ICCA STROKE 2019

WIST

Who should do acute stroke interventions? "The position of European Cardiologist"

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DISCLOSURE STATEMENT OF FINANCIAL INTEREST

Within the past 12 months, I or my spouse/partner have had a financial interest/arrangement or affiliation with the organization(s) listed below

AFFILIATION/FINANCIAL RELATIONSHIP	COMPANY
• Grant/Research Support • Consulting Fees/Honoraria	• Boston Scientific • Edwards Lifesciences • Medtronic • Abbott

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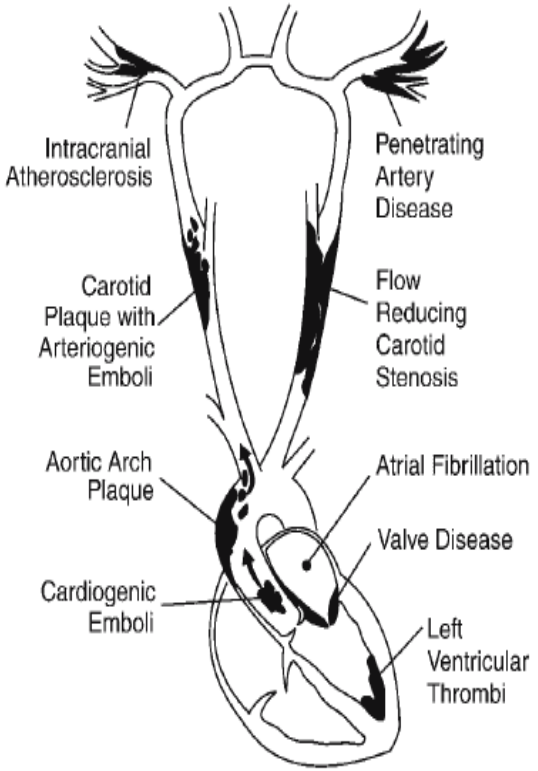
Disclosure Statement of Financial Interest

I, Jan Kovac 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.

Causes of Ischaemic Stroke

- Cardioembolism (35%)
- Large vessel disease (20%)
  - Artery-to-artery embolism
  - Intracranial Atherosclerosis
  - Haemodynamic (reduced flow)
- Small vessel disease (15%)
- Other known (5%)
  - Dissections
  - Hypercoagulable states
  - Multiple other rare causes
- Unknown (25%)



‚Other' Stroke Interventions

- Ischaemic stroke is 3-5 times more common than intracerebral hemorrhages
- Intracerebral haemorrhage causes 3-4 times higher case-fatality rates than ischaemic strokes
- Oral anticoagulants are associated with the deadliest/disabling stroke types, i.e. anticoagulant related intracerebral haemorrhages
- Microbleeds and other high ICH risk features can be found in most anticoagulant related intracerebral haemorrhages
  - Patients at high risk for anticoagulant related ICH can be predicted
  - Anticoagulant sparing preventive treatments might be considered for such patients (LAAC, PFO closure)

Requirement for opening a new thrombectomy centre (MT only)

- 24/7 Vascular neurologist (on call?)
- 24/7 Interventionist
- 24/7 CTA/CTP, MRA/MRP
- 24/7 Angio room
- 24/7 Anesthesiologist
- 24/7 Neurosurgeon ?

With Acknowledgement to Christophe Cognard

Sobering Thoughts for Interventional Cardiologists

- Numbers of MT much smaller than for cardiology

- Need less centres but with enough interventionists
- (at least 4, better 7?)

- With sizeable volumes (> 200/Y)

- Stroke dedicated angio room

- Better transport organization

Heart Brain Interventionist 2018?

- Mechanical Thrombectomy (Pivotal, but not limited to!)
- LAA Closure
- Closure of Septal Defects (PFO/ASD)
- Embolic Protection for Cardiac Interventions

Are Our Patients Served Well?

Original research article

EUROPEAN STROKE JOURNAL

European Stroke Journal
0(0) 1–16

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Access to and delivery of acute ischaemic stroke treatments: A survey of national scientific societies and stroke experts in 44 European countries

Diana Aguiar de Sousa*[1], Rascha von Martial*[2], Sònia Abilleira[3], Thomas Gattringer[4], Adam Kobayashi[5], Miquel Gallofré[6], Franz Fazekas[4], Istvan Szikora[7], Valery Feigin[8], Valeria Caso[9] and Urs Fischer[2]; on behalf of the ESO ESMINT EAN SAFE Survey on Stroke Care collaborators[†]

Results of the Survey on Stroke

- **44 countries in Europe**

- **no plans for EVT availability in place in 20 of them...!**

- **IV thrombolysis: 142 patients / million**
- **(1 stroke unit / 280 000 population)**
- **7.3% of ischemic stroke patients received IVTL**

- **Endovascular treatment: 37 patients / million (1 MT center / 1,1 million population, limited availability of 24/7 thrombectomy service)**
- **Only 1.9% ofeligible ischemic stroke patients received EVT !**

- **34 countries reported lack of EVT-trained personnel as the main reason for limited availability !**

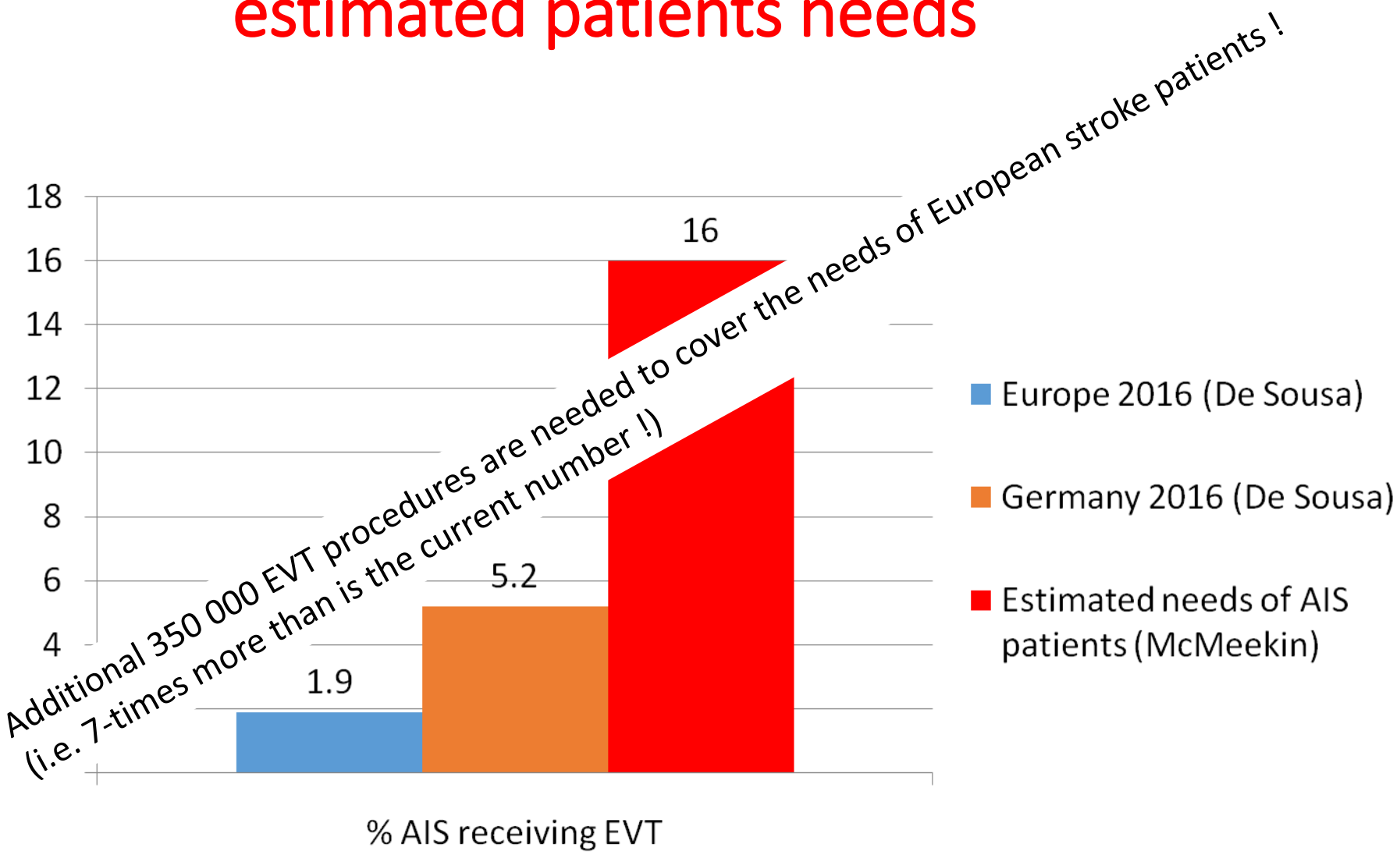
The number of stroke patients eligible for MT in UK

McMeekin P et al., Eur Stroke J 2017, 2: 319-26.

- Evidence from randomised trials and registries used to estimate UK stroke incidence and endovascular thrombectomy eligible population.
- Most patients present within 4 h of onset (suitable for iv. thrombolysis).
- Advanced imaging exclude 500 patients presenting within 4 h, but identify an additional 1310 late presenters patients as eligible for EVT.
- Assuming national endovascular thrombectomy coverage, 4280 UK patients would have reduced disability every year.

- **Approximately 10% of all stroke admissions in the UK are eligible for endovascular thrombectomy.**
- **Advanced imaging could alter eligibility status for 16% of cases !**

Current MT availability in Europe versus estimated patients needs



Original research article

EUROPEAN STROKE JOURNAL

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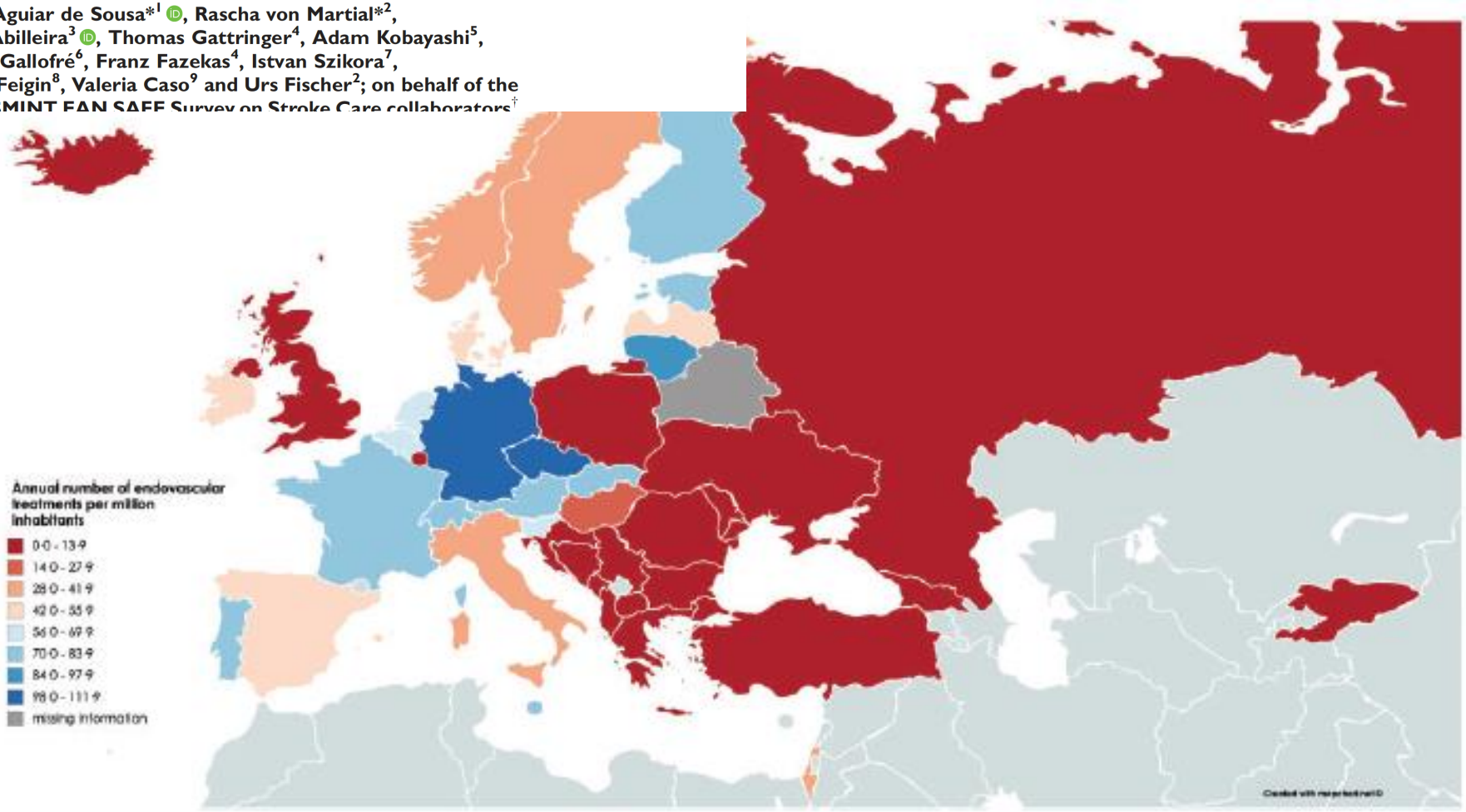
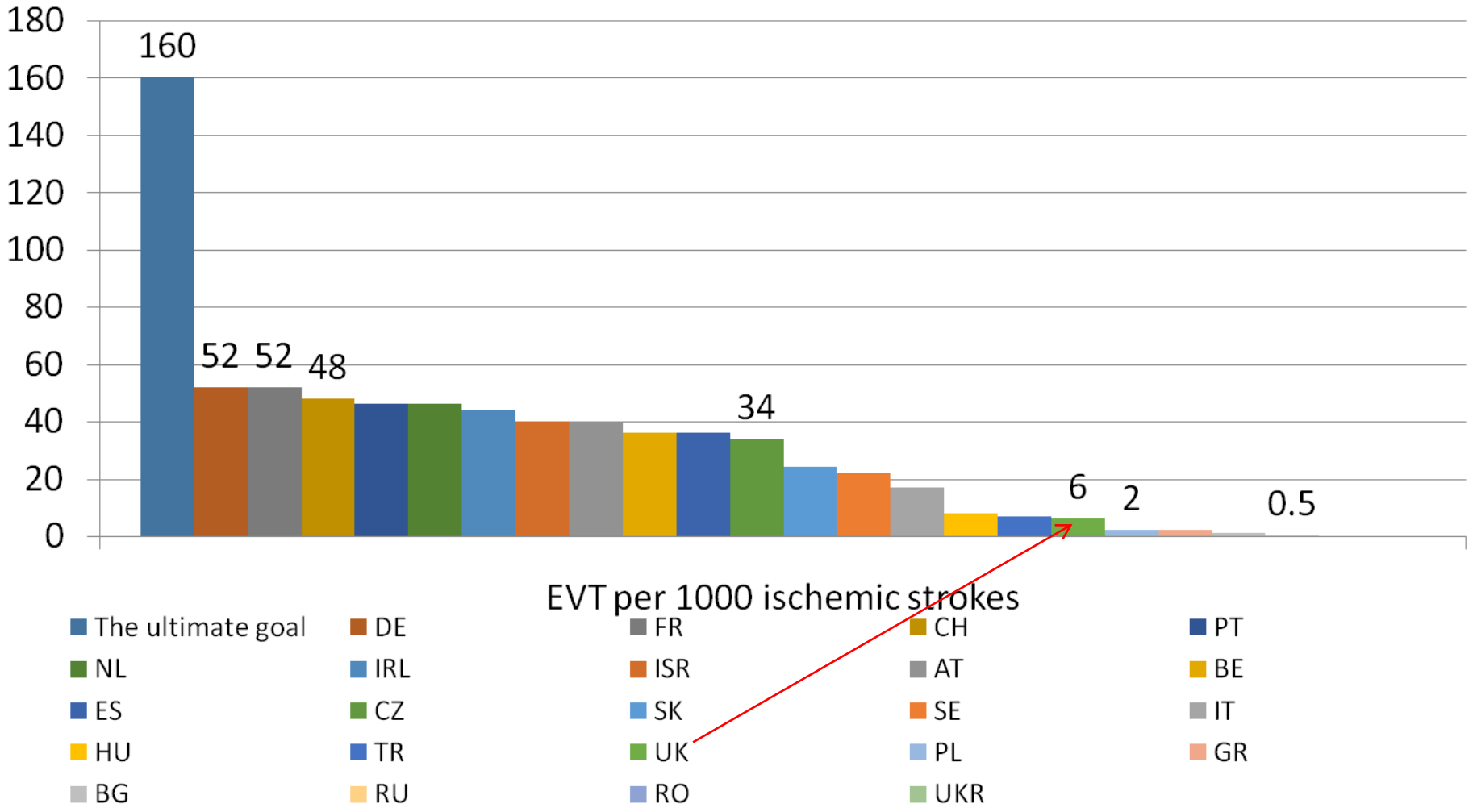


Figure 5. Choropleth map showing contemporary annual rates of endovascular treatments (EVT) for ischaemic stroke per million population in 43 European countries (mean 37.1, 95% CI 26.7–47.5).

Thrombectomy in France -Mature System

- MT only done in comprehensive INR centres
- Only by fully trained INR specialists
- 70% imaging done by MR
- 50 % MT done under GA

Number of thrombectomy (MT) procedures per 1000 ischemic strokes



Stroke Demographics in the US

Number of states with Comprehensive stroke centers (CHS)	26
Number of states with 4 or more CHS	8
Percent of world's population living in rural areas	54%
Number of Neurointerventionists in cities < 150,000	~0
Number of ischemic strokes in US in 2012	~830,000
Number of mechanical thrombectomies in US in 2017	~25,000
Number of Neurointerventionists in US treating stroke -most clustered in Comprehensive stroke centres	~700
Number of Cardiac interventionists in US	>8000

EuroIntervention 2017;13:1269-1272

When will acute stroke interventions be as widely available as primary PCI?

Petr Widimsky*, MD, DrSc, FESC, FACC

Cardiocenter, University Hospital Kralovske Vinohrady and Third Faculty of Medicine, Charles University, Prague, Czech Republic

Obstacles and limitations of acute stroke thrombectomy availability.

- **The nature of acute ischemic stroke**
- **The complexity of multidisciplinary stroke care**
- **The lack of trained neurointerventionalists**
- **The turf battles between medical specializations**

Turf battles

- **Neurointerventionalists protect their "field of interest" from the influx of other specialties**
- **Result: outcomes may (?) be excellent - <u>but only for a few patients.</u>**

<u>Major dilemma:</u>

- **Fast and broad implementation of mechanical thrombectomy for many patients at the price of less excellent results**

versus

- **Slow evolution and selective care for fewer patients with better results in those lucky enough to receive such care.**

The ESC Council on Stroke view

- **Open interdisciplinary discussion.**
- **Interventional cardiologists (with carotid stenting experience) could easily learn to perform acute stroke interventions after a much shorter period (3 months?) of neuroradiology training.**
- **From the patient's perspective, this is the only way to quickly offer this effective treatment for acute stroke to the broad European population.**
- **I do hope that representatives of the respective medical specialties will place patient interests first and foremost and forget about the unnecessary turf battles.**

EuroIntervention 2017;13:131-136 published online jgg February 2017

Feasibility and safety of direct catheter-based thrombectomy in the treatment of acute ischaemic stroke. Cooperation among cardiologists, neurologists and radiologists. Prospective registry PRAGUE-16

Petr Widimsky*, MD, DrSc; Boris Koznar, MD, PhD; Tomas Peisker, MD, PhD; Peter Vasko, MD, PhD; Filip Rohac, MD; Jana Vavrova, MD; Josef Kroupa, MD; Ivana Stetkarova, MD, PhD

Charles University, Third Faculty of Medicine, University Hospital Kralovske Vinohrady, Prague, Czech Republic

This paper also includes supplementary data published online at: http://www.pcronline.com/eurointervention/116th_issue/16

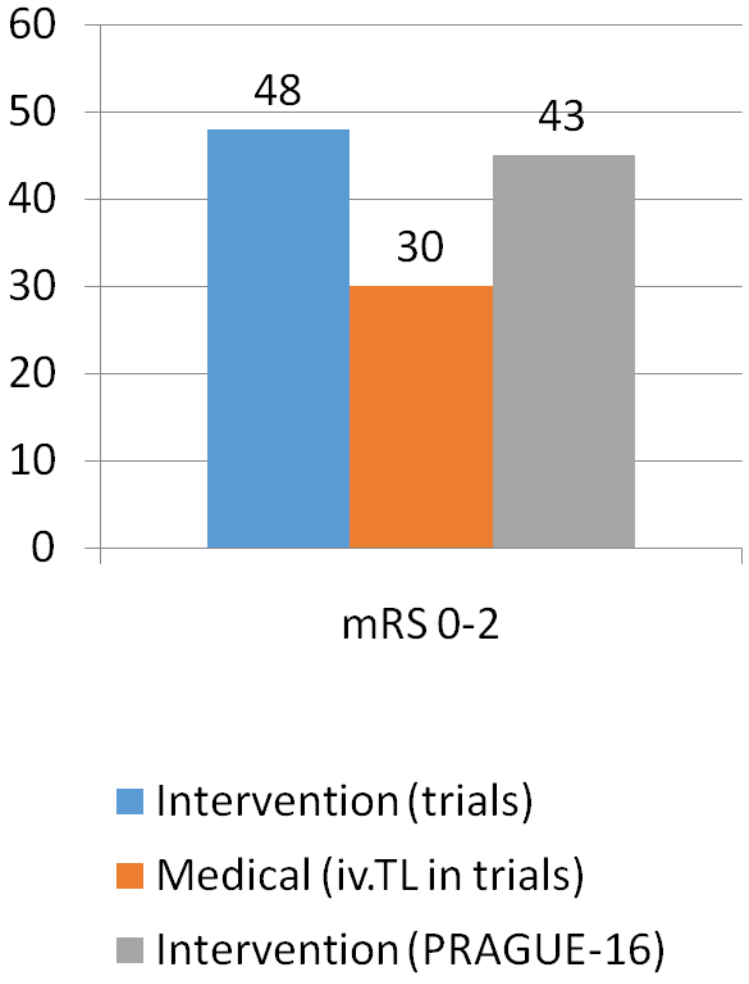
Table 5. Outcomes and complication rates – comparison with intervention arms of MR-CLEAN and REVASCAT (trials with similar inclusion criteria - except for posterior stroke exclusion).

	PRAGUE-16	MR-CLEAN	REVASCAT
Stroke location	Any	Anterior	Anterior
Imaging selection	CT(-A)	CT(-A)	ASPECTS 7-10
Mean age, years	66	66	66
Mean admission NIHSS	17	17	17 (median)
7-day mortality	12%	12%	10%
3-month mortality	35%	19%	18%
mRS ≤2 at 3 months	40%	33%	44%
Any SICH	4%	8%	10%
Periprocedural complications (all)	10%	9%	14%
New ischaemia in other territory	3%	6%	5%
Vessel dissection or perforation	5%	3%	9%

SICH: symptomatic intracranial haemorrhage (for definition see Methods section).

PRAGUE experience vs. data from large trials

	Intervention + medical therapy (recovered / all patients)	Medical therapy alone (recovered / all patients)
MR CLEAN	77 / 233	51 / 267
ESCAPE	89 / 164	43 / 147
EXTEND IA	25 / 35	14 / 35
SWIFT PRIME	59 / 98	33 / 93
REVASCAT	45 / 103	29 / 103
THERAPY	17 / 41	12 / 41
THRACE	103 / 190	82 / 195



What can the cardiologists do

Big centre ≥ 4 Neuroradiologists able to perform 24/7 stroke program:

- Give a hand with logistics
- Priority access to cathlab (Stroke before AMI)
- Help to 'push' administration
- Make sure multiphase CT available

Smaller centre ≤ 3 Neuroradiologists, unable to perform 24/7 stroke program:

- Team - building (not team - leading) cardiologist with neurologist and neuroradiologist
- Humble studying anatomy and technique; get certified
- Get scrubbed wiht neuroradiologists
- Priority access to cathlab (Stroke before

Heart Brain Interventionist 2018?

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Heart & Stroke 2020

The international conference of the ESC Council on Stroke

24-25 January 2020

Barcelona, Spain

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and join this interdisciplinary exchange