 h)	3.81 ± 2.11 (median 4)*
90-day mortality	27 (32)
Symptomatic intracranial hemorrhage at 7 days (%)	12 (14)

Values are n (%) or mean ± SD, unless otherwise noted. *p = 0.160.

CT = computed tomography; IQR = interquartile range; mRS = modified Rankin scale; NIHSS = National Institutes of Health Stroke Score; TIA = transient ischemic attack; TICI = Thrombolysis In Cerebral Infarction.

petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

Acute Ischemic Stroke Care Today . Time is BRAIN

ICCA STROKE 2019

WIST

Symptoms

Call

EMS

Primary Stroke Center

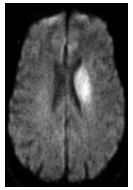
Imaging

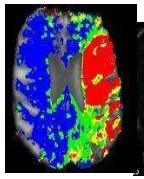
Telemedicine

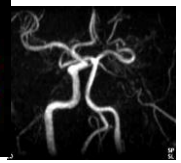
IV Lytic

EMS

Stroke Center



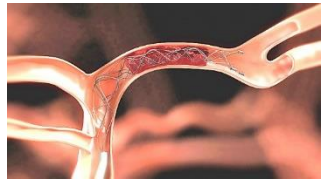




Advanced Imaging

INR Cath Lab

Angiogram



Clot retrieval

Stroke Unit

petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

Acute Ischemic Stroke Care Today . Time is BRAIN

ICCA STROKE 2019

WIST

Direct transfer from EMS to CathLab

Symptoms

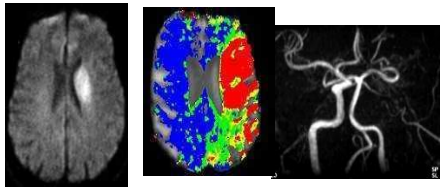
Call

Imaging

Telemedicine

IV Lytic

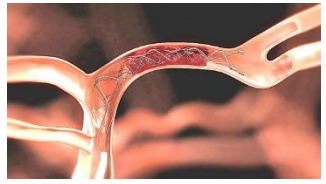
EMS



Advanced Imaging

INR Cath Lab

Angiogram



Clot retrieval

Stroke Unit

petrovivo@hotmail.com

Cardiologists' experience in EST

TABLE IV. Complications During Hospitalization (n = 26)

	n (%)
Intracranial hemorrhage	3 (12)
New ischemic stroke	1 (4)
Death	0 (0)
Myocardial infarction	0 (0)
Overall	4 (15)

TABLE V. Outcomes for Catheter-Based Therapy (n = 26)

	n (%)
Successful reperfusion[a]	23 (88)
Reduction in NIHSS $\geq$4[b]	18 (69)
Mortality at 90 days	2 (8)
Modified Rankin $\leq$2 at 90 days	13 (50)

[a]Restoration of flow with <50% residual stenosis and no dissection.
[b]NIHSS reduction from admission to hospital discharge.

James de Vries, Chr. White, Catheterization and Cardiovascular Interventions 73:692–698 (2009)

petrovivo@hotmail.com

Cardiologists' experience in EST PRAGUE-16

Table 2. The time delays and functional outcomes.

Interval	Mean (min)	Range (min)
Symptom onset - CT	81	39-337
CT - sheath	47	18-134
Sheath - reperfusion	46	17-75
Total ischaemic time (symptom onset - reperfusion)	211	111-437
Functional outcomes	**Symptom - cathlab time <120 min**	**Symptom - cathlab time >120 min**
Death or severe disability (mRs >2) at 90 days	45%	60%
Mean mRs at 90 days (all patients)	2.82	3.60
Mean mRs at 90 days (survivors only)	1.17	2.80

Petr Widimski, PRAGUE-16. Eurointervention, 2014

petrovivo@hotmail.com

Cardiologists' experience in EST PRAGUE-16

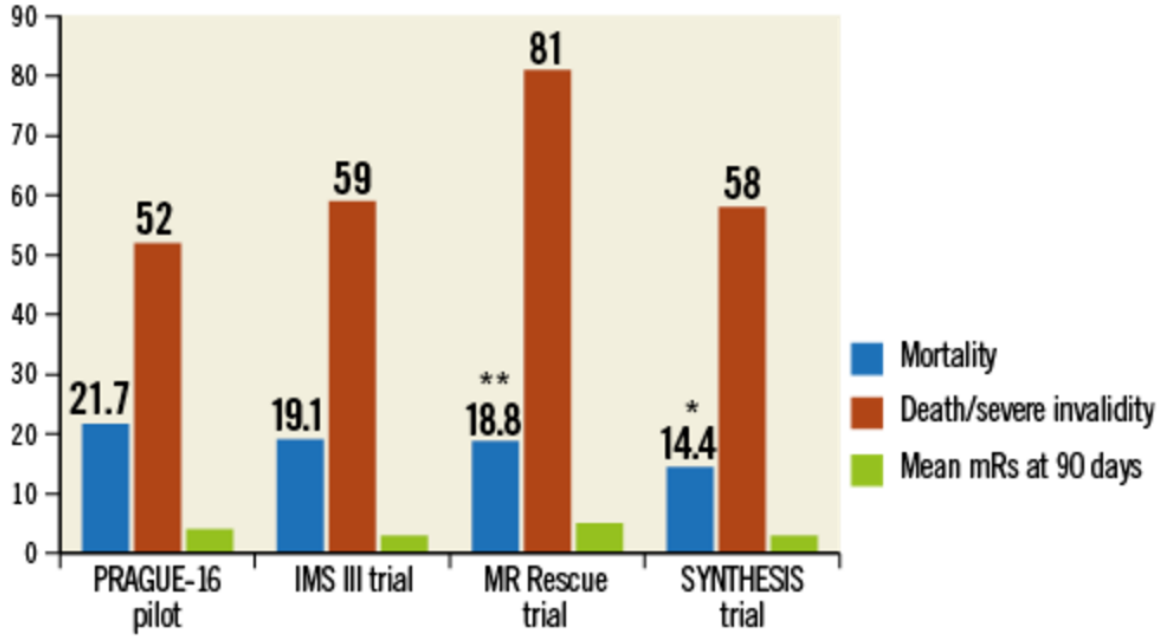


Figure 3. Comparison of results of this pilot study with the endovascular treatment arms of the three largest

Petr Widimski, PRAGUE-16. Eurointervention, 2014

petrovivo@hotmail.com

ESC Council on Stroke

Council on Stroke: Who we are

- Over 1000 members worldwide
- Over 35 volunteers in the Council's Nucleus & Board

Council on Stroke: the origins

While effective treatment of acute myocardial infarction substantially improved the outcomes of the vast majority of patients during the last 10-15 years, acute stroke remains a major thread with high mortality and/or permanent disability. The incidence of acute stroke is similar to the incidence of acute coronary syndromes, but the outcomes of stroke patients are significantly worse. The rising body of evidence shows, that at least 30-50% (probably even more – this depends on the diagnostic approach) of ischemic strokes are caused by the heart disease (atrial fibrillation, valvular or congenital heart disease, infective endocarditis, etc.). Therefore, effective diagnosis and treatment of many heart diseases has the potential to significantly contribute to stroke prevention. Furthermore, several randomized trials recently demonstrated that immediate restoration of cerebral blood flow by combined pharmacological and mechanical (endovascular) techniques significantly improves the outcome of patients with ischemic stroke caused by a major artery occlusion.

Thus, in 2016 the European Society of Cardiology (ESC) created the **ESC Council on Stroke** as a multidisciplinary constituent body to promote the interdisciplinary cooperation, education, research on stroke with the ultimate goal of reducing the burden of cardiovascular disease in Europe.

doi:10.1093/eurheartj/ehy442

Thrombectomy for stroke by cardiologists

Cardiologists are willing to cooperate with neurologists / strokologists to help patients with acute ischemic stroke

Report from the joint session of the European Society of Cardiology (ESC) Council on Stroke and the European Association for Percutaneous Cardiovascular Interventions (EAPCI) during the EuroPCR Congress in Paris, 25 May 2018

Acute ischaemic stroke is a devastating disease with high mortality and even higher long-term (frequently permanent) severe disability. The most effective treatment of acute ischaemic stroke (when it is caused by a large artery occlusion) is known: immediate recanalization of the blocked artery by percutaneous endovascular mechanical thrombectomy (ideally immediately following of so-called 'bridging' i.v. thrombolysis, which can be given immediately after the diagnosis is established by brain imaging).

thrombectomy to a much broader population of stroke patients worldwide—in those areas, where neuroradiology services are either missing or are not able to cover 24/7/365 service availability. The aim was to present the proposal for shorter training requirements for those interventionalists, having previous experience with elective carotid interventions.

L.N. Hopkins (neurosurgeon from Buffalo, US) presented the current training requirements for endovascular interventions in stroke as

petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

STROKE 2019

WIST

NATIONAL CONSENSUS
for Mechanical Thrombectomy in Acute Ischemic Stroke

НАЦИОНАЛЕН КОНСЕНСУС
за механична тромбектомия при остър исхемичен мозъчен инсулт

At the initiative of
The Bulgarian Society of Endovascular Therapy

По инициатива на
Българското дружество по ендоваскуларна терапия

Edited by

Assoc. Prof. I. Petrov, MD, PhD
President of the Bulgarian Society of Endovascular Therapy and National Consultant in Cardiology

Acad. Prof. E. Titianova, MD, PhD, DSc
President of the Bulgarian Society of Neurosonology and Cerebral Hemodynamics

Prof. S. Andonova, MD, PhD, DSc
National Consultant in Interventional Neurology and Chairman of the Section of Strokes of the Bulgarian Society of Neurosonology and Cerebral Hemodynamics

Prof. L. Grozdinski, MD, PhD, DSc
President of the Bulgarian National Society of Angiology and Vascular Surgery

Corr. Member Prof. N. Petrov, MD, PhD, DSc
President of the Society of Anesthesiologists in Bulgaria and National Consultant in Anesthesiology and Intensive Care

Prof. K. Guirov, MD, PhD
National Consultant in Vascular Surgery and Member of the Board of the Bulgarian National Society of Vascular, Endovascular Surgery and Angiology

Prof. A. Postadjan, MD, PhD
President of the Bulgarian

Под редакцията на

Доц. И. Петров, д.м.
Председател на Българското дружество по ендоваскуларна терапия и национален консултант по кардиология

Акад. проф. Е. Титянова, д.м.н.
Председател на Българската асоциация по невросонология и мозъчна хемодинамика

Проф. С. Андонова, д.м.н.
Национален консултант по интервенционална неврология и председател на Секция по инсулти към Българската асоциация по невросонология и мозъчна хемодинамика

Проф. Л. Гроздински, д.м.н.
Председател на Българското национално дружество по ангиология и флебология

Чл.-кор. проф. Н. Петров, д.м.н.
Председател на Дружеството на анестезиолозите в България и национален консултант по анестезиология и интензивно лечение

Проф. К. Гиров, д.м.
Национален консултант по съдова хирургия и член на Управителния съвет на Българското национално дружество по съдова и ендоваскуларна хирургия и ангиология

Проф. А. Постаджиян, д.м.
Председател на Дружеството

petrovivo@hotmail.c

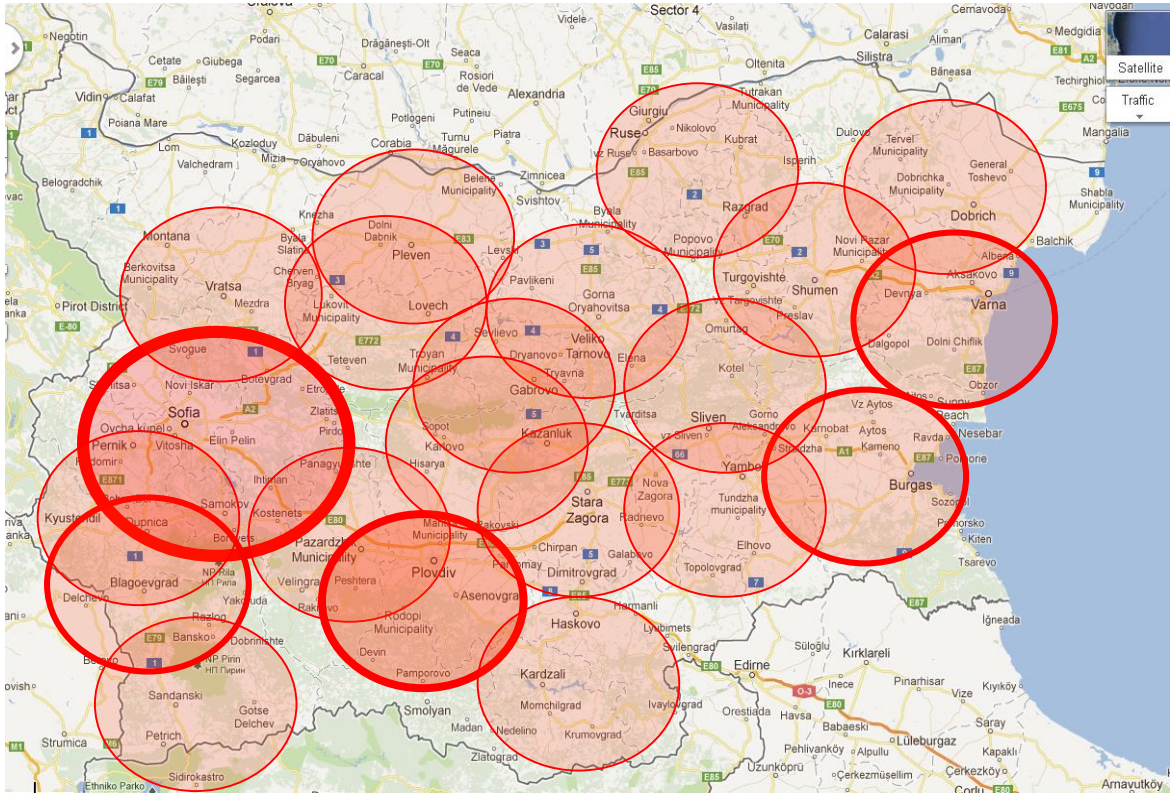
ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

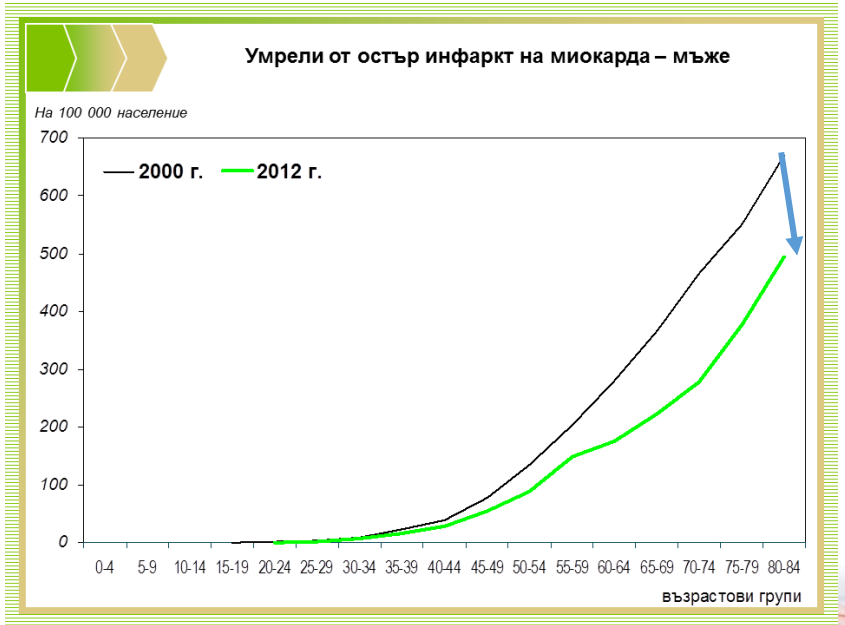
WIST

Bulgaria. pPCI coverage
After ESC "Stent for life" initiative implementation

2017

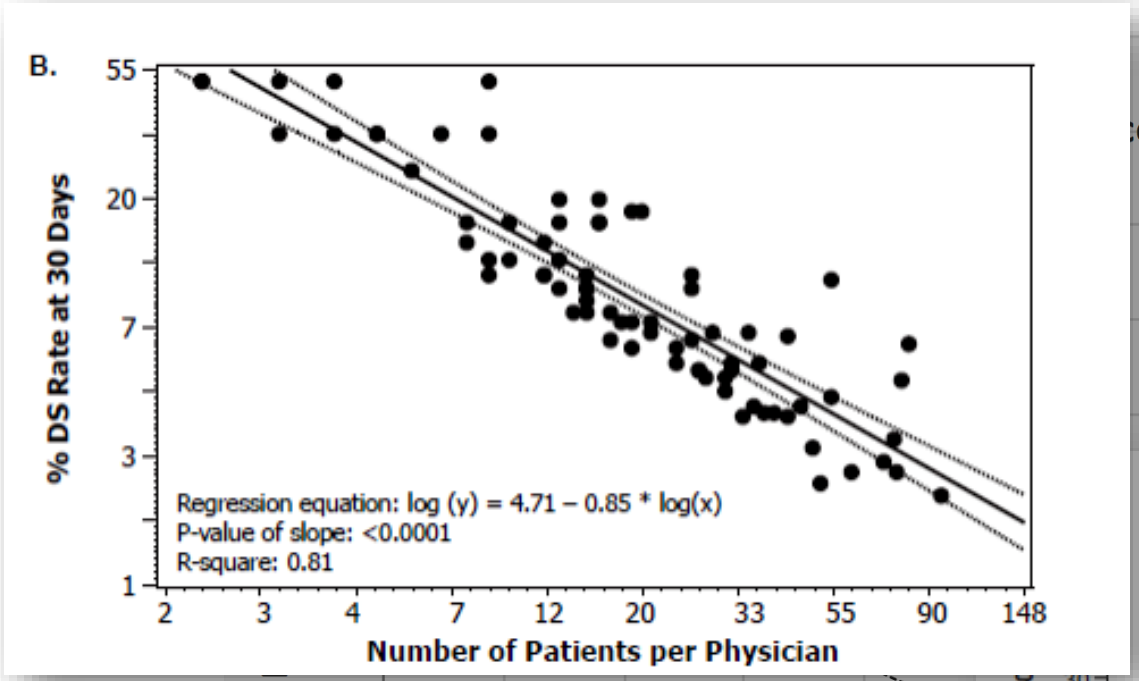


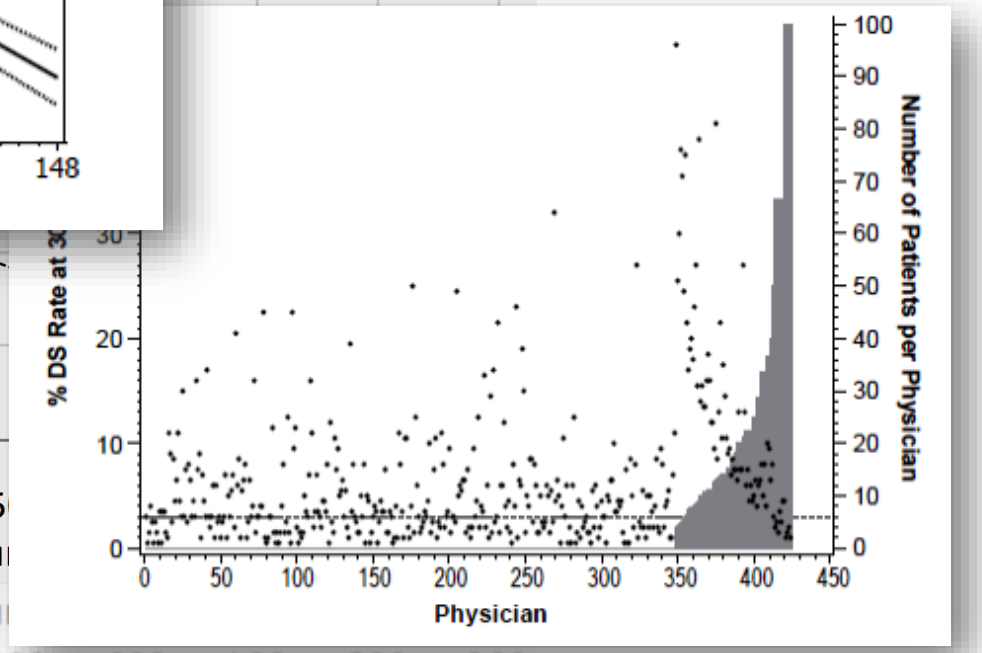
Stent for life experience
STEMI mortality reduction:



petrovivo@hotmail.com

Importance of Experience





Gray et al: JACC Interv 2011

Smout J, Macdonald S, Stansby G International Journal of Stroke. Vol5, Dec 2010; 477-482

Interventional recanalization of intracranial arteries. City Clinic experience 2016-2018 (n=18)

ICCA STROKE 2019

WIST

Parameter	Distribution
CT imaging at baseline	15 (83.3%)
MRI imaging at baseline	9 (50%)
Occlusion site	
MCA	10 (55.6%)
ICA (2 high-grade stenosis and 1 T-occlusion)	3 (16.7%)
Basilar artery	2 (11.1%)
Vertebral artery	1 (5.6%)
Anterior cerebral artery	1 (5.6%)
Pericallosal artery	1 (5.6%)
Onset-to-needle time (min) – mean ± SD	187 ± 112
Groin puncture-to-recanalization time (min) - mean ± SD	68,6 ± 14.3
Onset-to-TICI 2b/3 recanalization time (min) - mean ± SD	255 + 113
Intravenous thrombolysis	7 (38.9%)
Penumbra system (PS) mechanical thromboaspiration (A-method)	4 (22.2%)
PS, balloon PTA and low-dose supraselective intra-arterial thrombolysis (B-method)	4 (22.2%)
Wire manipulation, balloon PTA and low-dose supraselective intra-arterial thrombolysis (C-method)	5 (27.8%)
Supraselective intra-arterial thrombolysis (D-method)	5 (27.8%)
ICA stenting	2 (11.1%)
TICI 2b-3 flow	4+9 (72.3%)

Med - Clin Res & Rev, 2018

EVT Stroke team
4 neurolgists
2 neuroimaging specialists
3 interventional cardioangiologists
12 anaestesiologists
2 cathlabs/24 hrs

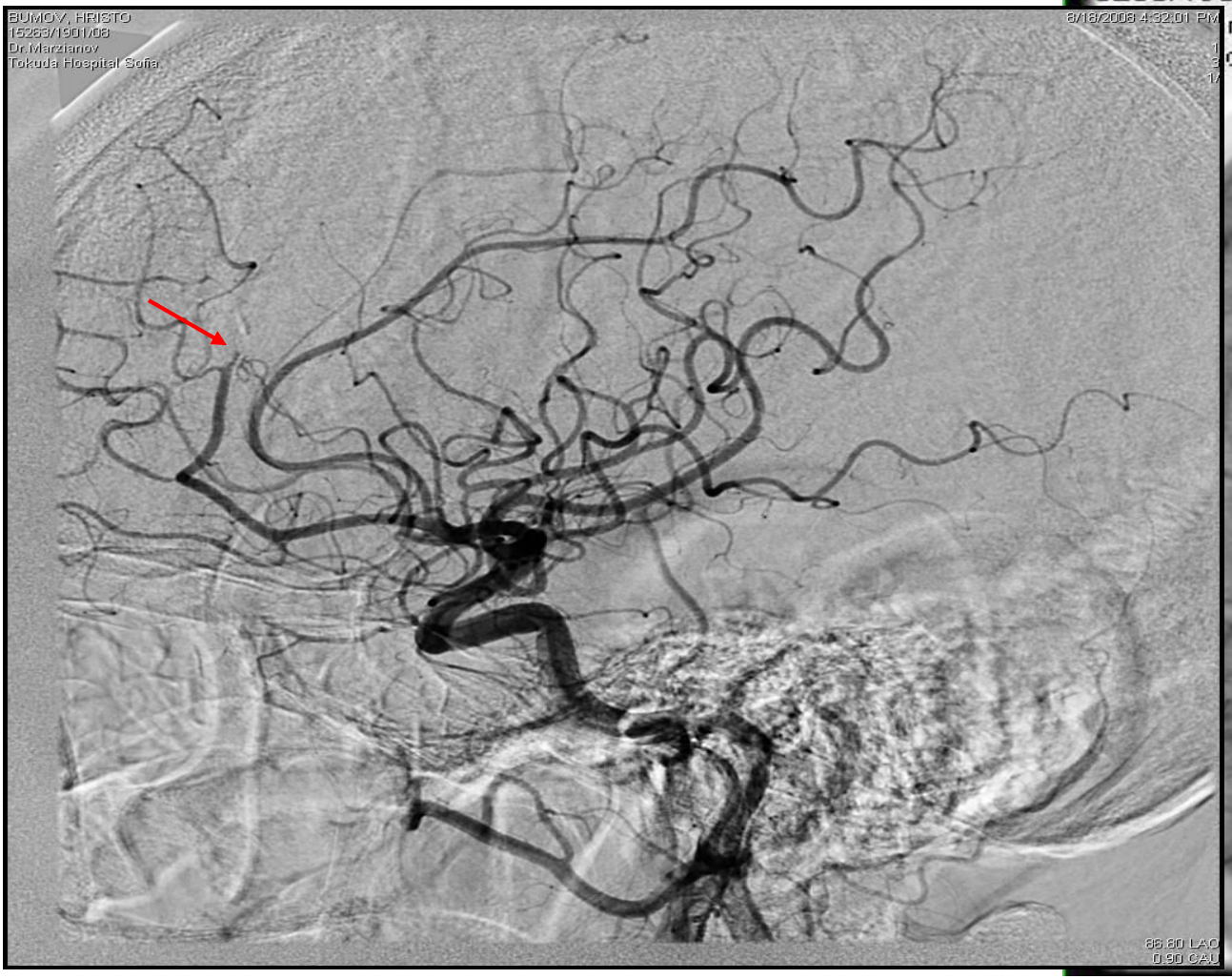
Reocclusions after EVT and Device related complications	0 (0%)
Symptomatic ICH	2 (11.1%)
Asymptomatic ICH	1 (5.6%)
Minor systemic bleeding	3 (16.7%)
NIHSS final - mean ± SD	8.7 ± 7.2
mRS 0-2 at 90 days	9 (50%)
Mortality at 3 months	1 (5.6%)

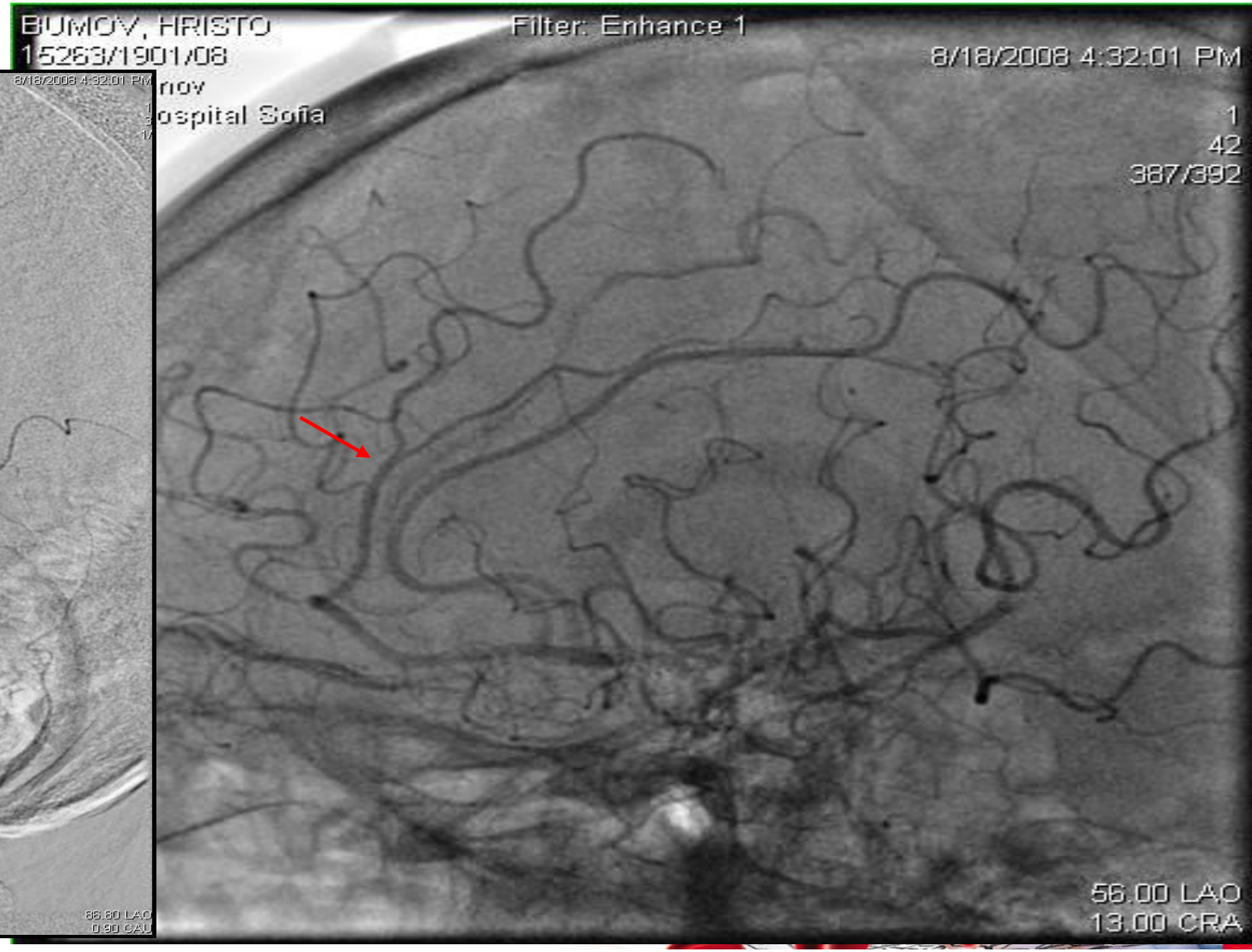
ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

First ever mechanical recanalization of stroke related artery 2004 in Bulgaria. Performed by a cardiologist.





ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

Clinical case

Variables/ Parameters	Pt No 1, V
Age (years) / Gender	54 y/o, man
NIHSS Pretreatment	15
Initial mRS	5
Initial CT / MRI imaging	CT, CT-A
Acute occlusion site	Left extracranial ICA
Stroke etiology	Cardioembolic
	Wake-up Stroke 2nd Postooperative day
Patient Diseases	IHD, Triple Vessel Cardiac Disease, STEMI, AH 3, DM 2 TYPE, ACB x 4
Average time from onset to groin puncture (h)	Unknown (<6 h)
Average time to TICI 2b/3 recanalization (min)	
Final TICI result	TICI 3
NIHSS at discharge (* dif)	5 (12 DAY)
mRS on discharge	3
mRS, 90 day	1
Device related complications	No
Device tips and tricks	
Symptomatic ICH	No
Mortality	No

petrovivo@hotmail.com

Background of WUS

- **Wake-up stroke** is a condition, **affecting ≈ 8-25%** of patients with stroke.
- **It is a distinct but underprivileged subgroup** of patients with stroke.
- **a challenge** to acute stroke treatment
- Since the time window is unknown, the majority of patients with WUS are excluded from reperfusion treatment with IV thrombolysis or EVT.
- However, **a relevant number of these patients might benefit** from reperfusion treatment.
- There are some **brain imaging concepts guiding the reperfusion treatment** in patients with unknown time of symptom onset.
- Thrombolysis in selected patients with WUIS is feasible, and its outcomes are comparable with those thrombolysed with 0 to 4.5 hours.
- There are **limited data** on the risks and benefits of reperfusion therapies for WUS.

Treatment Concepts for Wake-Up Stroke and Stroke With Unknown Time of Symptom Onset. G.Thomalla, C. Gerloff. *Stroke. 2015;46:9 2707-2713*

Reperfusion Therapies for Wake-Up Stroke. Systematic Review. Deborah Buck, Lisa C. Shaw, Christopher I. Price, Gary A. Ford, B Chir. *Stroke. 2014;45:6 1869-1875.*

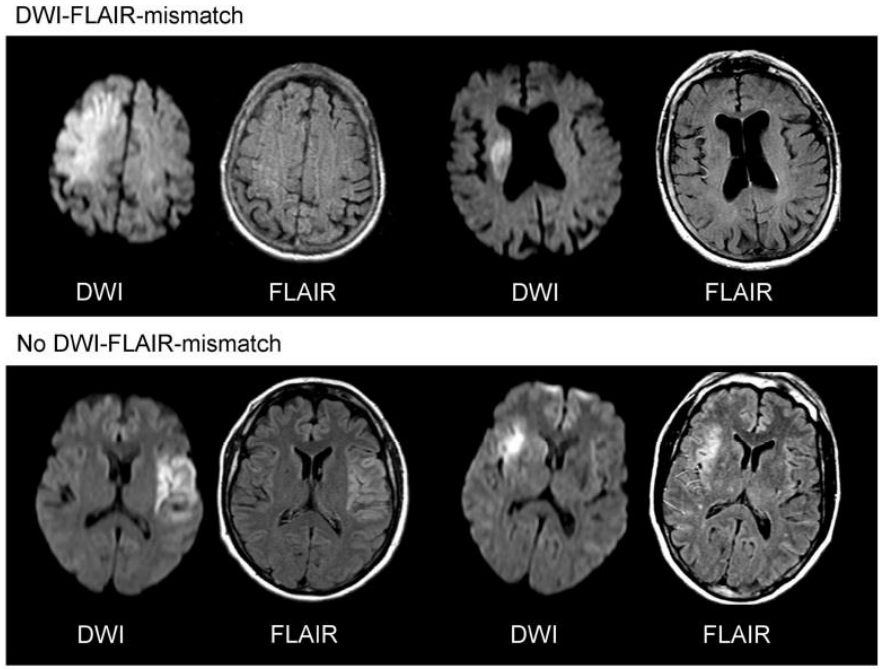
Wake-up stroke: clinical characteristics, imaging findings, and treatment option – an update. *D. Leander Rimmele, G.Thomalla. Frontiers in Neurology.* March 2014; Vol 5; Article 35: 1-7.

petrovivo@hotmail.com

Neuroimaging

T2W Imaging failed to detect acute ischemia until about 2–3 h of stroke;

DWI-FLAIR-mismatch was shown to identify patients within 3–4.5 h with high specificity and positive predicted value (PPV);

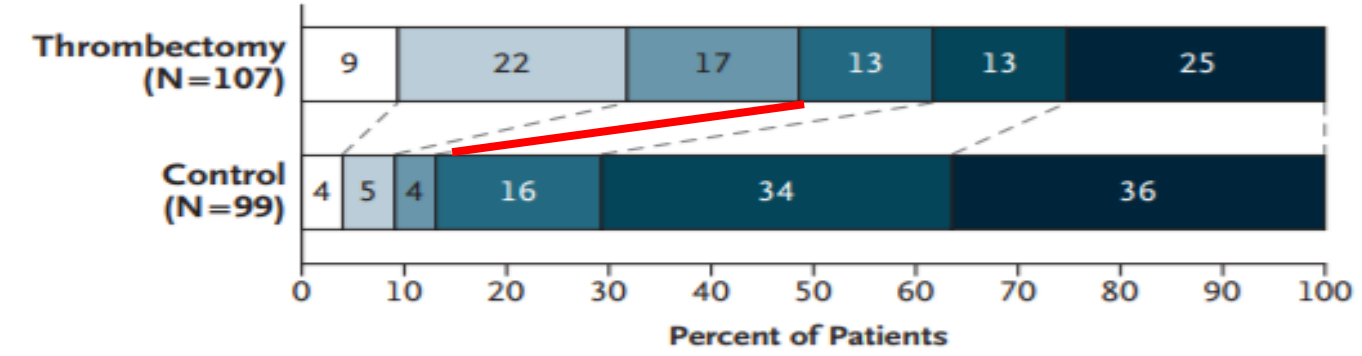


- In large multicenter studies (PRE-FLAIR:PRE-dictive value of FLAIR and DWI for the identification of acute ischemic stroke patients 3 and 4.5 h of symptom onset–a multicenter study including 643 patients (*Lancet Neurol* (2011) **10**:978–86.).
- The specificity of the DWI-FLAIR-mismatch to identify patients within the time frame of 4.5h was in this study 0.81 and the PPV 0.87.

D. Leander Rimmele, G.Thomalla. Frontiers in Neurology. 2014; Vol 5; Art35: 1-7.

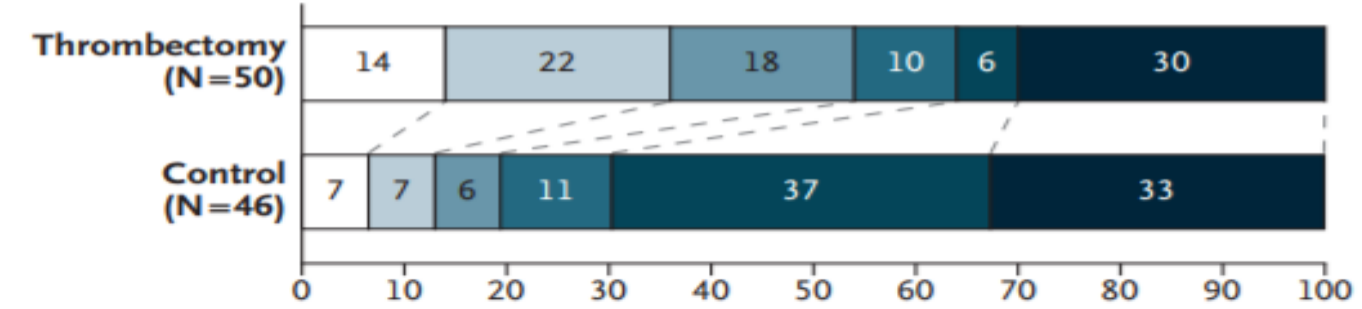
petrovivo@hotmail.com

DAWN: Thrombectomy Effective Up to 24 Hours After Stroke

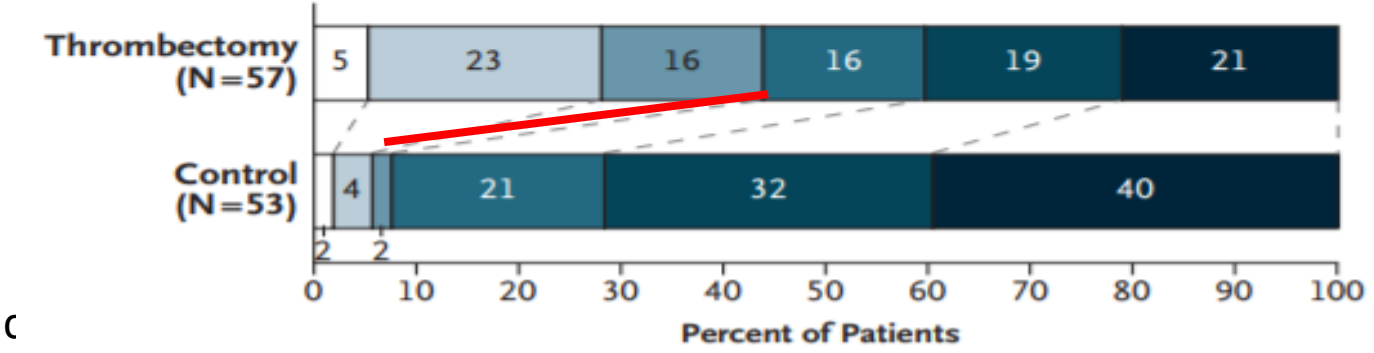


B Subgroups According to Time of Stroke Onset

Last Known to Be Well 6 to 12 Hr before Randomization



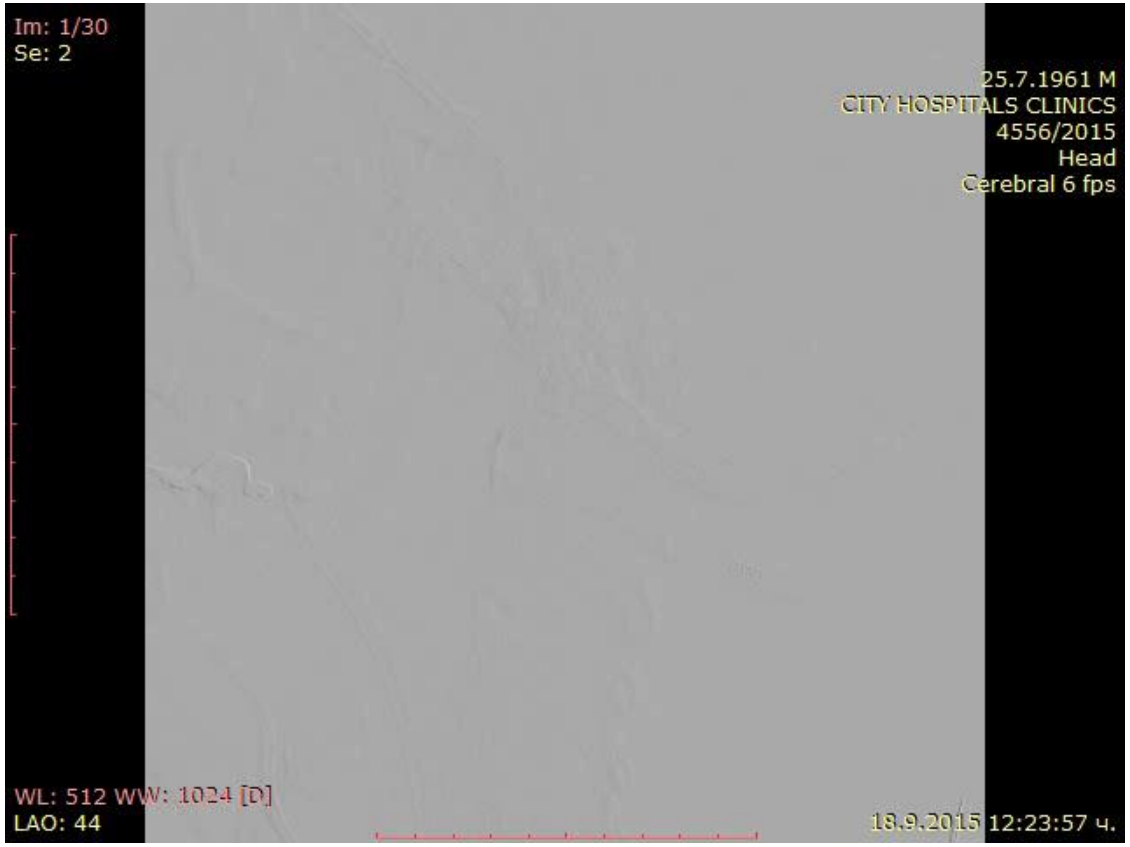
Last Known to Be Well >12 to 24 Hr before Randomization



omy	Posterior Probability	
	Benefit	Heterogeneity
(1.1 to 3.0)	>0.99	
		0.47
(0.3 to 4.2)	0.99	
(0.6 to 2.9)	>0.99	
(−0.6 to 5.5)	0.95	
		0.14
(0.2 to 3.2)	0.99	
(1.3 to 4.0)	>0.99	
		0.42
(0.8 to 2.8)	>0.99	
(0.3 to 4.2)	0.99	
		0.71
(1.0 to 3.7)	>0.99	
(0.6 to 3.1)	>0.99	
		0.77
(0.8 to 5.2)	>0.99	
(0.9 to 3.1)	>0.99	
		0.21
(1.0 to 3.6)	>0.99	
(0.5 to 5.9)	0.99	
(−0.5 to 3.2)	0.93	
		0.22
(0.4 to 3.4)	>0.99	
(1.1 to 3.6)	>0.99	
		0.70
(0.9 to 3.2)	>0.99	
(0.8 to 3.9)	>0.99	

petrovivo@hotmail.c

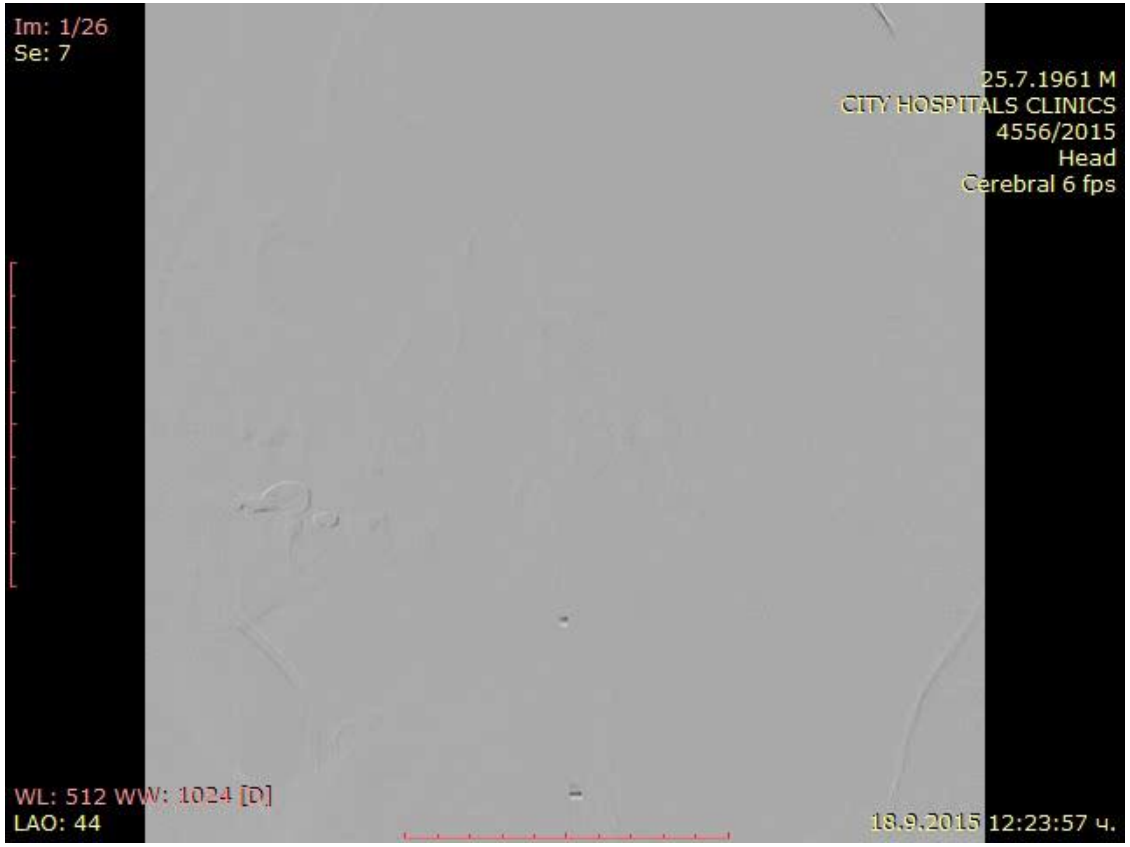
Interventional EV Procedure



- A selective cannulation of LCCA with 6 Fr catheter Benchmark was performed, followed by introduction of ACE catheter in proximal part of ICA.
- Over a 0,014'' wire catheter Neuron 3MAX as placed proximal to the occlusion.
- Selective thromboaspiration was performed with Penumbra aspiration system.
- Post aspirational angiography reveals no residual thrombosis with excellent angiographic result, TICI score 3.

petrovivo@hotmail.com

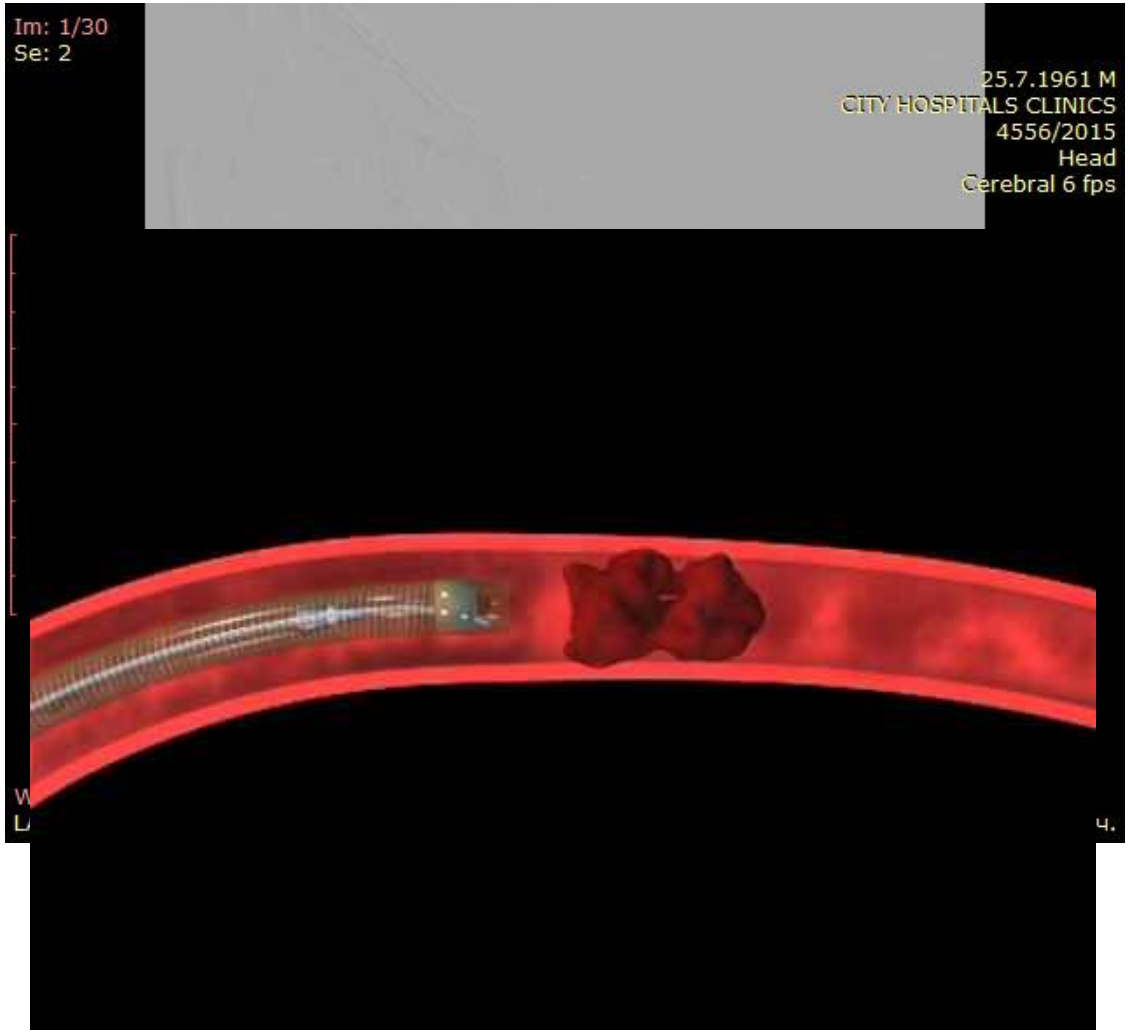
Interventional EV Procedure



- A selective cannulation of LCCA with 6 Fr catheter Benchmark was performed, followed by introduction of ACE catheter in proximal part of ICA.
- Over a 0,014'' wire catheter Neuron 3MAX as placed proximal to the occlusion.
- Selective thromboaspiration was performed with Penumbra aspiration system.
- Post aspirational angiography reveals no residual thrombosis with excellent angiographic result, TICI score 3.

petrovivo@hotmail.com

Interventional EV Procedure



- A selective cannulation of LCCA with 6 Fr catheter Benchmark was performed, followed by introduction of ACE catheter in proximal part of ICA.
- Over a 0,014'' wire catheter Neuron 3MAX as placed proximal to the occlusion.
- Selective thromboaspiration was performed with Penumbra aspiration system.
- Post aspirational angiography reveals no residual thrombosis with excellent angiographic result, TICI score 3.

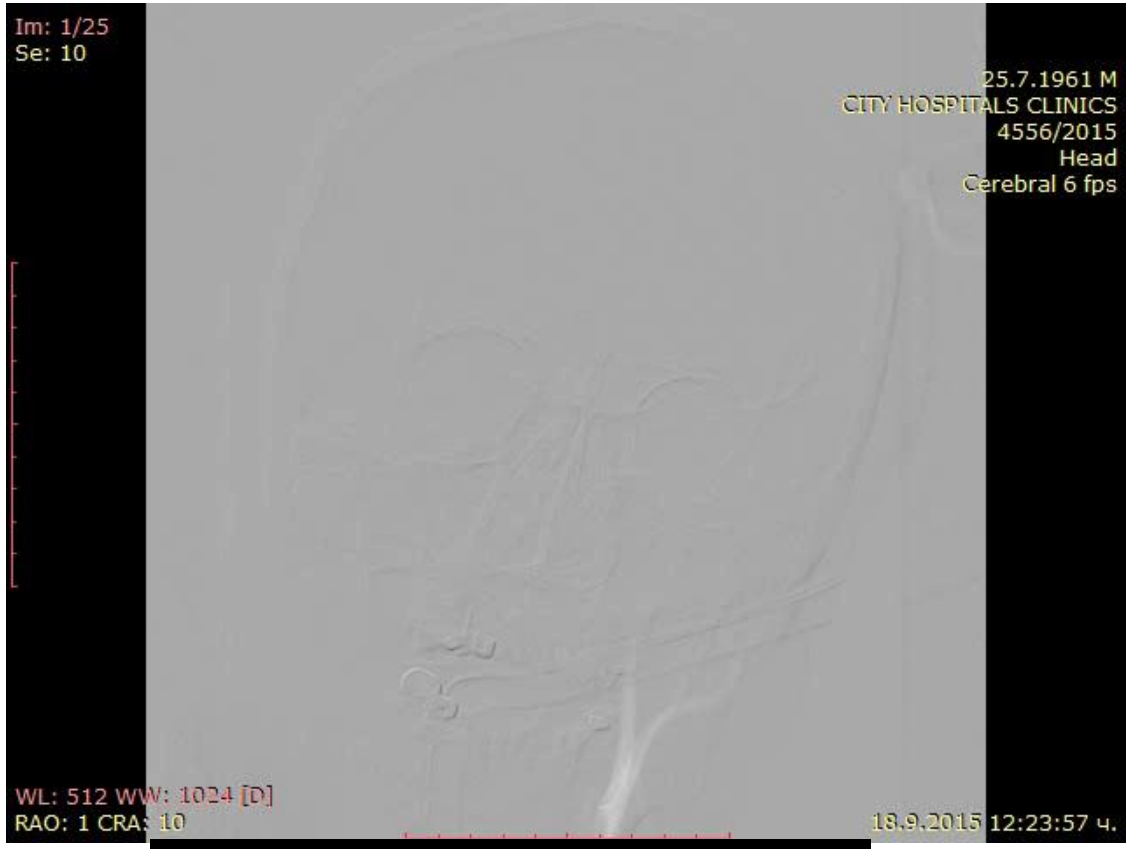
petrovivo@hotmail.com

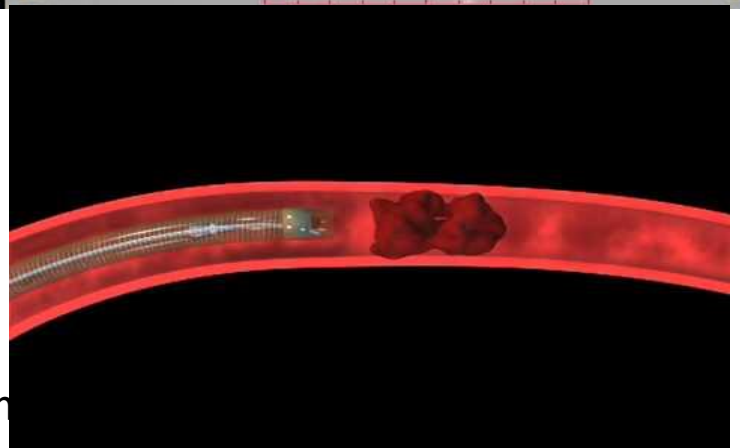
ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

Interventional EV Procedure

ICCA STROKE 2019

WIST





- A selective cannulation of LCCA with 6 Fr catheter Benchmark was performed, followed by introduction of ACE catheter in proximal part of ICA.
- Over a 0,014'' wire catheter Neuron 3MAX as placed proximal to the occlusion.
- Selective thromboaspiration was performed with Penumbra aspiration system.
- Post aspirational angiography reveals no residual thrombosis with excellent angiographic result, TICI score 3.

petrovivo@hotmail.com

Outcome

- The patient was discharged on the 12th post procedural day;
- The neurologic examination on the day the discharge reveals no motor deficit only persisting sensory aphasia. NIHSS = 5; mRS = 3
- 90 day mRS = 1

petrovivo@hotmail.com

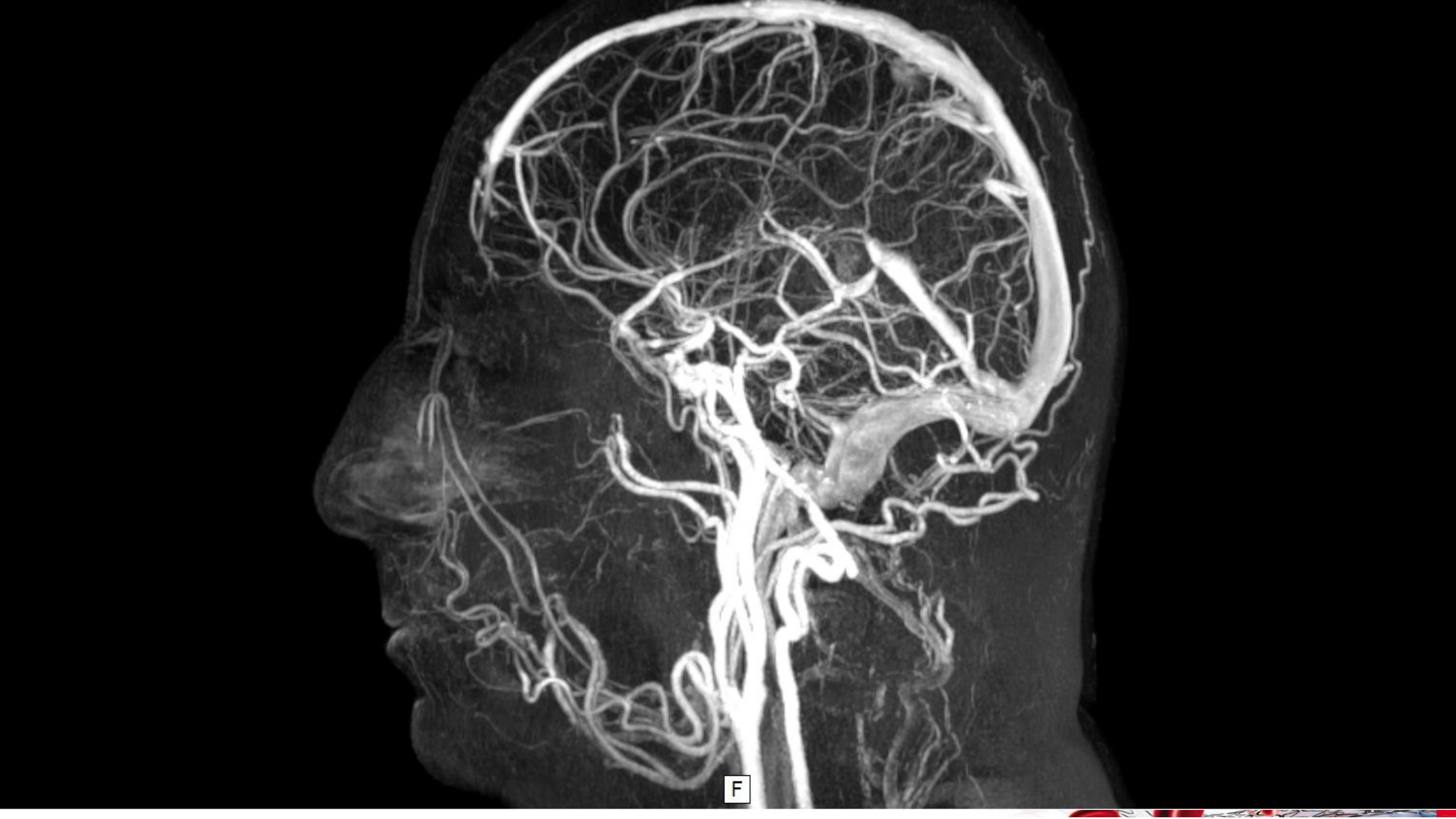
ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

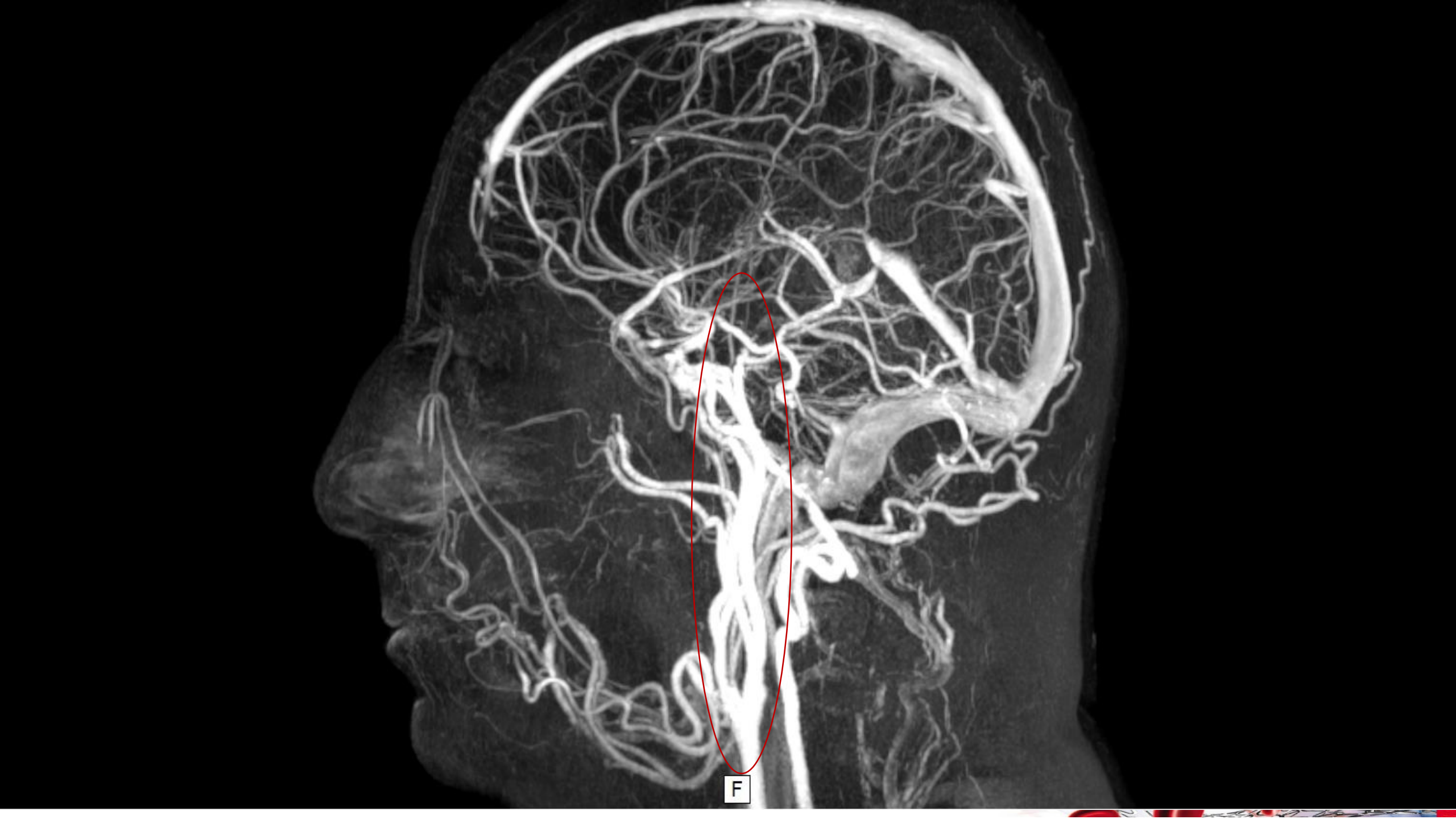
ICCA STROKE 2019

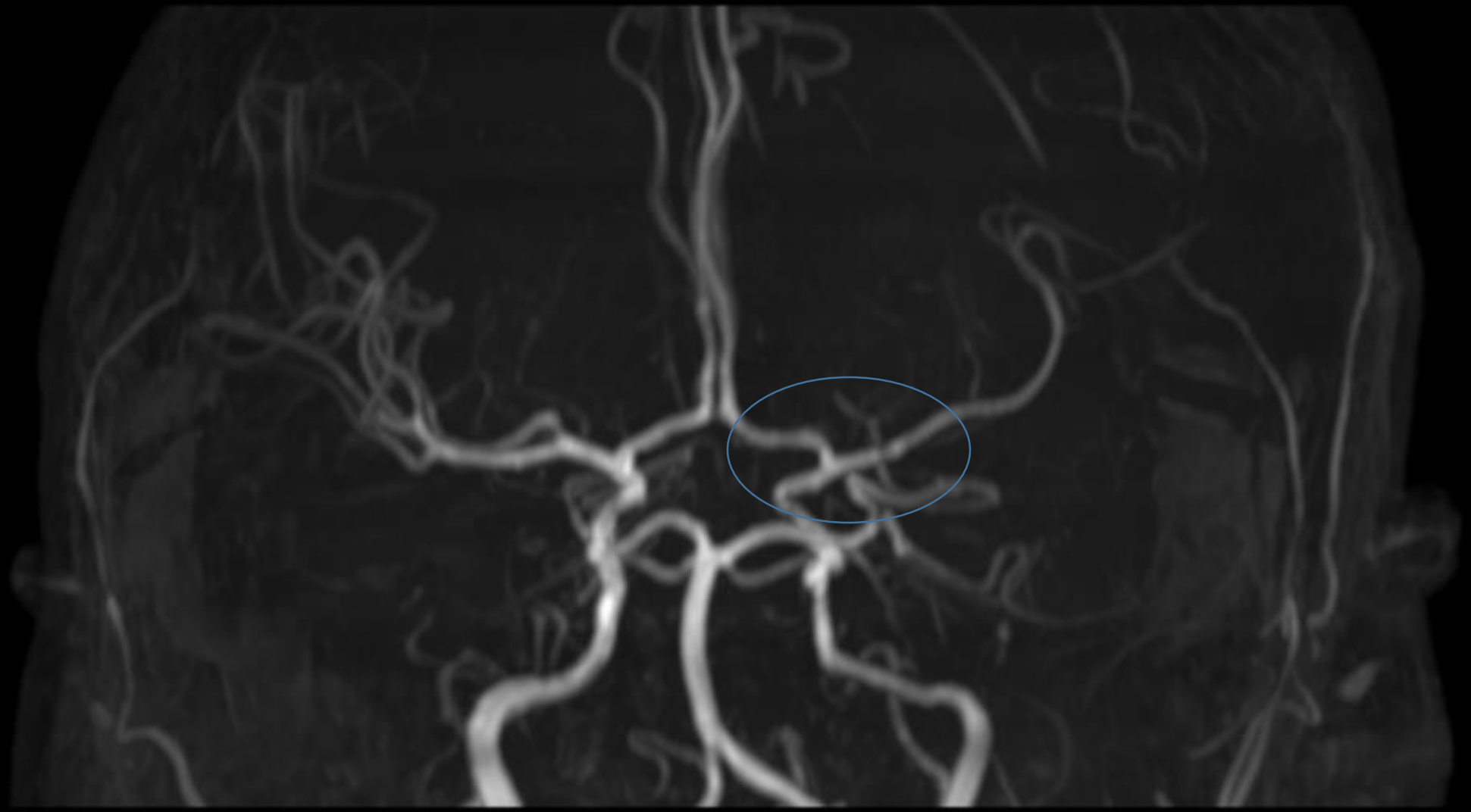
WIST

Control MRT on 27.04.2017 more than 6 month after stroke

petrovivo@hotmail.com


F


F



ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

Case II

Gender: male, 66y., late acute stroke comer (Aphasic and left side hemiplegic since 23 hours, Systemic thrombolysis resulted inefective)

NIHHSS= 18 (Major stroke)

Concomitant disease:

- 2 vessel coronary disease, history of LAD PCI, 6 y. before
- Arterial hypertension II grade, dyslipidemia, smoker

Vascular access: ***Right femoral artery, Shuttle sheath 6F***

Target carotid artery: LICA- nearly full thrombosis

Primary distal protection system: *Spider 5.0 after recanalization with coronary microcatheter and distal confirmation*

Implanted stent:

After predilatation Tapered X-Act 8-6/40mm.

Postdilatation:

Double protection (thrombus containing lesion) + balloon Paladin 5.0/20 mm.

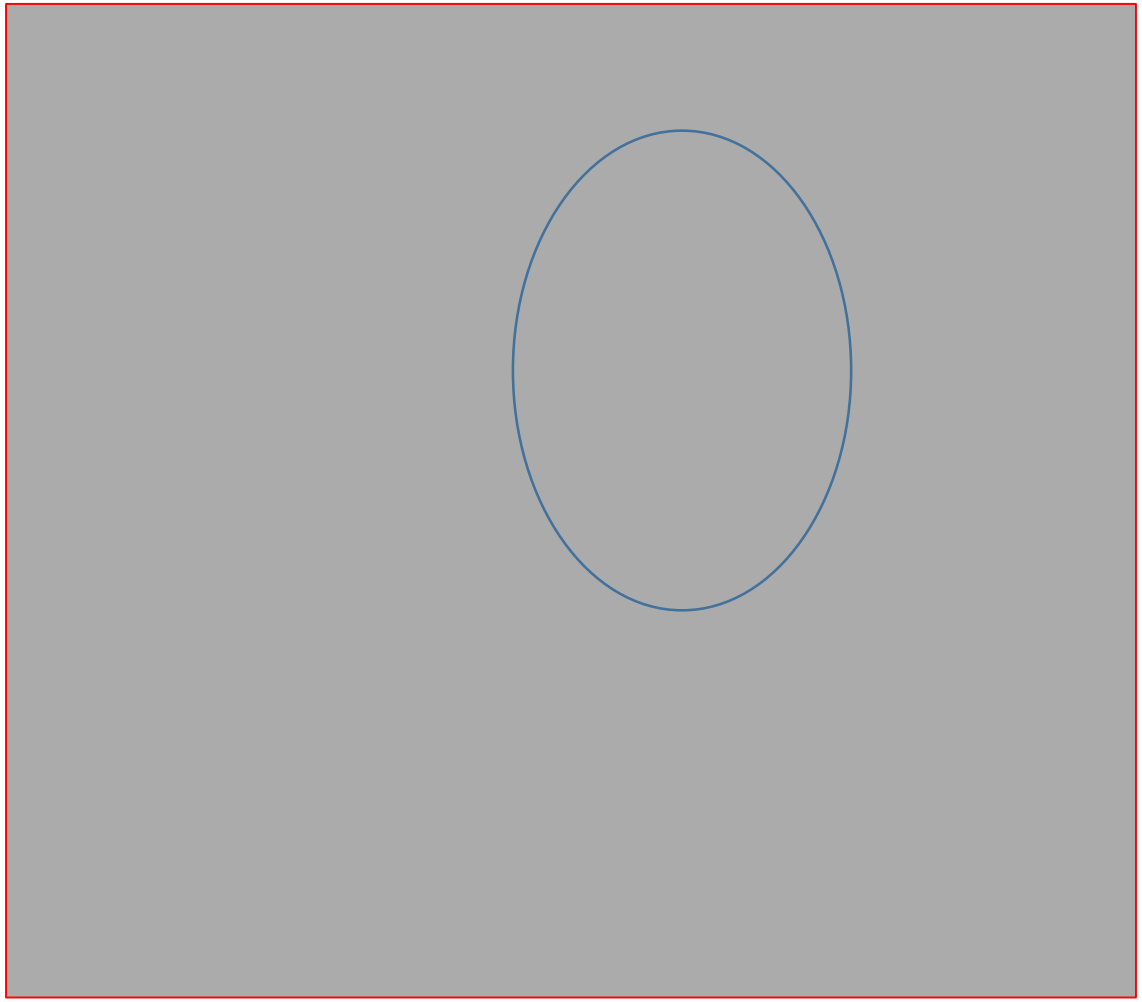
petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

LICA near occlusion (subacute thrombosis)



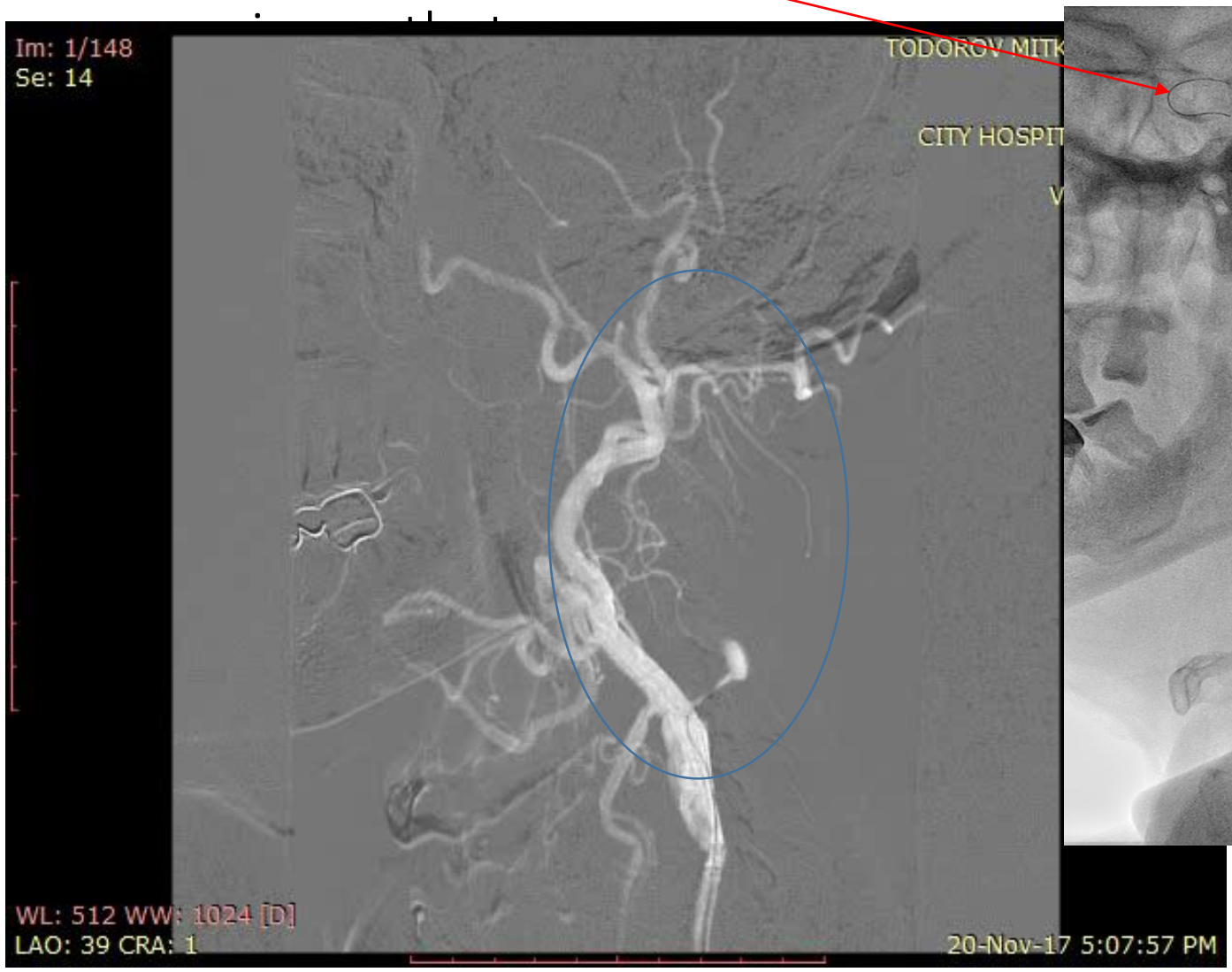
petrovivo@hotmail.com

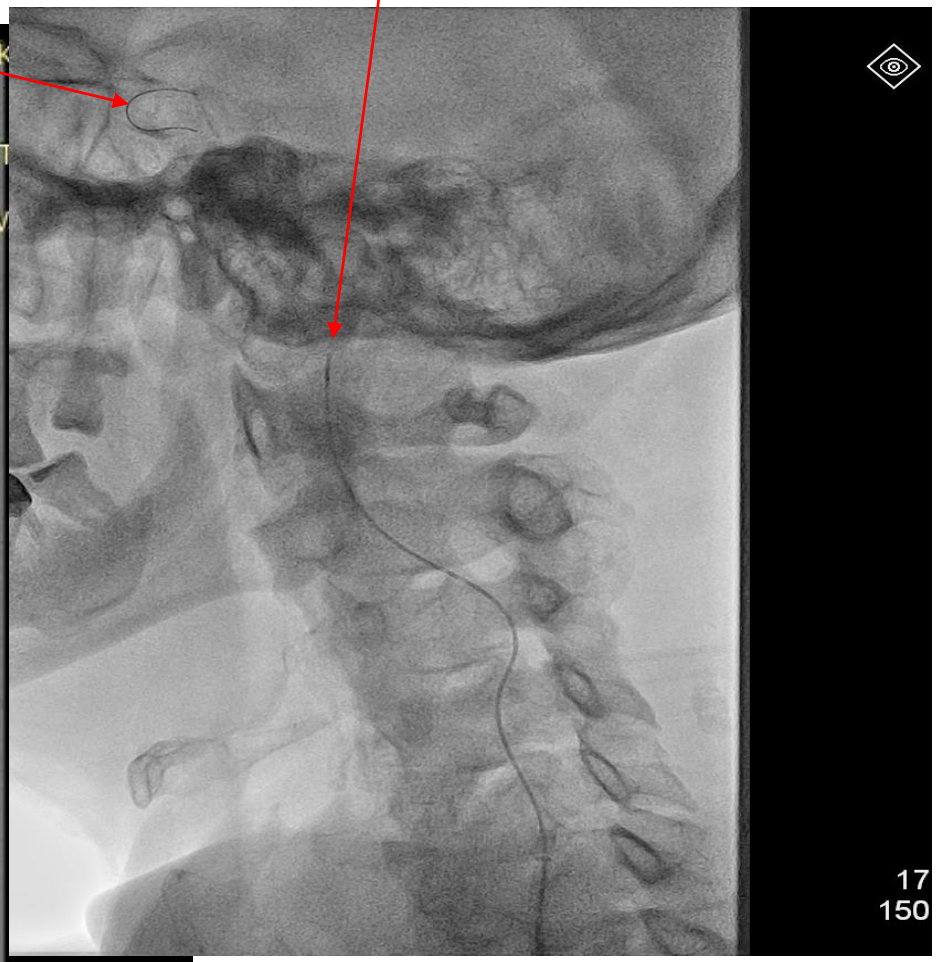
ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

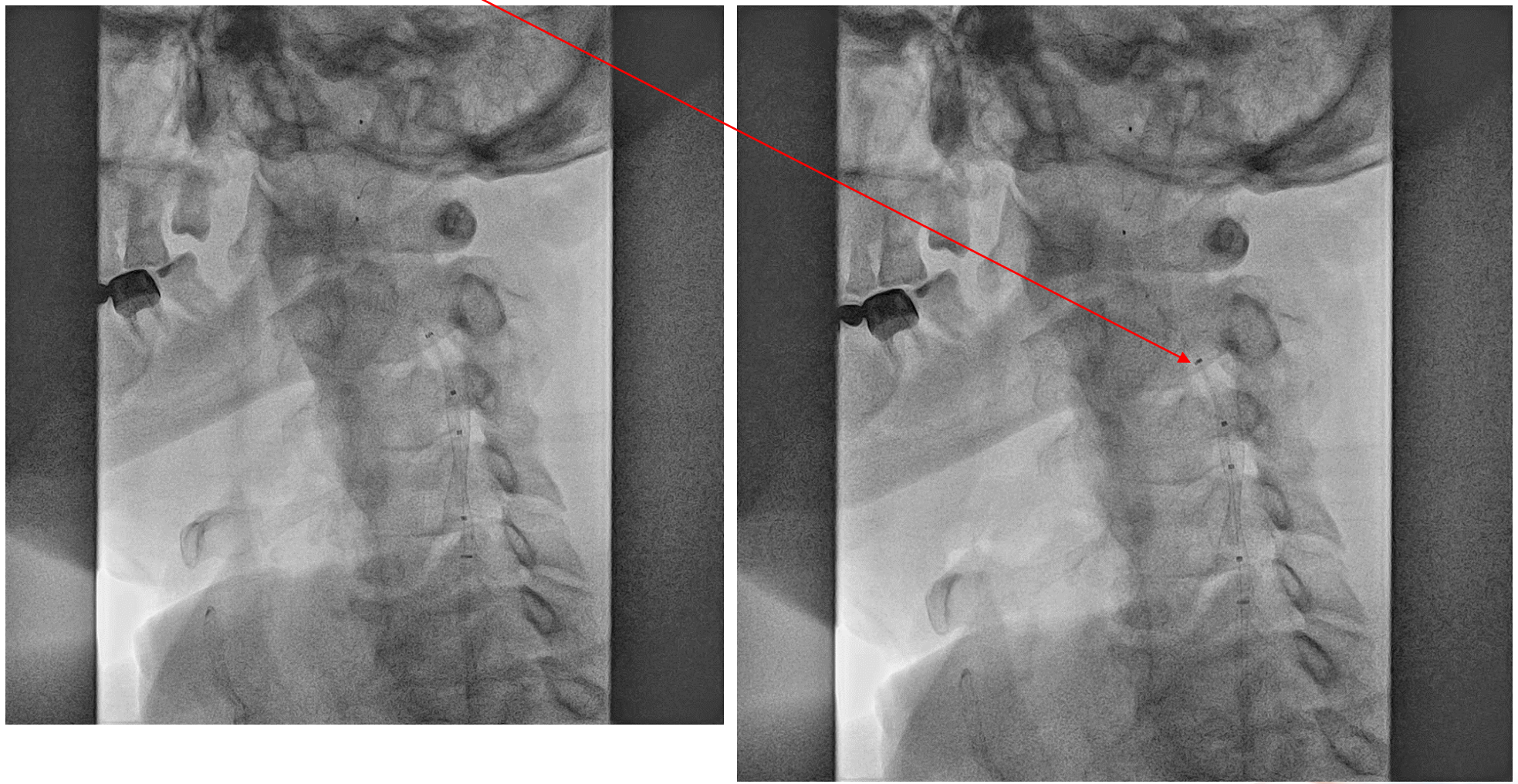
.014 Runthrough Hypercoat supported by FineCross





petrovivo@hotmail.com

“Double filter” protection (thrombus containing lesion) postdilation Paladin (Contego) 5.0/20mm:

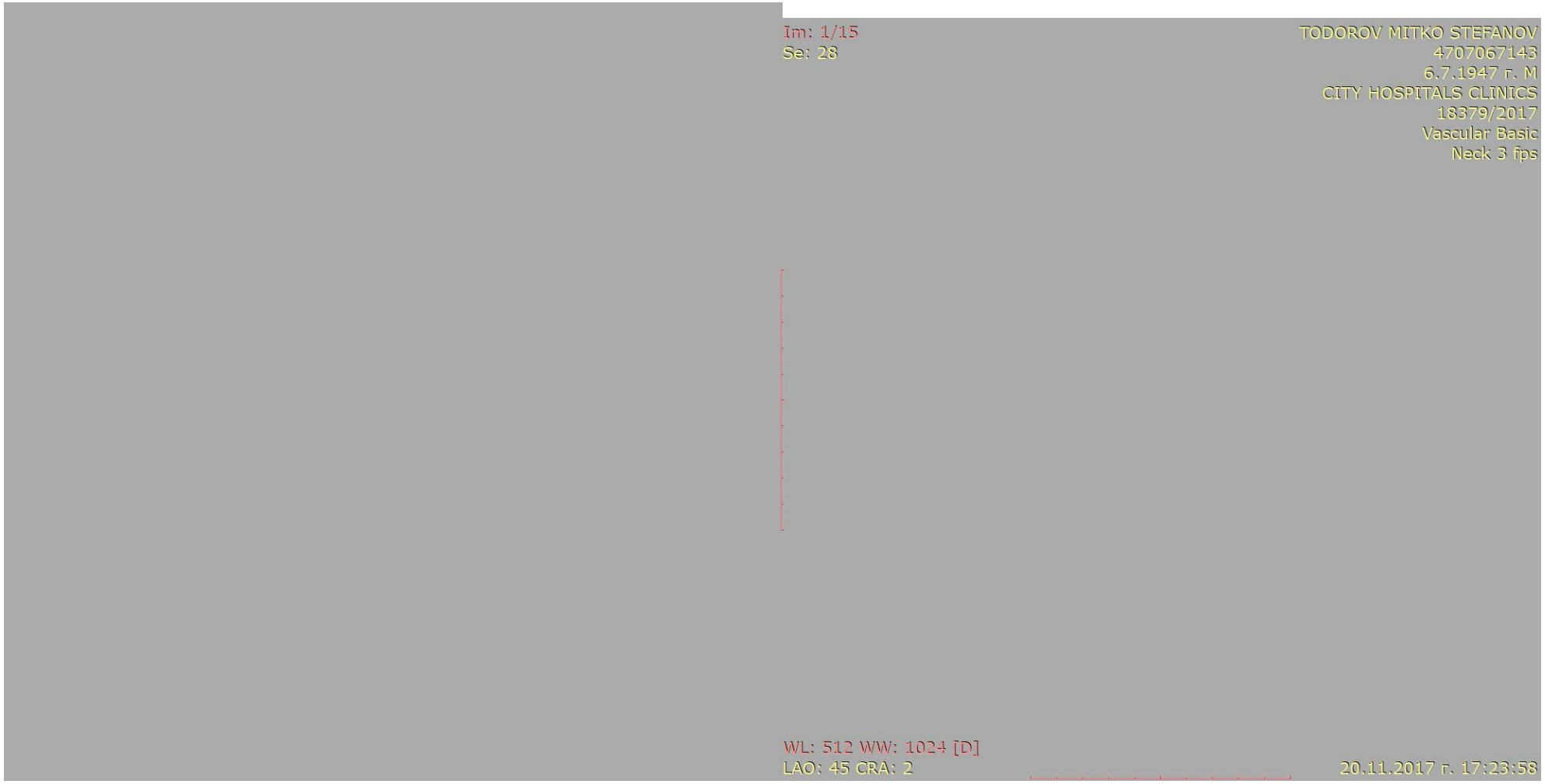


petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST



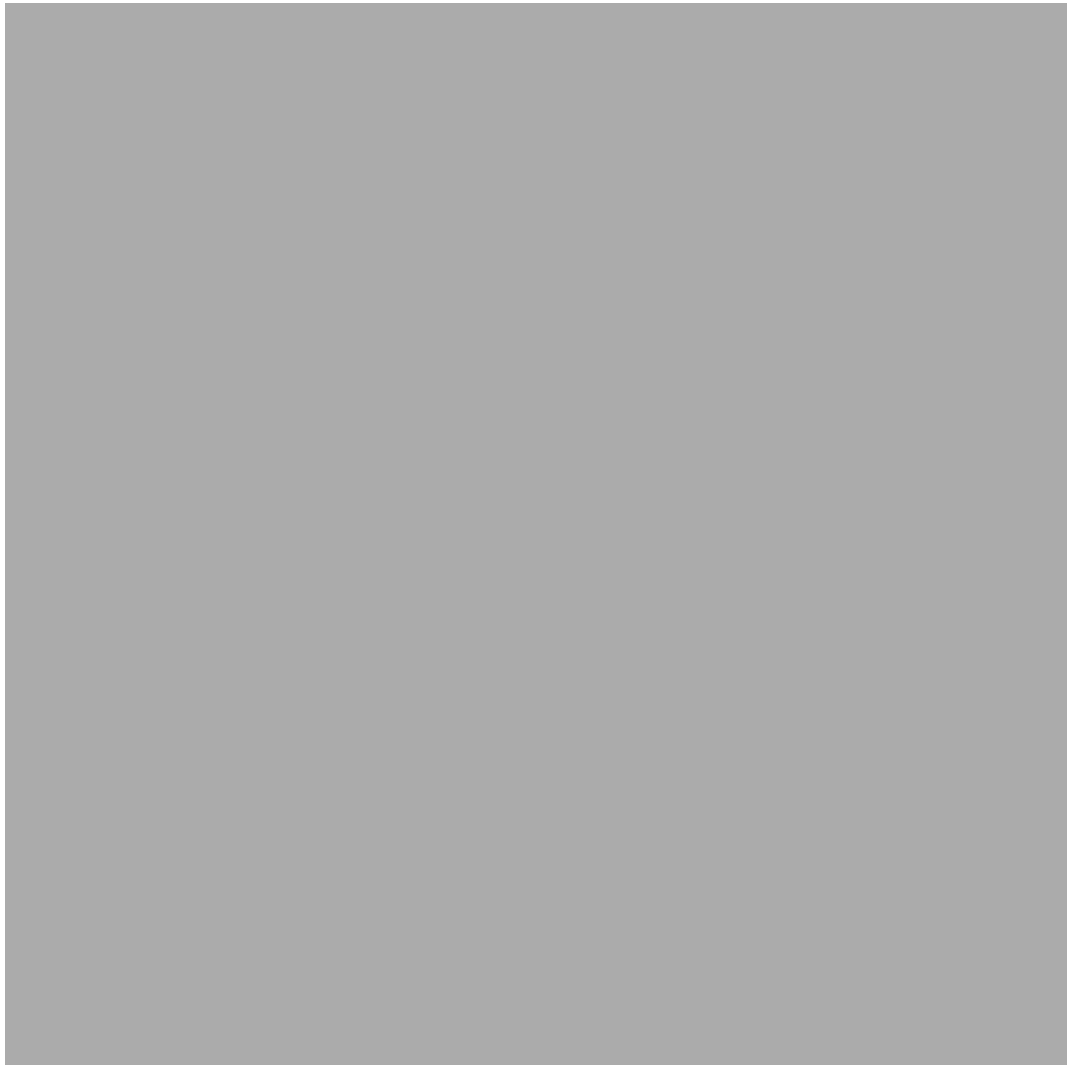
petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

TICI-III flow with normalized parenchymal phase



petrovivo@hotmail.com

Clinical course

- Speech restored immediately after intervention
- NIHSS= 4 at 30 days after (mild right hemiparesis and hemihypoestesia)

petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

17years girl 3 days after open heart ASD plasty

petr


Doncheva,Stanislava Nikolaeva
ID: 20190308/513
* 10.05.2001 , F
Study 8.0.44358849
08.03.2019
13:58:03
1010000 IMA 19 FRM 9
National Cardiology Hospital
Ref.: ,,,,
DFP-8000D
Coronary /Carotid
SINGLE PLANE\DSA\ACQ
CRA 3
RAO 23
W: 255
C: 128

Discussion (1)

- Pathophysiologic and anatomic similarities between acute MI and cerebral stroke
- Majority of endovascular methods to recanalize culprit artery require skills very close to skills necessary for pPCI (tortuous vessels navigation, wires and catheters manipulation, thrombaspiration, interventions under fluoroscopic control) interventional cardiologists are familiar
- Primary PCI programs are very well established on international level and huge number of interventional cardiologists all over the world are 24/7 available
- Majority of patients with stroke require strict hemodynamic assessment and cardiology evaluation (1/3d of strokes are cardio-embolic)

petrovivo@hotmail.com

White et al., Acute stroke intervention. JACC Vol. 58, No. 2, 2011

Discussion (2)

- Currently, neurointerventionists on an average, perform 8 stroke interventions per year(1).
- Cardiologists are familiar and apply on daily basis different totally percutaneous low profile approaches (femoral, radial, brachial) facilitating the endovascular stroke treatment and reducing vascular complications

1. Meyers PM, Schumacher HC, Connolly Jr ES, et al. Current. status of endovascular stroke treatment. Circulation. 2011;123(22):2591-2601.
2. Widimsky P. Feasibility and safety of direct catheter-based thrombectomy in PRAGUE-16. August 27, 2016. Rome, Italy; 2016.
3. Kilic ID, Goktekin O. The current status of endovasculartreatment for acute ischaemic stoke. EuroIntervention. 2016, 12(2). [Editorial].

petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

Conclusions

ICCA STROKE 2019

WIST

- Training guidelines for stroke interventionalists will need to be established by interdisciplinary cooperation and consensus.
- Target groups for training in stroke EVT have to be among all specialties dealing with carotid interventions such as: vascular surgeons, interventional radiologists, neuroradiologists, neurosurgeons, interventional cardiologists
- Only working together, braking prejudices and old boundaries will lead us to the right way in treatment of stroke
- The successful model of STEMI network and telemedicine is probably the key for success in reducing the devastating natural outcomes of stroke worldwide

petrovivo@hotmail.com

ACIBADEM CITYCLINIC
CARDIOVASCULAR CENTER

ICCA STROKE 2019

WIST

धन्यवाद

petrovivo@hotmail.com


धन्यवाद
Visit Bulgaria! Rila mountain’s lakes