Agenda DISCO Investigator meeting November 12

Welcome and presentation of participants
Sten

Study update
Sten

ESC Guidelines-impact on DISCO
Stefan

Pearl study
Stefan

Netherlands-update
Judith or Niels

France-update
Christian S or Alain

Denmark-update
Christian JT

Neurologic follow-up and Prognostication
Tobias, Ing-Marie or Ewa

Questions addressed by the sites
All

Summary

Study update

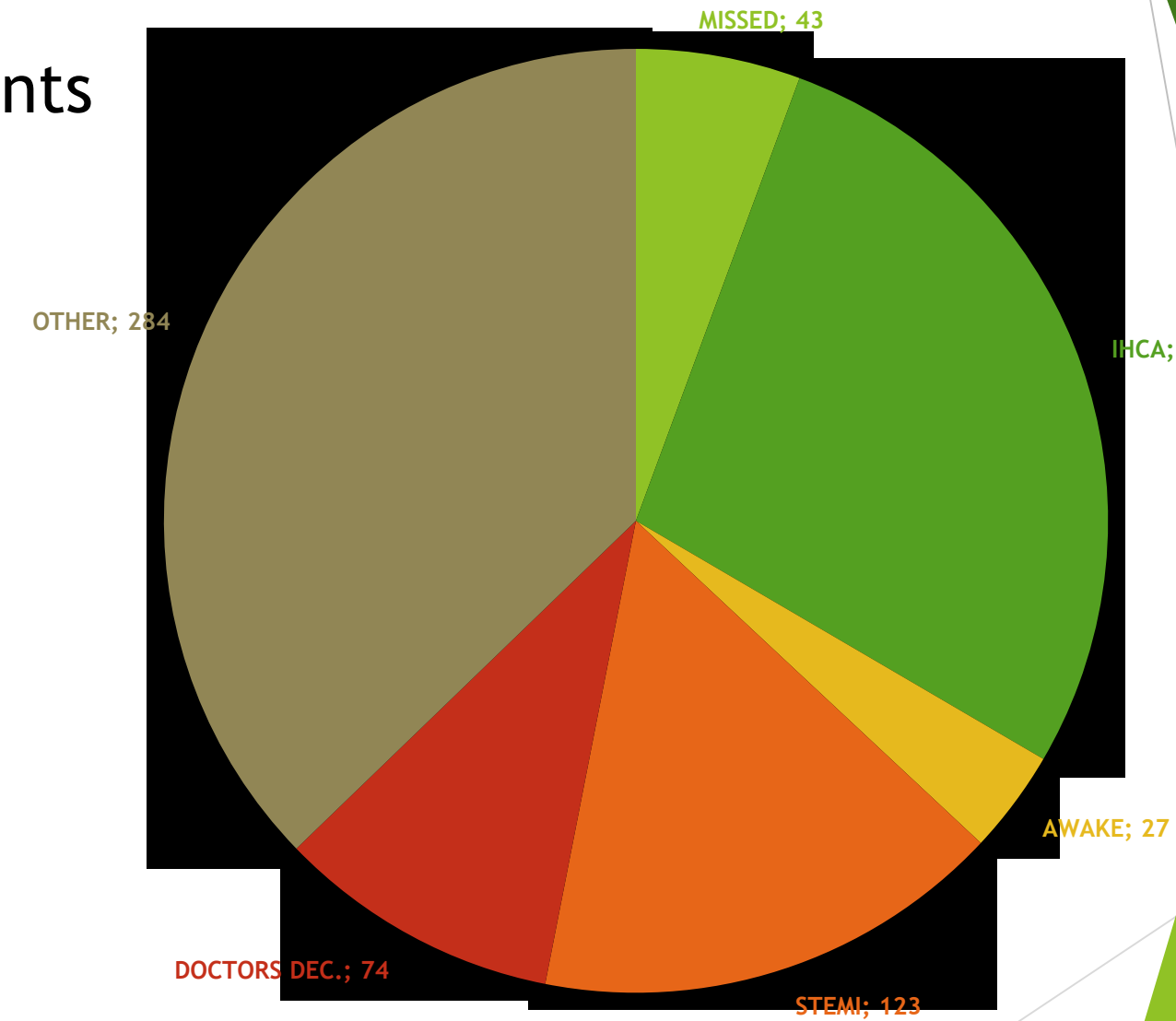
Cardiac arrests Screening- possible inclusion into DISCO

947 patients

since main study start March 2018

Screening

763 excluded patients

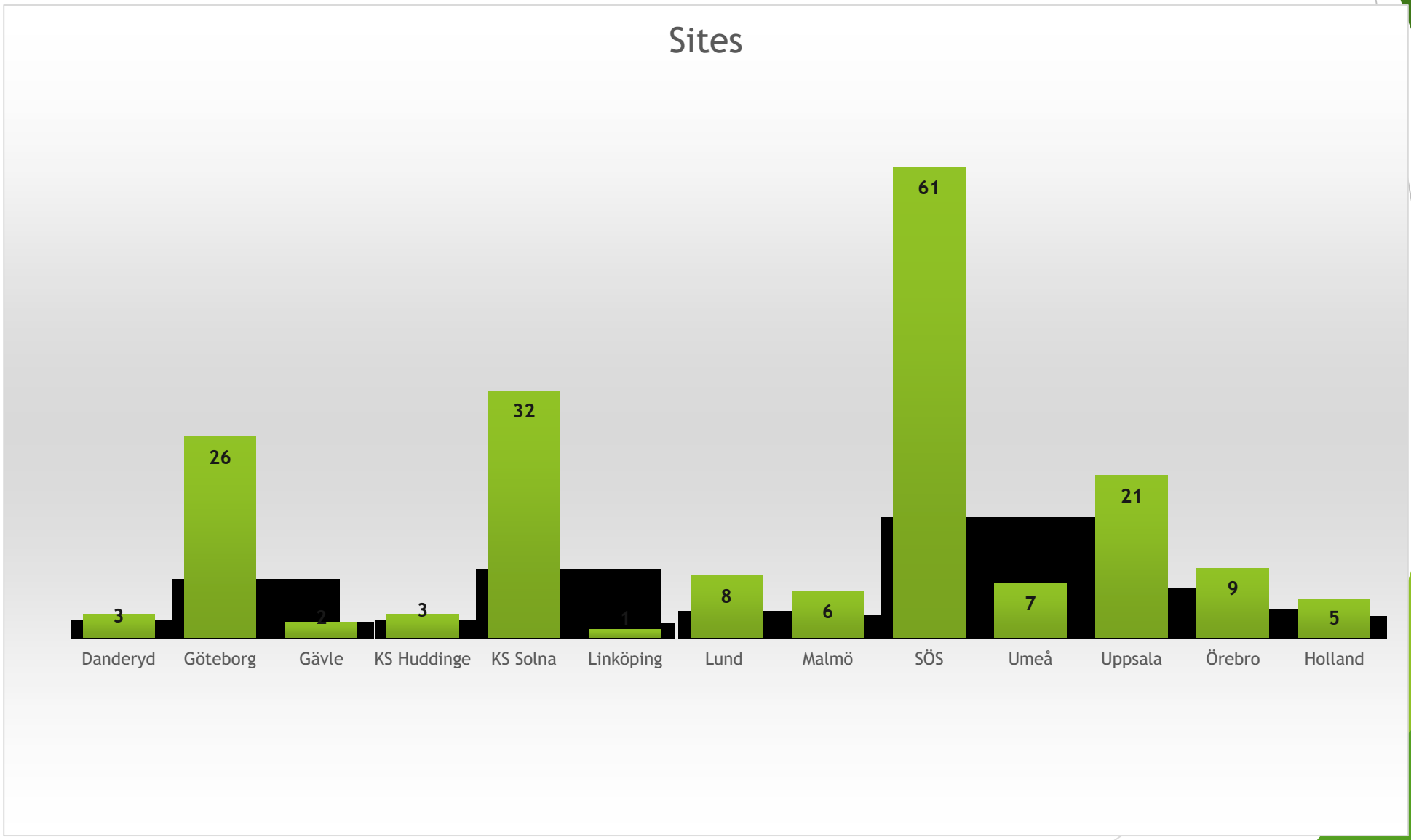


OTHER and DOCTORS DECISION

- **ANGIO-DOCTORS DECISION**
- **UNWITNESSED**
- **ARRHYTHMIA**
  PEA
- **NON-CARDIAC**
  HYPOXIA
  INTOXICATION
- **DNR**
- **ADMITTED FROM OTHER HOSPITAL**

Study Update

Included patients 184



ESC Guidelines-impact on DISCO

Stefan James

2020 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation

ESC European Society of Cardiology

Task Force Members:

Jean-Philippe Collet (Chairperson) (France), **Holger Thiele (Chairperson) (Germany),**
Emanuele Barbato (Italy), Olivier Barthélémy (France), Johann Bauersachs (Germany),
Deepak L. Bhatt (United States of America), Paul Dendale (Belgium), Maria Dorobantu (Romania),
Thor Edvardsen (Norway), Thierry Folliguet (France), Chris P. Gale (United Kingdom), Martine Gilard (France),
Alexander Jobs (Germany), Peter Jüni (Canada), Ekaterini Lambrinou (Cyprus), Basil S. Lewis (Israel),
Julinda Mehilli (Germany), Emanuele Meliga (Italy), Béla Merkely (Hungary), Christian Mueller (Switzerland),
Marco Roffi (Switzerland), Frans H. Rutten (Netherlands), Dirk Sibbing (Germany),
George C. M. Siontis (Switzerland)

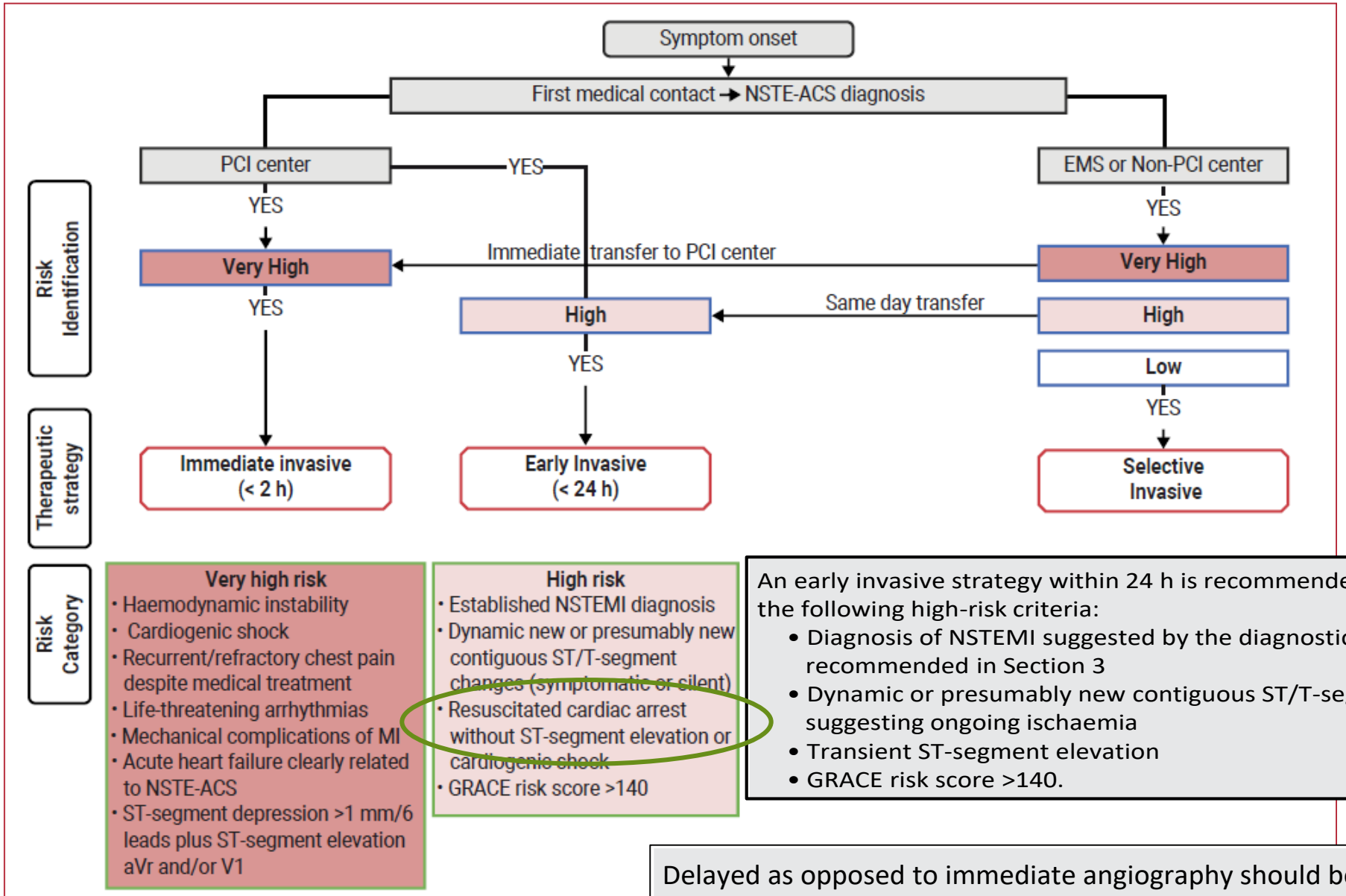


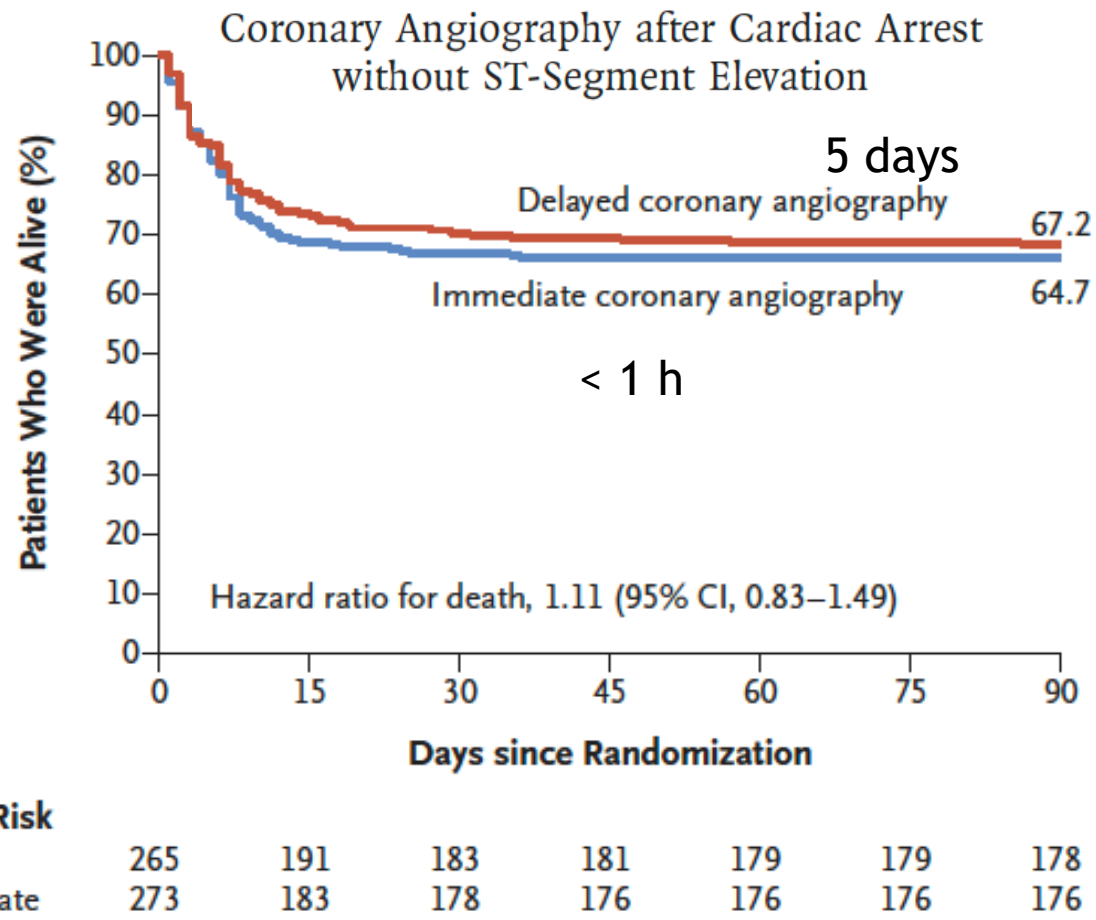
Figure 9 Selection of non-ST-segment elevation acute coronary syndrome treatment strategy and

An early invasive strategy within 24 h is recommended in patients with any of the following high-risk criteria: • Diagnosis of NSTEMI suggested by the diagnostic algorithm recommended in Section 3 • Dynamic or presumably new contiguous ST/T-segment changes suggesting ongoing ischaemia • Transient ST-segment elevation • GRACE risk score >140.	I	A
Delayed as opposed to immediate angiography should be considered among haemodynamically stable patients without ST-segment elevation successfully resuscitated after out-of-hospital cardiac arrest.	IIa	B

COACT

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE



No. at Risk							
Delayed	265	191	183	181	179	179	178
Immediate	273	183	178	176	176	176	176

Invasive coronary treatment strategies for out-of-hospital cardiac arrest: a consensus statement from the European Association for Percutaneous Cardiovascular Interventions (EAPCI)/Stent for Life (SFL) groups

Marko Noc[1], MD; Jean Fajadet[2], MD; Jens F. Lassen[3], MD; Petr Kala[4], MD; Philip MacCarthy[5], MD; Goran K. Olivecrona[6], MD; Stephan Windecker[7], MD; Christian Spaulding[8]*, MD

Abstract

Due to significant improvement in the pre-hospital treatment of patients with out-of-hospital cardiac arrest (OHCA), an increasing number of initially resuscitated patients are being admitted to hospitals. Because of the limited data available and lack of clear guideline recommendations, experts from the EAPCI and "Stent for Life" (SFL) groups reviewed existing literature and provided practical guidelines on selection of patients for immediate coronary angiography (CAG), PCI strategy, concomitant antiplatelet/anticoagulation treatment, haemodynamic support and use of therapeutic hypothermia. Conscious survivors of OHCA with suspected acute coronary syndrome (ACS) should be treated according to recommendations for ST-segment elevation myocardial infarction (STEMI) and high-risk non-ST-segment elevation -ACS (NSTE-ACS) without OHCA and should undergo immediate (if STEMI) or rapid (less than two hours if NSTE-ACS) coronary invasive strategy. Comatose survivors of OHCA with ECG criteria for STEMI on the post-resuscitation ECG should be admitted directly to the catheterisation laboratory. For patients without STEMI ECG criteria, a short "emergency department or intensive care unit stop" is advised to exclude non-coronary causes. In the absence of an obvious non-coronary cause, CAG should be performed as soon as possible (less than two hours), in particular in haemodynamically unstable patients. Immediate PCI should be mainly directed towards the culprit lesion if identified. Interventional cardiologists should become an essential part of the "survival chain" for patients with OHCA. There is a need to centralise the care of patients with OHCA to experienced centres.

Noc et al EuroIntervention. 2014 May;10(1):31-7

DISCO

DIrect or Subacute
Coronary angiography
for Out of hospital
cardiac arrest a
randomized study

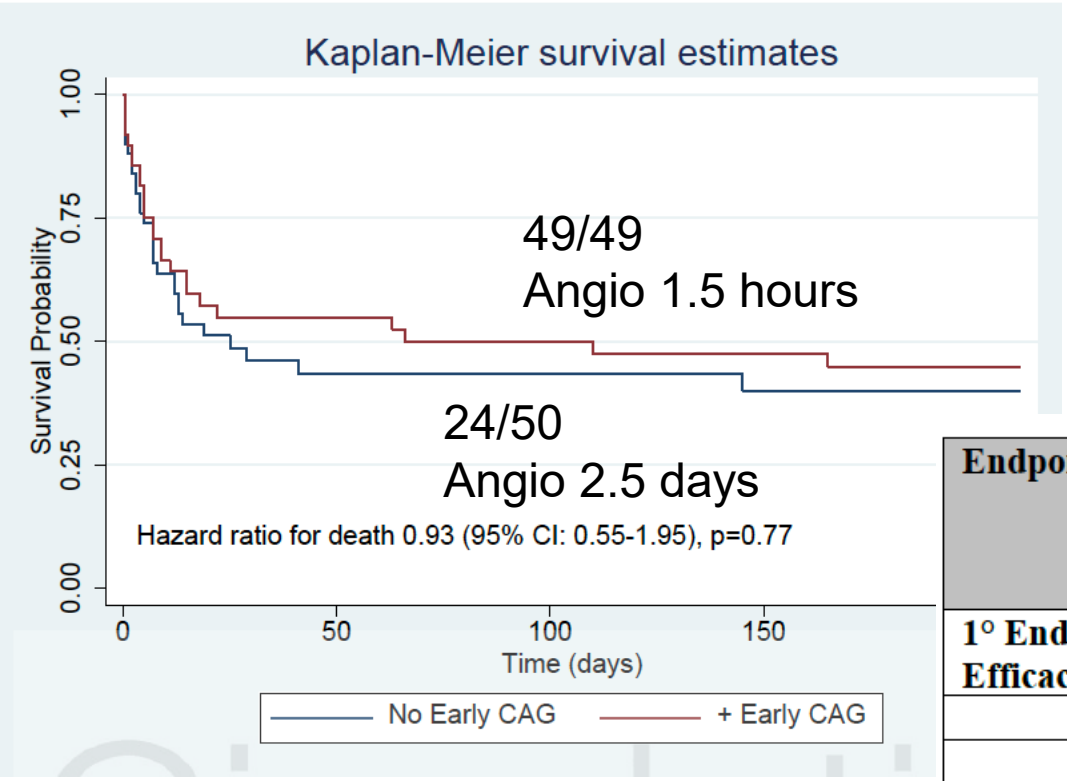
10.1161/CIRCULATIONAHA.120.049569

A Randomized Pilot Clinical Trial of Early Coronary Angiography Versus No Early Coronary Angiography for Post-Cardiac Arrest Patients Without ST-Segment Elevation: The PEARL Study

Running Title: *Kern et al.; Angiography in Resuscitated Patients Without ST Elevation*

Karl B. Kern, MD[1]; Peter Radsel, MD, PhD[2]; Jacob C. Jentzer, MD[4]; David B. Seder, MD[3]; Kwan S. Lee, MD[1]; Kapildeo Lotun, MD[1]; Rajesh Janardhanan, MD[1]; Dion Stub, MD, PhD[5]; Chiu-Hsieh Hsu, PhD[6]; Marko Noc, MD, PhD[2]

Conclusions: This underpowered study, when considered together with previous clinical trials, does not support early coronary angiography for comatose survivors of cardiac arrest without ST elevation. Whether early detection of occluded potential culprit arteries leads to interventions that improve outcomes requires additional study.



Primary EP

Composite of efficacy and safety measurements, including efficacy parameters of survival to discharge, favorable neurological status at discharge (Cerebral Performance Category < 2), echocardiographic measures of left ventricular ejection fraction >50% and a normal regional wall motion score of 16 within 24 hours of admission

Endpoint	Early coronary angiography (n=49)	No early coronary angiography (n=50)	P*
	Freq (%)	Freq (%)	
1° Endpoint of Combined Efficacy and Adverse Events	**27 (55.1%)**	**23 (46.0%)**	0.64
Composite efficacy	**36† (73.5%)**	**30† (60.0%)**	0.20
Survival to DC	27 (55.1%)	24 (48.0%)	0.55
Normal WMSI at admission	9 (19.6%) (n=46)	12 (25.5%) (n=47)	0.62
LVEF ≥50% at admission	19 (40.4%) (n=47)	16 (34.0%) (n=47)	0.67
Intact functional status at DC	25 (51.0%)	23 (46.0%)	0.69
Composite Adverse Events	**13 (26.5%)**	**13 (26.0%)**	1.00
Re-arrest	3 (6.1%)	3 (6.0%)	1.00
Pulmonary edema	3 (6.1%)	0 (0.0%)	0.12
Acute renal worsening	1 (2.0%)	2 (4.0%)	1.00
Bleeding	2 (4.1%)	0 (0.0%)	0.24
Hypotension	5 (10.2%)	5 (10.0%)	1.00
Pneumonia	4 (8.2%)	4 (8.0%)	1.00

Culprit identified in 46.9 vs 41.7%

Endpoint	Early coronary angiography (n=49)	No early coronary angiography (n=50)	P*
	Freq (%)/median (IQR)	Freq (%)/median (IQR)	
Survival analysis (median survival time in days; 95% CI)	66 (11, NA)	25 (8, NA)	0.78
Hazard ratio (95% CI)	0.93 (0.55, 1.55)	1.00	0.77
30-day survival (S(t)±se†)	0.55±0.07	0.46±0.07	0.36
180-day survival (S(t)±se)	0.45±0.08	0.40±0.08	0.66
Cause of Death			
Anoxic Brain Injury	16	17	1.00
Cardiovascular	6	6	1.00
Miscellaneous	2	6	0.27
WMSI at DC	2 (1-4) N=9	3 (1.5-4) N=8	0.59
1	4 (44.4%)	2 (25%)	
2	2 (22.2%)	1 (12.5%)	
3	0 (0%)	2 (25%)	
4	3 (33.3%)	3 (37.5%)	
WMSI at 180 days post DC	1 (1-1) N=4	2 (1-2) N=5	0.17
1	4 (100%)	2 (40%)	
2	0 (0%)	3 (60%)	
CPC <3 or MRS <4			
30 days post DC	19 (86.4%) (n=22)	16 (88.9%) (n=18)	1.00
180 days post DC	16 (100%) (n=16)	13 (100%) (n=13)	NA
MMSE			
At DC	27.0 (25-30) (n=17)	28.5 (27-30) (n=18)	0.69
180 days post DC	30.0 (29-30) (n=13)	30.0 (23-30) (n=11)	0.84
Anxiety			
At DC	6.0 (4-9) (n=16)	5.0 (1-12) (n=19)	0.70
180 days post DC	4.0 (1-5) (n=13)	1.0 (0-4) (n=11)	0.23
Depression			
At DC	3.0 (0.5-7.5) (n=16)	4.0 (1-8) (n=19)	0.78
180 days post DC	1.0 (0-3) (n=13)	2.0 (0-3) (n=11)	1.00
MOCA			
At DC	21.5 (18-22.5) (n=16)	25.0 (15-28) (n=17)	0.65
180 days post DC	26.5 (25-28.5) (n=12)	29.0 (27-30) (n=9)	0.13
IQCODE			
At DC	3.0 (2.75-3.19)(n=14)	3.0 (3-3.10) (n=12)	0.89
180 days post DC	3.0 (2.9-3.16) (n=12)	3.0 (3-3.8) (n=11)	0.15

”To be conscious that you are ignorant of the facts is a great step to knowledge”

Benjamin Disraeli

EUROPE

Netherlands, France, Denmark

Netherlands

Niels van Royen & Judith Bonnes

France

Christian Spaulding

Denmark

Christian Juhl Terkelsen

Follow-up

DISCO trial

Ewa Wallin, Intensive care nurse, Phd, senior lecture

Ing-Marie Larsson, Intensive care nurse, Phd, senior lecture

Why do we need Follow-Up?

Areas in the follow-up

- HRQoL
- Somatic health
- Fatigue
- Cognitive function
- Anxiety and depression
- ”Daily life”
- Caregiver burden

How do we perform the follow-up?

- Face-to-face follow up whenever possible
- If face-to-face follow up is impossible, a telephone follow-up is of course better than no follow up at all

PRACTICAL ASPECTS

QUESTIONS?

Thank you for your Good work

Ing-marie.larsson@surgsci.uu.se

Neurological prognostication in the DISCO-trial

Tobias Cronberg, Professor Neurology, Lund University

Neurological prognostication in the DISCO-trial

- Clinical examination focused on the motor score, pupillary reflex and corneal reflex
- EEG, CT, MRI, SSEP and serum NSE are optional investigations
- Formal prognostication of all patients who are still in the ICU 96 hours after randomisation

In the DISCO trial the prognosis is considered *likely poor* if A, B and C criteria are fulfilled;

A. Confounding factors such as severe metabolic derangement and lingering sedation has been ruled out

B. The patient has no response or a stereotypic extensor response to bilateral central and peripheral painful stimulation at ≥ 96 hours after randomisation.

C. At least two of the below mentioned signs of a poor prognosis are present:

At least two of the below mentioned signs of a poor prognosis are present:

1. Bilateral absence of pupillary and corneal reflexes at 96h after CA or later
2. A prospectively documented early status myoclonus (within 48 hours)
3. A highly malignant EEG-pattern without reactivity to sound and painful stimulation.
4. CT brain with signs of global ischaemic injury, such as: generalised oedema with reduced grey/white matter differentiation and sulcal effacement **OR**

   MRI-brain with signs of global, diffuse, or bilateral multifocal ischaemic lesions.
5. Serial serum-NSE samples consistently higher than locally established levels associated with a poor outcome
6. Bilaterally Absent SSEP N20-responses more than 48 hours after randomisation.

Highly malignant EEG-patterns

1. Suppressed background (amplitude <10mV, 100% of the recording) without discharges.

2. Suppressed background with superimposed continuous periodic discharges.

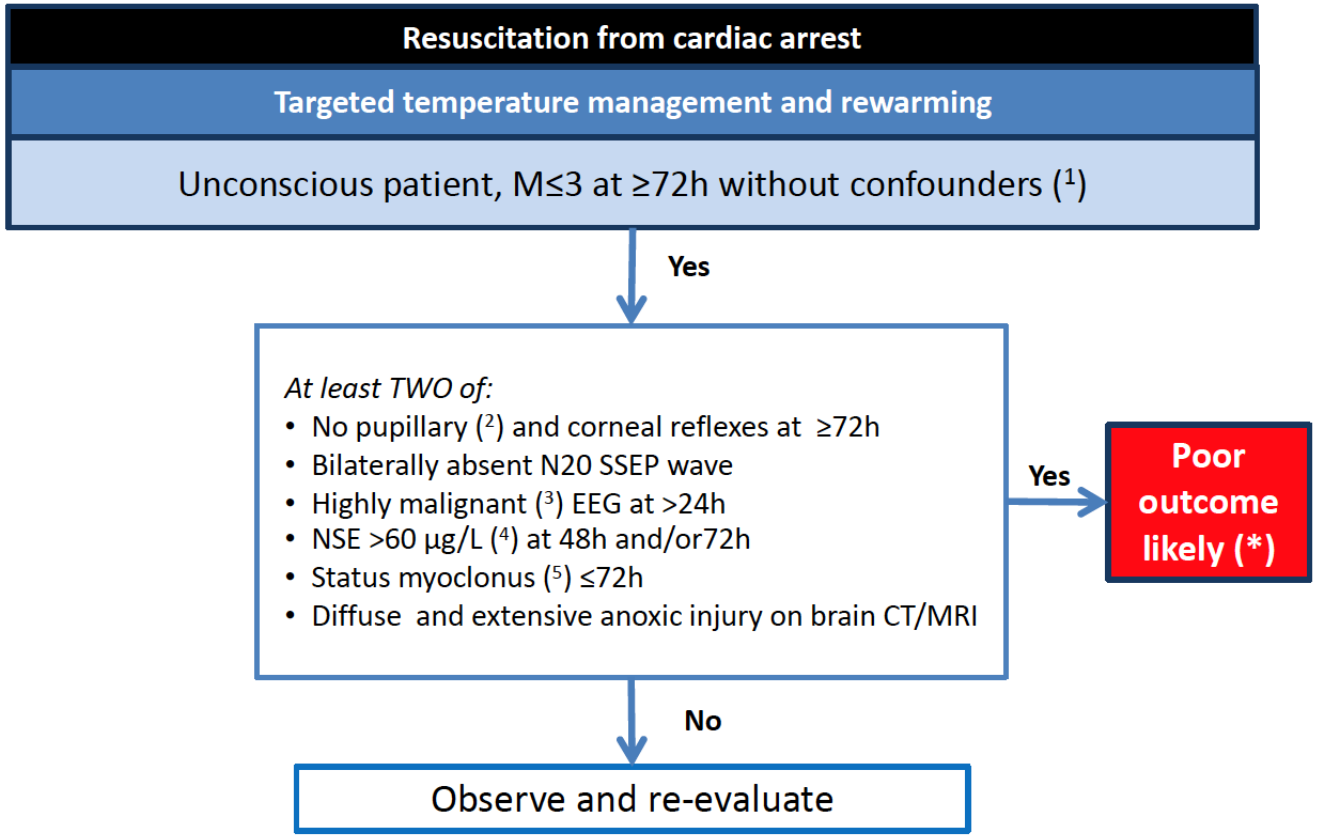
3. Burst-suppression (periods of suppression with amplitude <10mV constituting 50% of the recording) without discharges.

4. Burst-suppression with superimposed discharges.

Why should prognostication be multimodal?

- All methods have pitfalls
- False positives reported with all methods
- Using multiple independent methods reduce the risk of errors by chance
- There is no room for mistakes

The 2021 ERC/ESICM algorithm is multimodal



Questions

Tobias.Cronberg@skane.se

Questions/Issues from all

Summary