AER
ACTUALITÉS EN RÉANIMATION

Arrêt cardiaque
Prise en charge cardio-vasculaire

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BARD: Fees for conferences

Post-resuscitation shock: recent advances in pathophysiology and treatment

Jozwiak M, Bougouin W, Geri G, Grimaldi D, Cariou A. Ann Intensive Care 2020

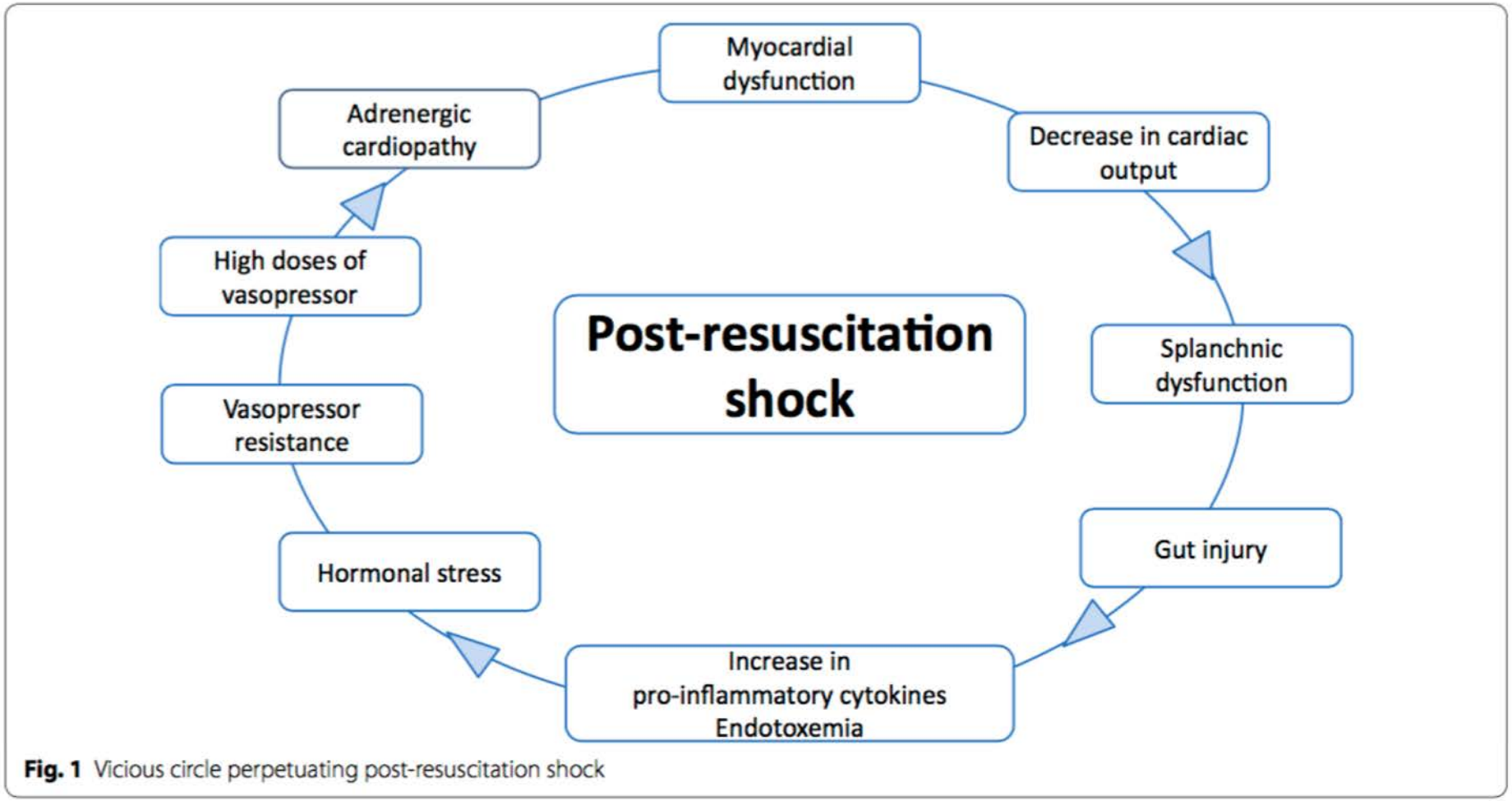


Fig. 1 Vicious circle perpetuating post-resuscitation shock

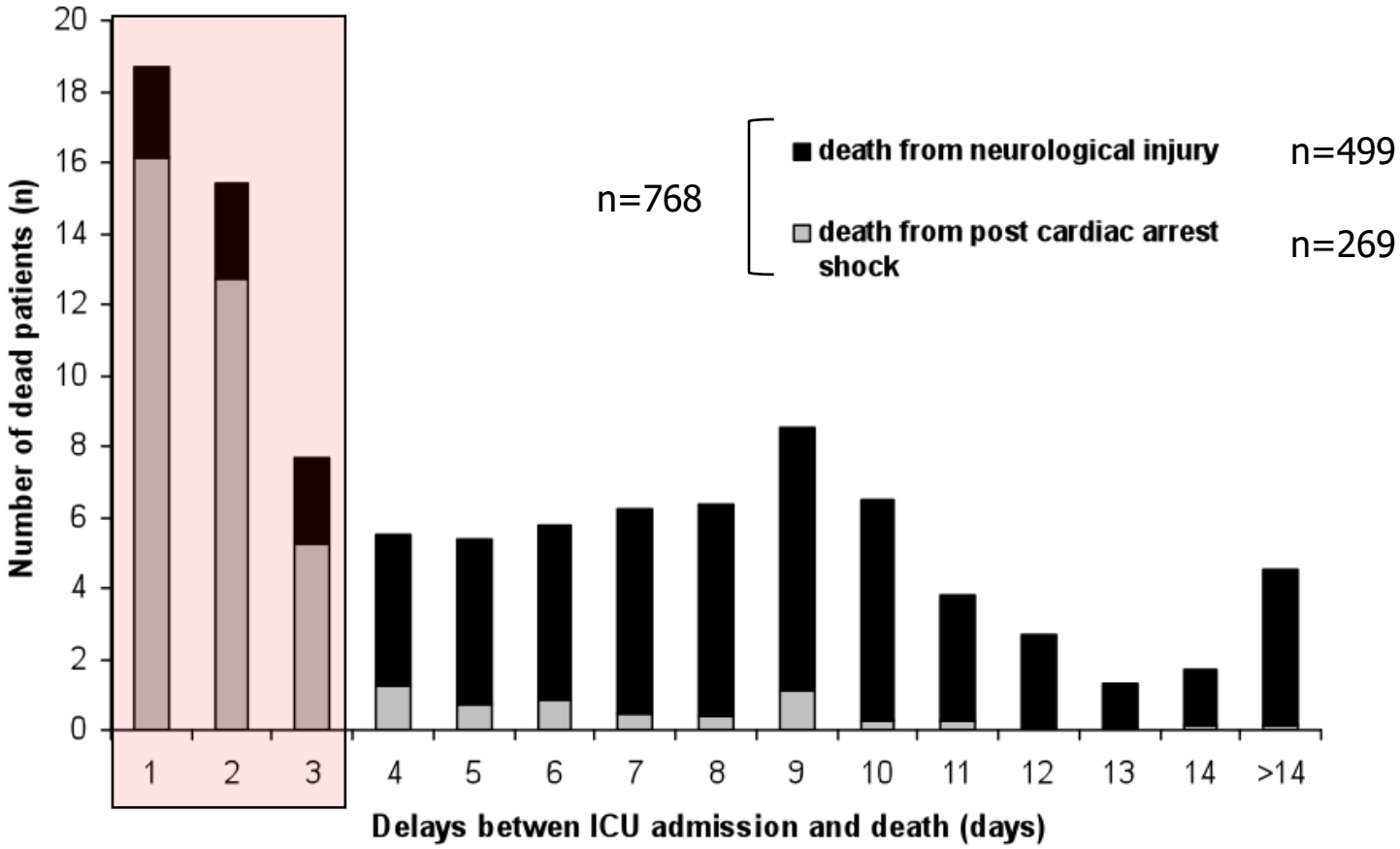
Outcomes following admission for out-of-hospital cardiac arrests

Perkins GD, et al. Lancet 2021

ICU mortality after cardiac arrest: the relative contribution of shock and brain injury

Lemiale V, Dumas F, Mongardon N, Giovanetti O, Charpentier J, Chiche JD, Carli P, Mira JP, Nolan J, Cariou A

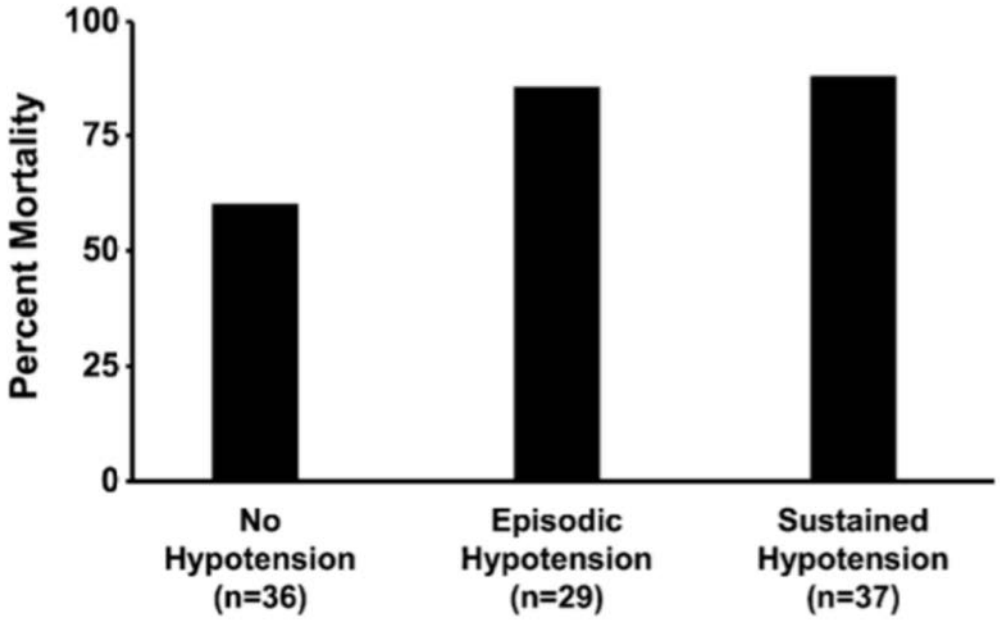
Intensive Care Med 2013



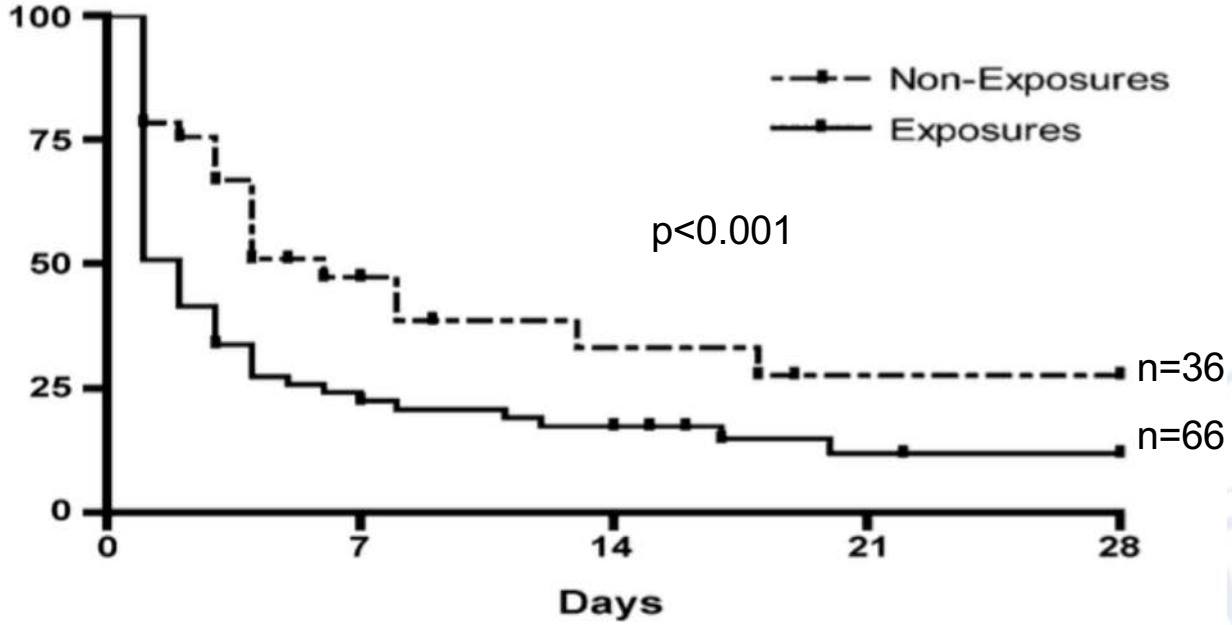
Early arterial hypotension is common in the post-cardiac arrest syndrome and associated with increased in-hospital mortality

Kilgannon JH et al. Resuscitation 2008

Mortality rate according to hypotension exposure

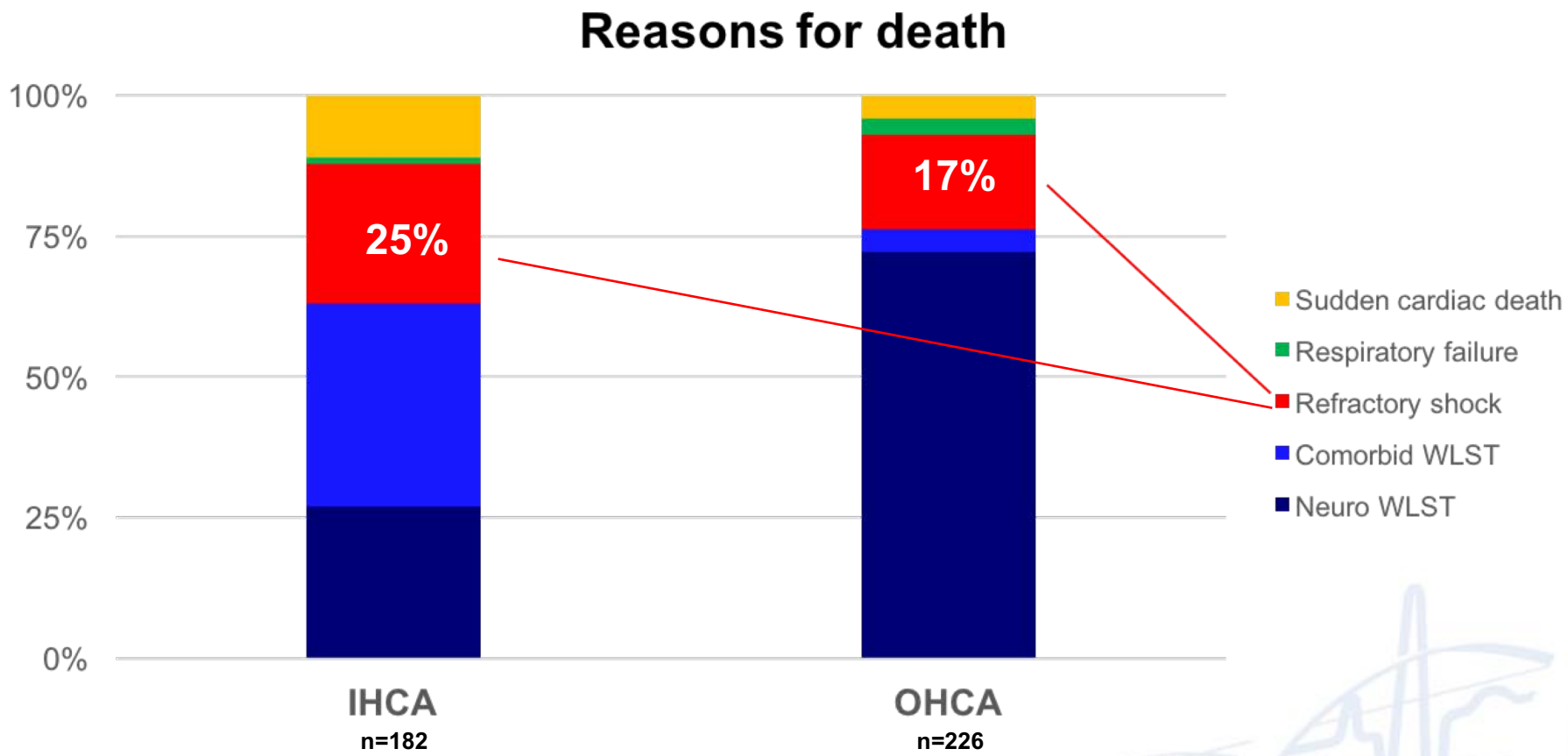


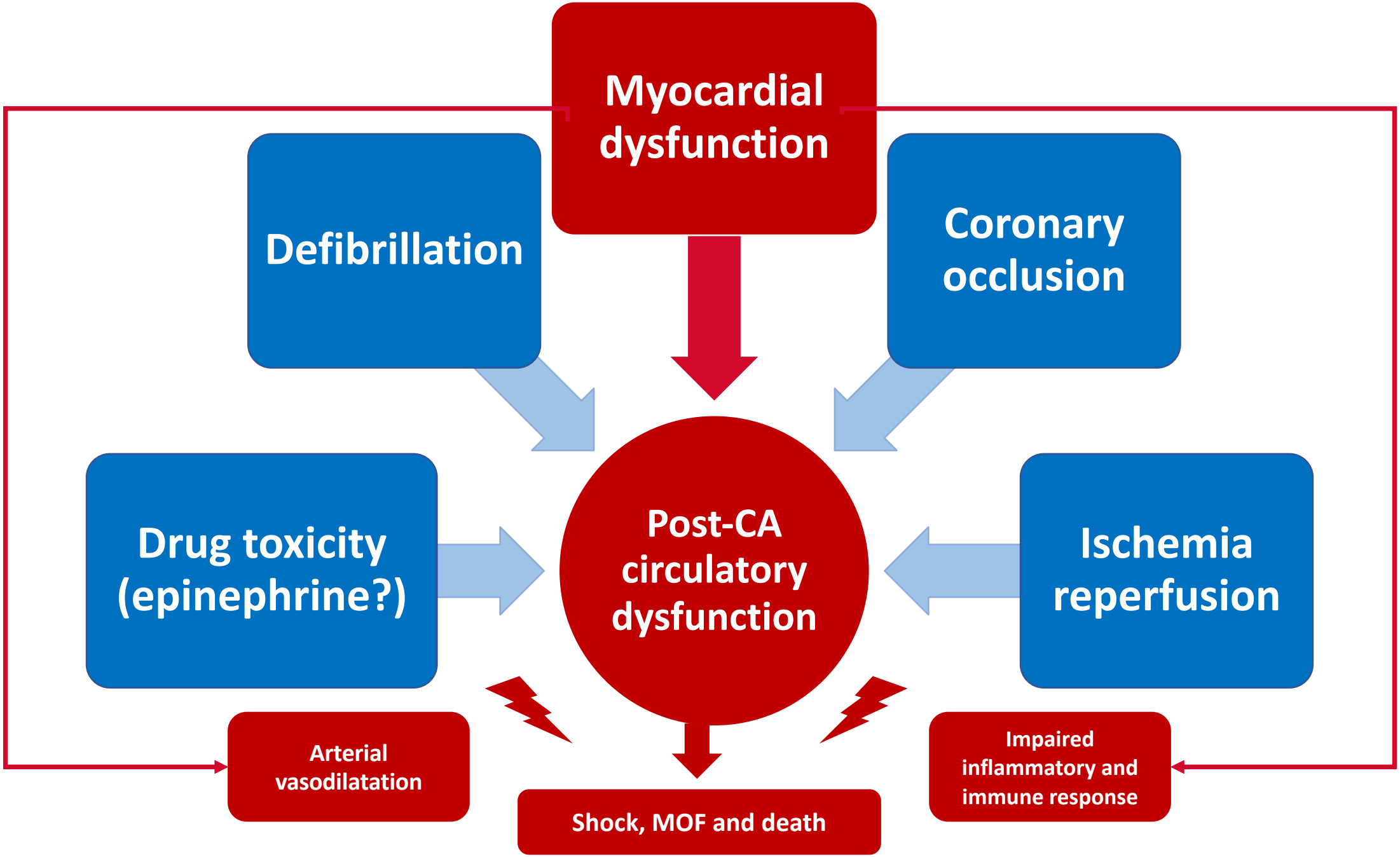
Survival curves for pts exposed to hypotension after ROSC (at least 2 SBP <100 mm Hg over the first 6h) vs non- exposed



Reasons for death in patients successfully resuscitated from out-of-hospital and in-hospital cardiac arrest

Witten L et al. Resuscitation 2019; 136: 93-99

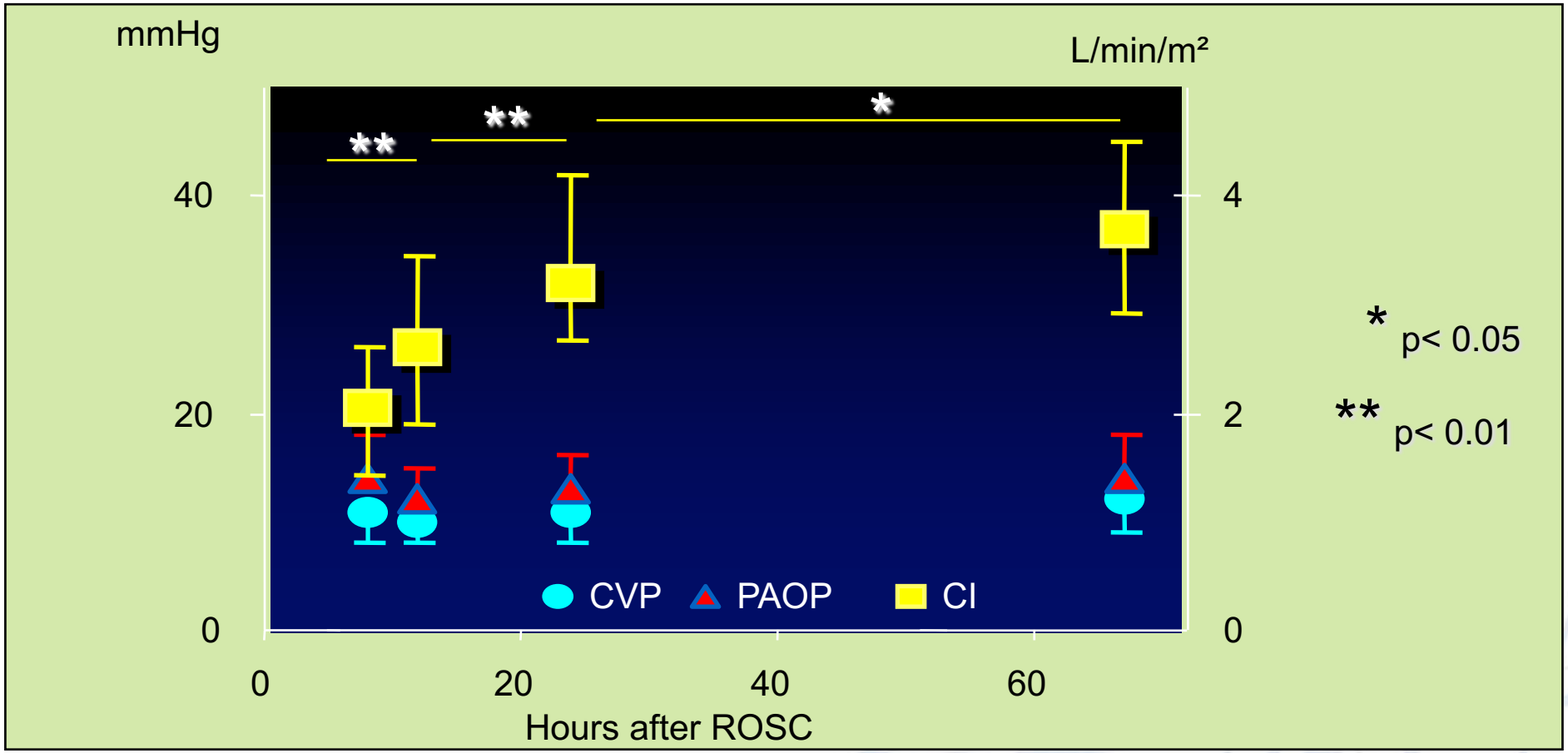



Myocardial dysfunction
Defibrillation
Coronary occlusion
Drug toxicity (epinephrine?)
Post-CA circulatory dysfunction
Ischemia reperfusion
Arterial vasodilatation
Shock, MOF and death
Impaired inflammatory and immune response

Reversible Myocardial Dysfunction in Survivors of Out-of-Hospital Cardiac Arrest

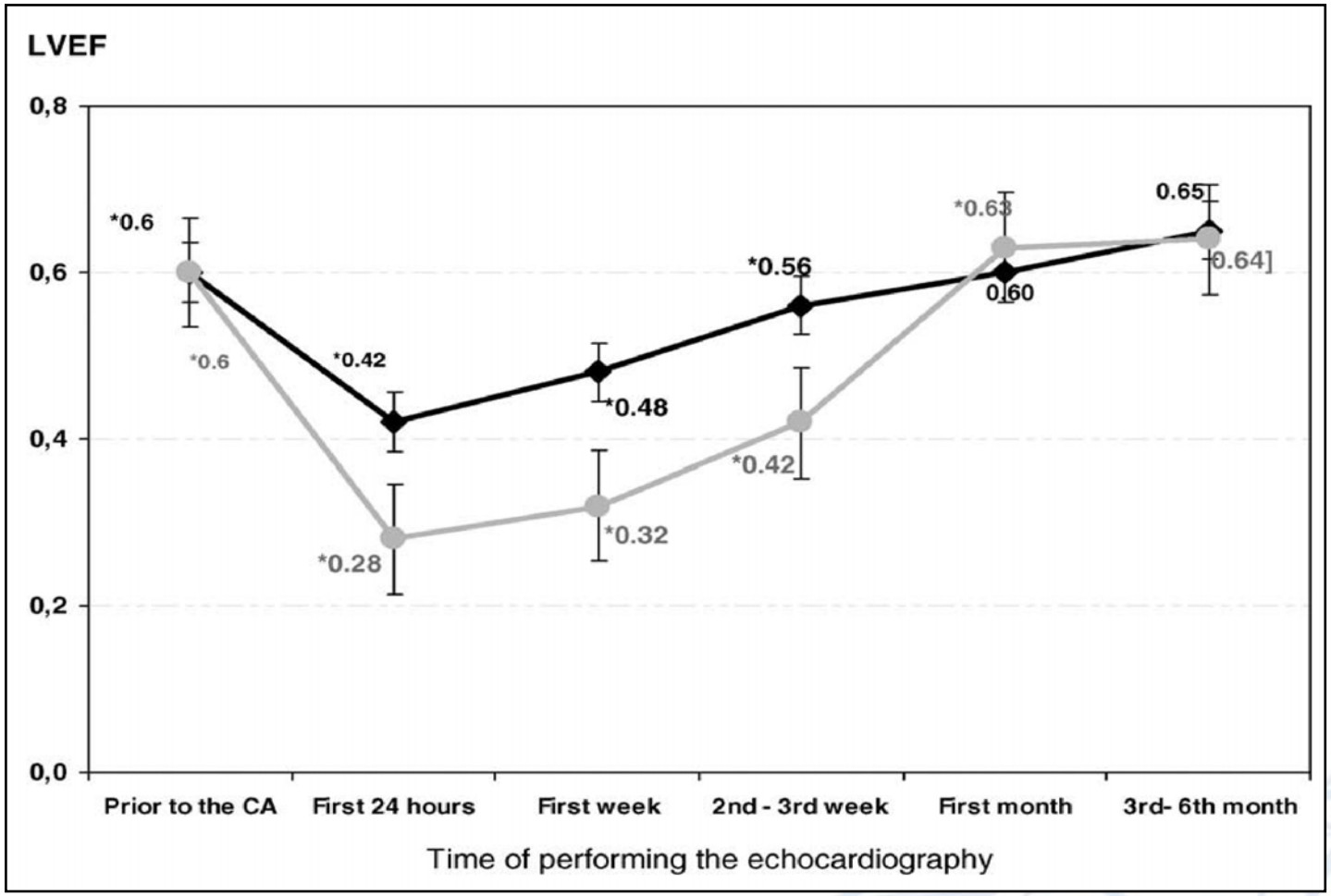
Laurent I, et al. J Am Coll Cardiol 2002

Hemodynamic profile over the first 72 hours after CA and ROSC (using pulmonary artery catheterization)



Reversible myocardial dysfunction after CPR

Ruiz-Bailén M, et al; ARIAM Group. Resuscitation 2005



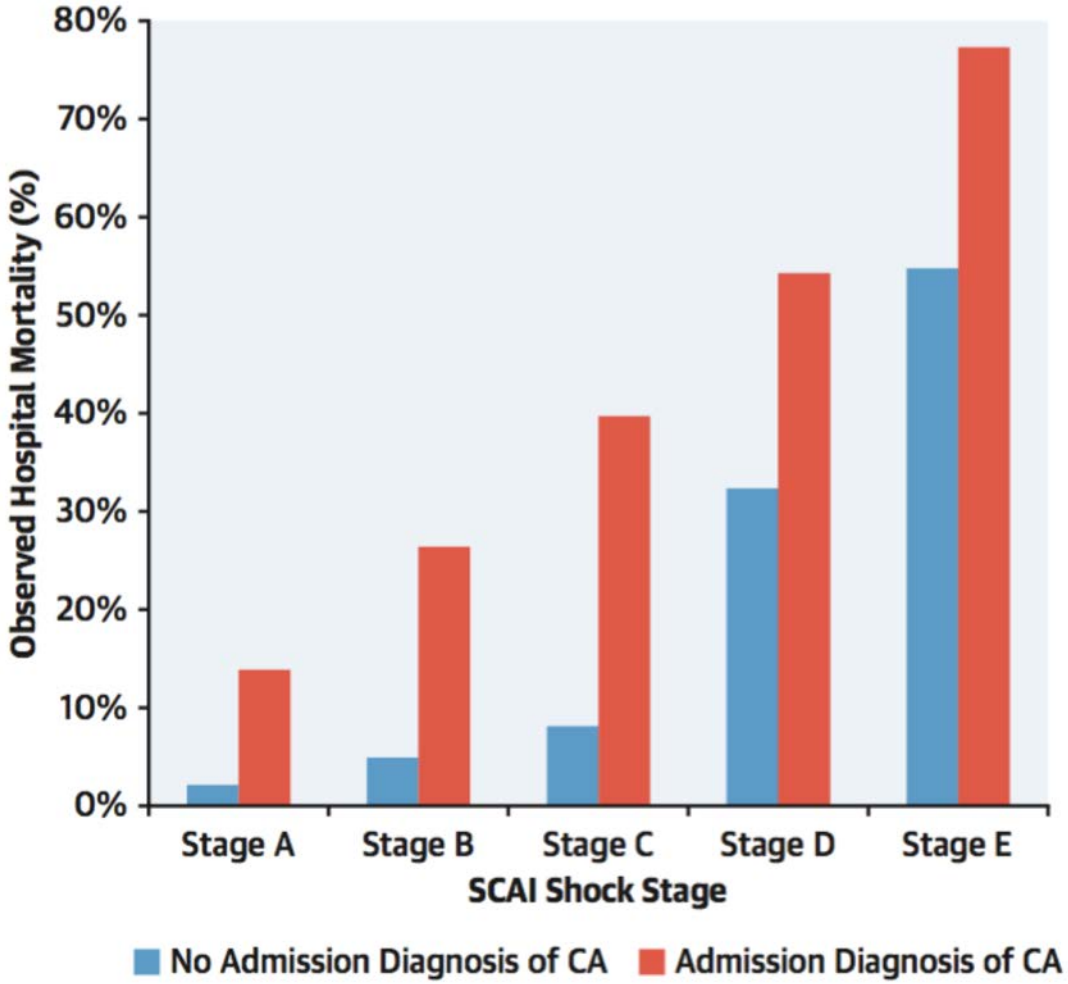
- 29 patients
- TTE and TEE

Cardiogenic Shock Classification to Predict Mortality in the Cardiac Intensive Care Unit

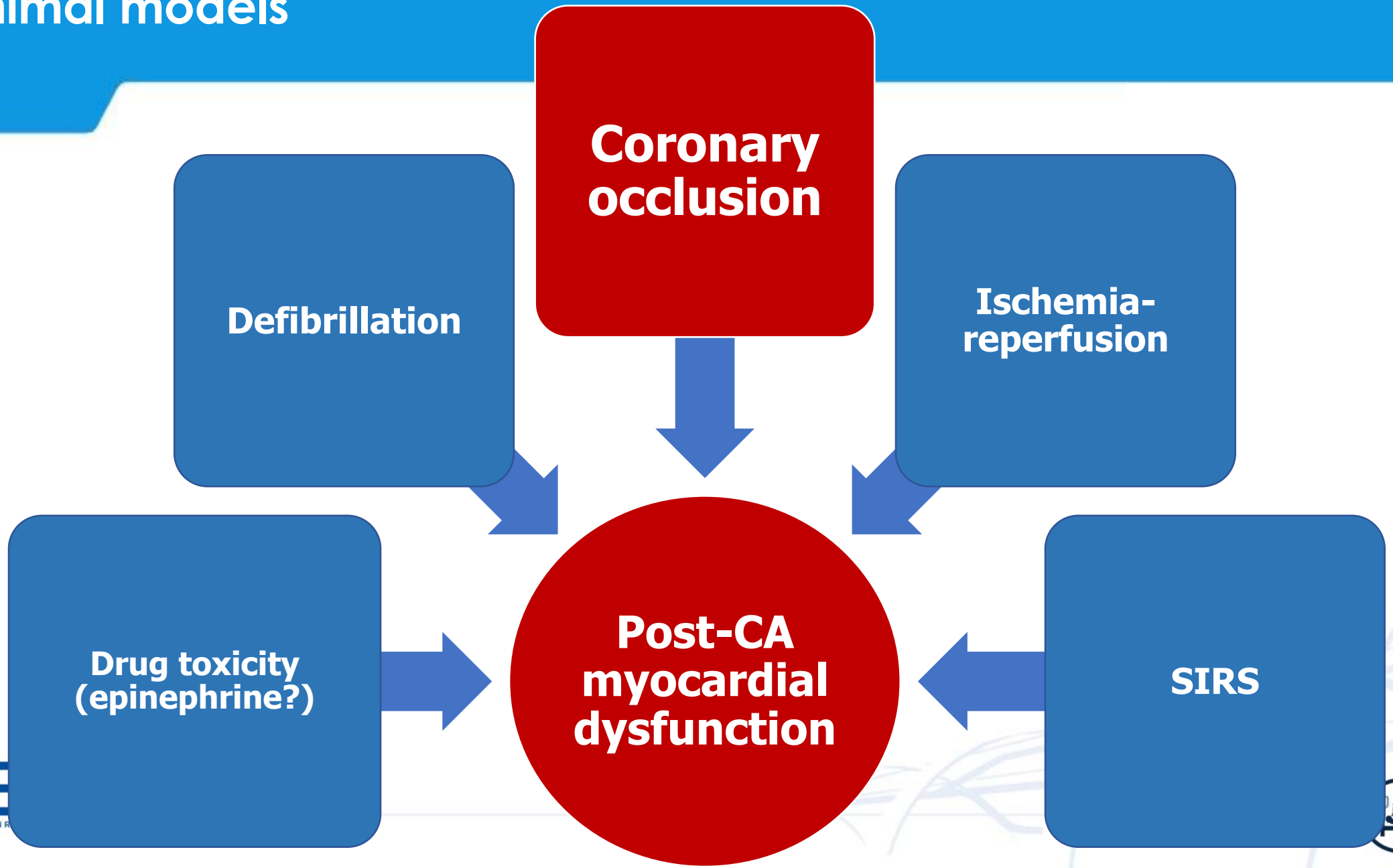
Jentzer JC et al. JACC 2019

Cardiogenic Shock Stage	Study Definition
Stage A ("At risk")	Neither hypotension/tachycardia nor hypoperfusion
Stage B ("Beginning")	Hypotension/tachycardia WITHOUT hypoperfusion
Stage C ("Classic")	Hypoperfusion WITHOUT deterioration
Stage D ("Deteriorating)"	Hypoperfusion WITH deterioration NOT refractory shock
Stage E ("Extremis")	Hypoperfusion WITH deterioration AND refractory shock

Society for Cardiovascular Angiography and Intervention (SCAI) shock stage



Animal models



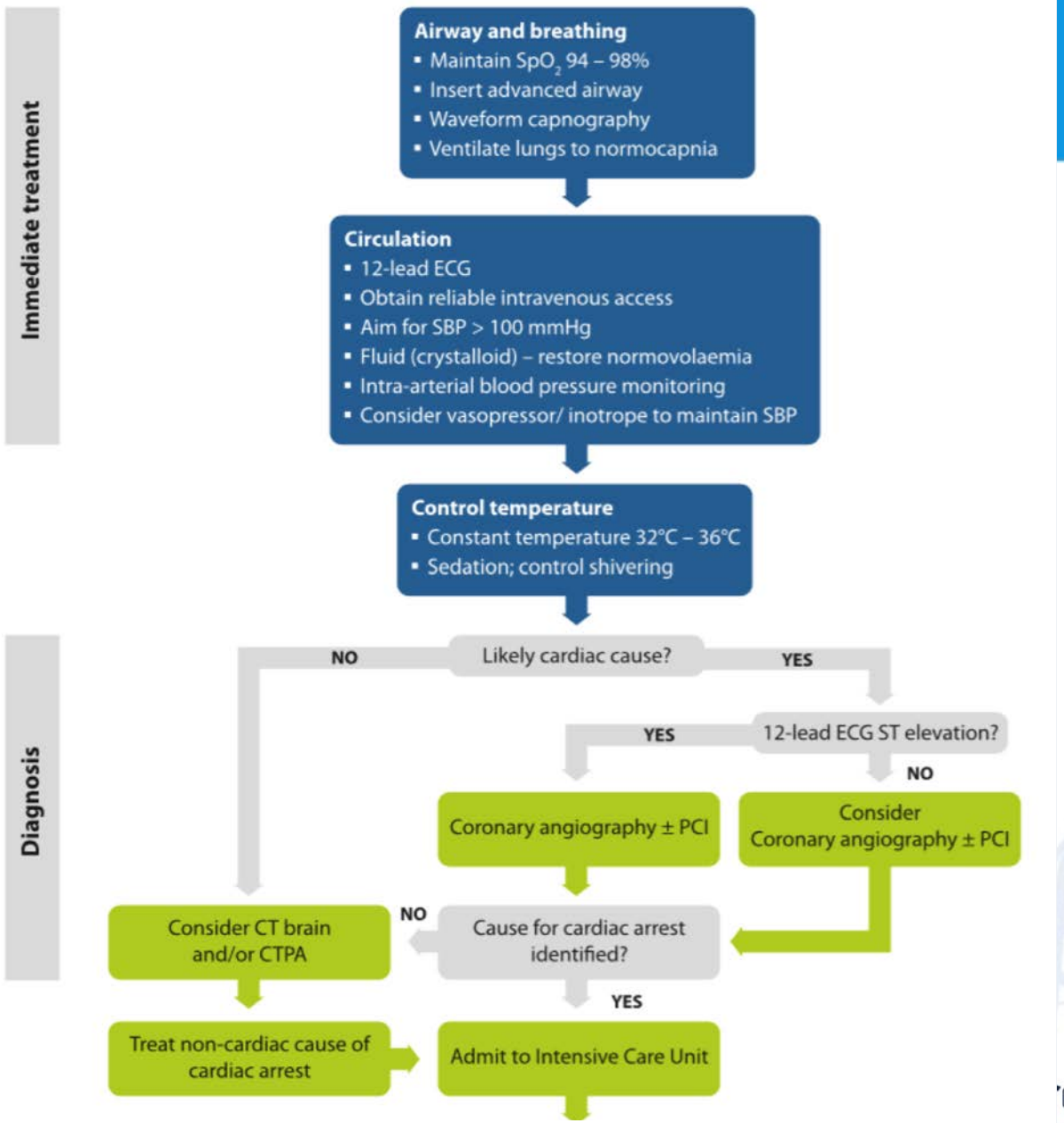
European Resuscitation Council and European Society of Intensive Care Medicine Guidelines for Post-resuscitation Care 2015
Section 5 of the European Resuscitation Council Guidelines for Resuscitation 2015☆

Jerry P. Nolan[a,b,*], Jasmeet Soar[c], Alain Cariou[d], Tobias Cronberg[e], Véronique R.M. Moulaert[f], Charles D. Deakin[g], Bernd W. Bottiger[h], Hans Friberg[i], Kjetil Sunde[j], Claudio Sandroni[k]

EUROPEAN RESUSCITATION COUNCIL

ESICM

"There are no randomised studies but given that many observational studies reported increased survival and neurologically favourable outcome, it is highly probable that early invasive management is beneficial in STE patients."



Recent statements

ESC Guidelines 2017

Cardiac arrest

Recommendations	Class[a]	Level[b]
A primary PCI strategy is recommended in patients with resuscitated cardiac arrest and an ECG consistent with STEMI.[69–71,85]	I	B

Ibanez et al. Eur Heart J 2018

ILCOR CoSTR 2021

Consensus on Science with Treatment Recommendations (CoSTR)

For comatose patients with ST segment elevation there is no randomized clinical evidence for the timing of coronary angiography. The Task Force acknowledges that early coronary angiography, and percutaneous intervention if indicated, is the current standard of care for patients with STEMI who did not have a cardiac arrest. We found no evidence to change this approach in patients with ST segment elevation following cardiac arrest.

CoSTR.ILCOR.org (updated March 08, 2021)

ERC – ESICM Guidelines 2021

- **Emergent cardiac catheterisation laboratory evaluation (and immediate PCI if required) should be performed in adult patients with ROSC after cardiac arrest of suspected cardiac origin with ST-elevation on the ECG**

- **What about in patients without ST-segment elevation?**

ORIGINAL ARTICLE

Lemkes JS et al. NEJM 2019

Coronary Angiography after Cardiac Arrest without ST-Segment Elevation

Table 2. Procedures, Treatments, and Characteristics of Coronary Artery Disease.*

Variable	Immediate Angiography Group (N=273)	Delayed Angiography Group (N=265)
Coronary angiography performed — no. (%)	265 (97.1)	172 (64.9)†
Median time from arrest to coronary angiography (IQR) — hr	2.3 (1.8–3.0)	121.9 (52.0–197.3)
Median time from randomization to coronary angiography (IQR) — hr	0.8 (0.5–1.2)	119.9 (47.2–203.7)
Severity of coronary artery disease — no./total no. (%)		
No clinically significant disease	94/265 (35.5)	59/172 (34.3)
One-vessel disease	72/265 (27.2)	49/172 (28.5)
Two-vessel disease	54/265 (20.4)	35/172 (20.3)
Three-vessel disease	45/265 (17.0)	29/172 (16.9)
Acute unstable lesion — no./total no. (%)‡	36/265 (13.6)	29/172 (16.9)
Acute thrombotic occlusion — no./total no. (%)	9/265 (3.4)	13/172 (7.6)§
Chronic total occlusion — no./total no. (%)	100/265 (37.7)	58/172 (33.7)
Revascularization treatment — no. (%)		
PCI	90 (33.0)	64 (24.2)
CABG	17 (6.2)	23 (8.7)
Pharmacologic or conservative treatment	168 (61.5)	179 (67.5)

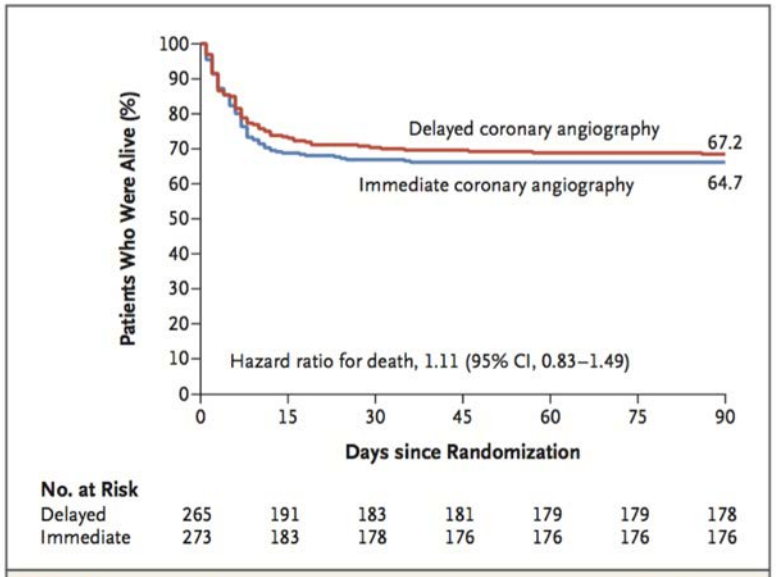


Figure 1. Kaplan–Meier Estimates of Survival among Patients Who Underwent Immediate or Delayed Coronary Angiography after Cardiac Arrest.
There was no significant difference between the two groups in overall survival at 90 days.

AER ACTUALITÉS EN RÉANIMATION

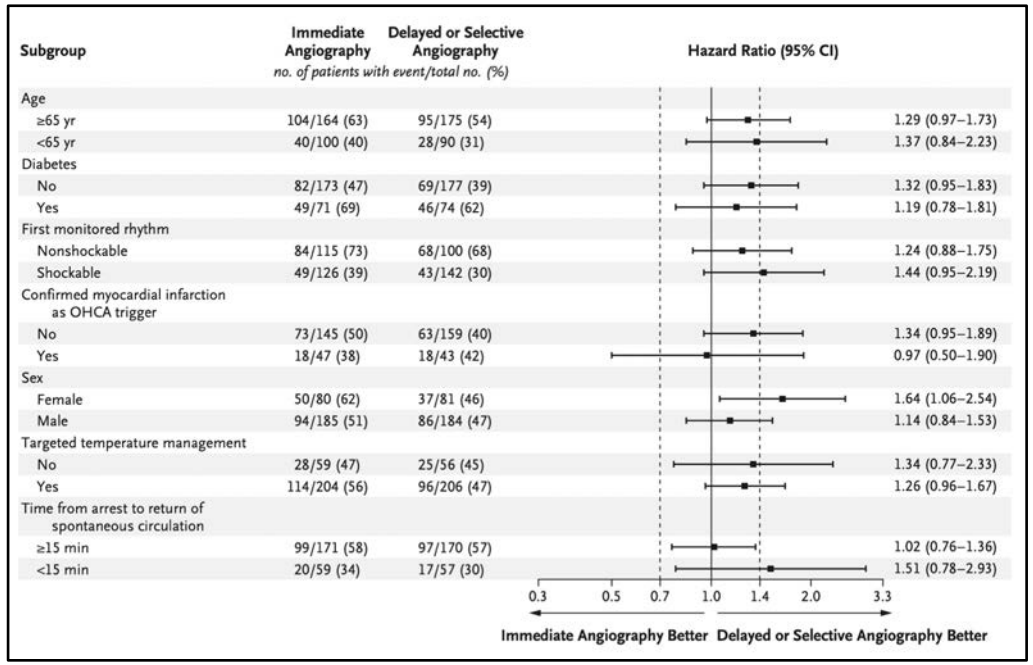
COACT

AfterROSC

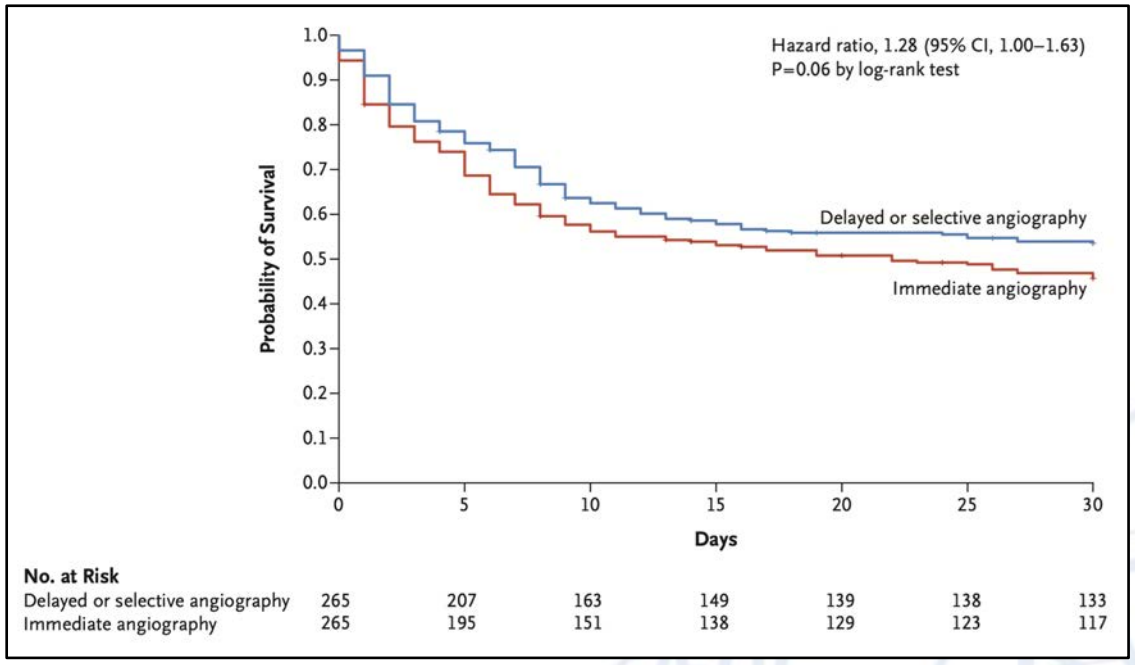
ORIGINAL ARTICLE

Desch S et al. NEJM 2021

Angiography after Out-of-Hospital Cardiac Arrest without ST-Segment Elevation



Subgroup	Immediate Angiography	Delayed or Selective Angiography	Hazard Ratio (95% CI)
	no. of patients with event/total no. (%)		
Age			
≥65 yr	104/164 (63)	95/175 (54)	1.29 (0.97–1.73)
<65 yr	40/100 (40)	28/90 (31)	1.37 (0.84–2.23)
Diabetes			
No	82/173 (47)	69/177 (39)	1.32 (0.95–1.83)
Yes	49/71 (69)	46/74 (62)	1.19 (0.78–1.81)
First monitored rhythm			
Nonshockable	84/115 (73)	68/100 (68)	1.24 (0.88–1.75)
Shockable	49/126 (39)	43/142 (30)	1.44 (0.95–2.19)
Confirmed myocardial infarction as OHCA trigger			
No	73/145 (50)	63/159 (40)	1.34 (0.95–1.89)
Yes	18/47 (38)	18/43 (42)	0.97 (0.50–1.90)
Sex			
Female	50/80 (62)	37/81 (46)	1.64 (1.06–2.54)
Male	94/185 (51)	86/184 (47)	1.14 (0.84–1.53)
Targeted temperature management			
No	28/59 (47)	25/56 (45)	1.34 (0.77–2.33)
Yes	114/204 (56)	96/206 (47)	1.26 (0.96–1.67)
Time from arrest to return of spontaneous circulation			
≥15 min	99/171 (58)	97/170 (57)	1.02 (0.76–1.36)
<15 min	20/59 (34)	17/57 (30)	1.51 (0.78–2.93)



No. at Risk

Delayed or selective angiography	265	207	163	149	139	138	133
Immediate angiography	265	195	151	138	129	123	117

AER ACTUALITÉS EN RÉANIMATION

TOMAHAWK

AfterROSC

ERC – ESICM Guidelines 2021

- Emergent cardiac catheterisation laboratory evaluation (and immediate PCI if required) should be performed in adult patients with ROSC after cardiac arrest of suspected cardiac origin with ST-elevation on the ECG
- In patients with ROSC after out-of-hospital cardiac arrest (OHCA) without ST-elevation on the ECG, emergent cardiac catheterisation laboratory evaluation should be considered if there is an estimated high probability of acute coronary occlusion (e.g. patients with haemodynamic and/or electrical instability)


Intensive Care Med
https://doi.org/10.1007/s00134-021-06368-4

CONFERENCE REPORTS AND EXPERT PANEL

European Resuscitation Council and European Society of Intensive Care Medicine guidelines 2021: post-resuscitation care

Jerry P. Nolan[1,2*], Claudio Sandroni[3,4], Bernd W. Böttiger[5], Alain Cariou[6], Tobias Cronberg[7], Hans Friberg[8], Cornelia Genbrugge[9,10], Kirstie Haywood[11], Gisela Lilja[12], Véronique R. M. Moulaert[13], Nikolaos Nikolaou[14], Theresa Mariero Olasveengen[15], Markus B. Skrifvars[16], Fabio Taccone[17] and Jasmeet Soar[18]


Available online at www.sciencedirect.com

Resuscitation

journal homepage: www.elsevier.com/locate/resuscitation

ELSEVIER

EUROPEAN RESUSCITATION COUNCIL

European Resuscitation Council and European Society of Intensive Care Medicine Guidelines 2021: Post-resuscitation care

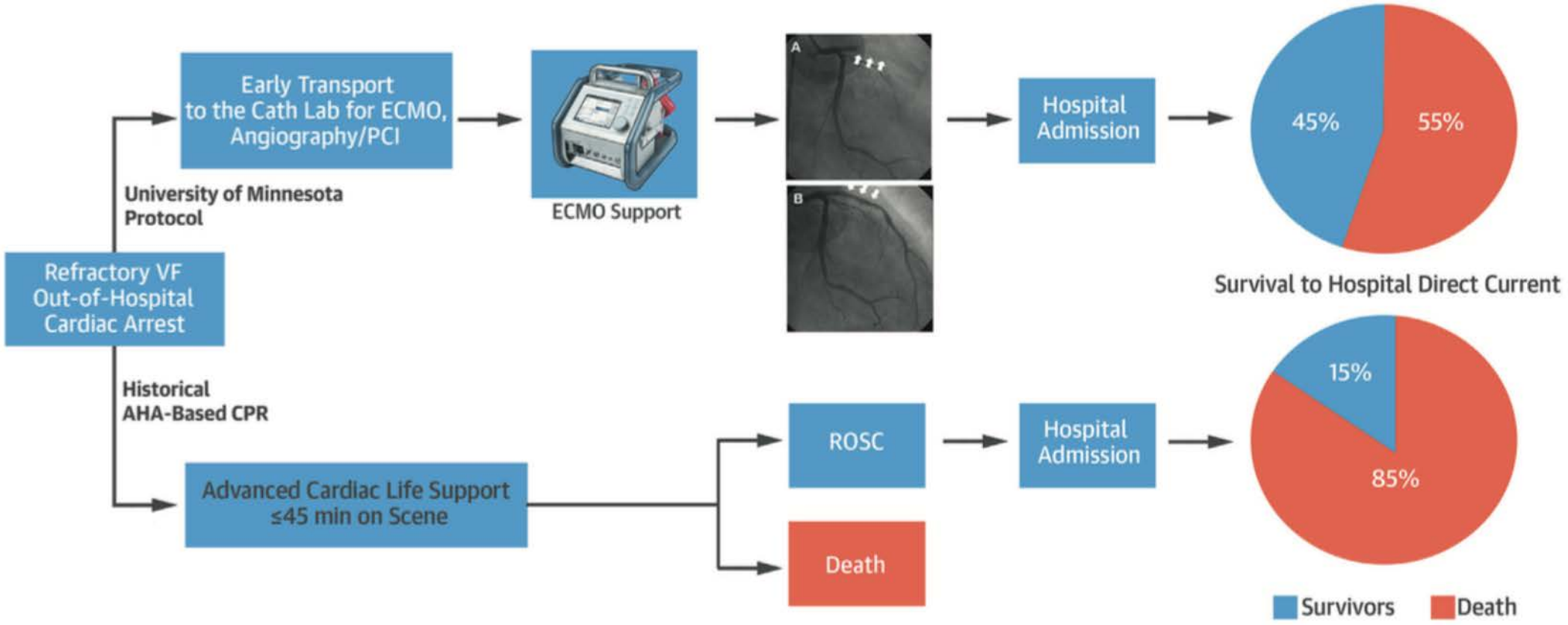
Jerry P. Nolan, Claudio Sandroni, Bernd W. Böttiger, Alain Cariou, Tobias Cronberg, Hans Friberg, Cornelia Genbrugge, Kirstie Haywood, Gisela Lilja, Véronique R.M. Moulaert, Nikolaos Nikolaou, Theresa Mariero Olasveengen, Markus B. Skrifvars, Fabio Taccone, Jasmeet Soar

AER ACTUALITÉS EN RÉANIMATION

AfterROSC

Coronary artery disease in patients with out-of-hospital refractory ventricular fibrillation cardiac arrest

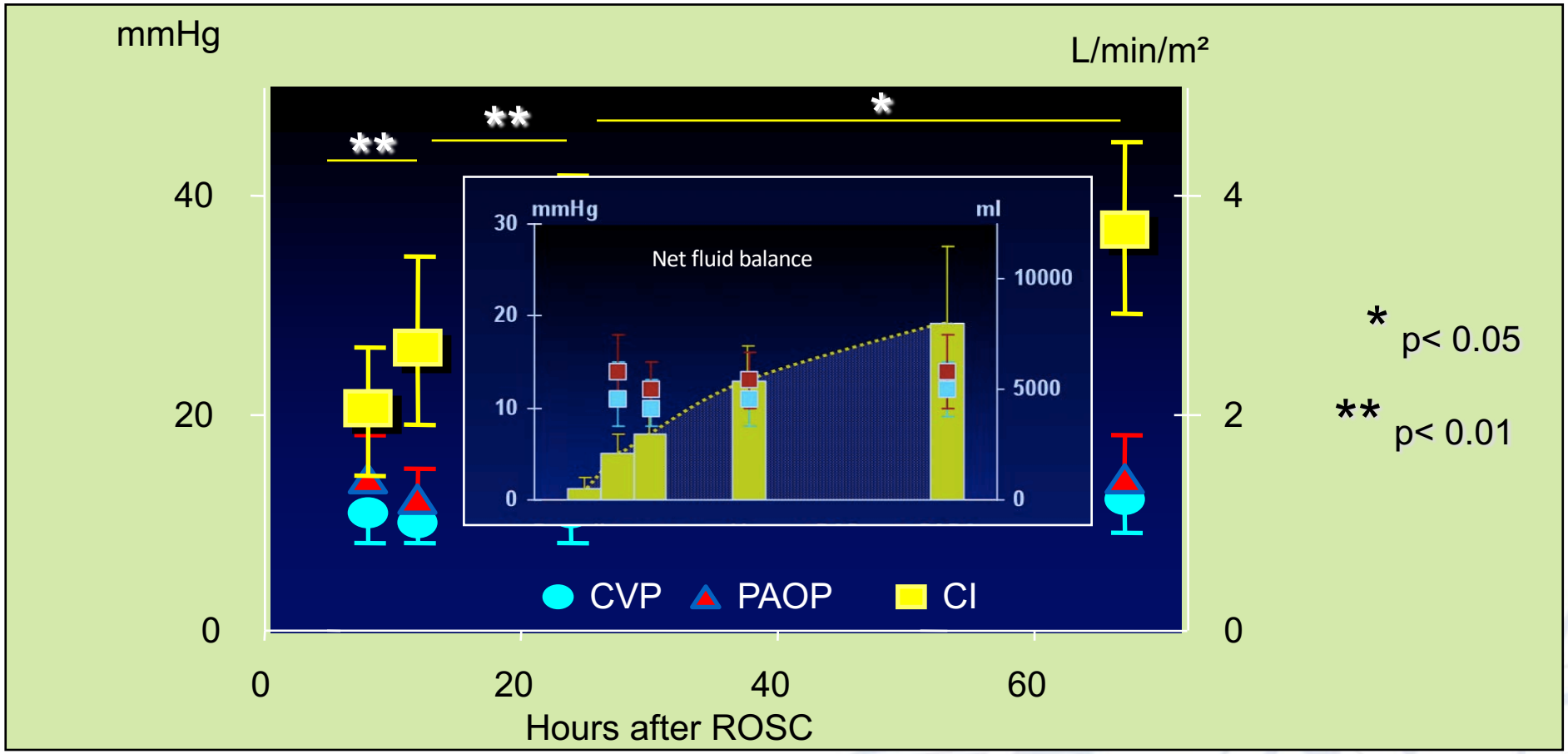
Yannopoulos D, et al. J Am Col Cardiol 2017



Reversible Myocardial Dysfunction in Survivors of Out-of-Hospital Cardiac Arrest

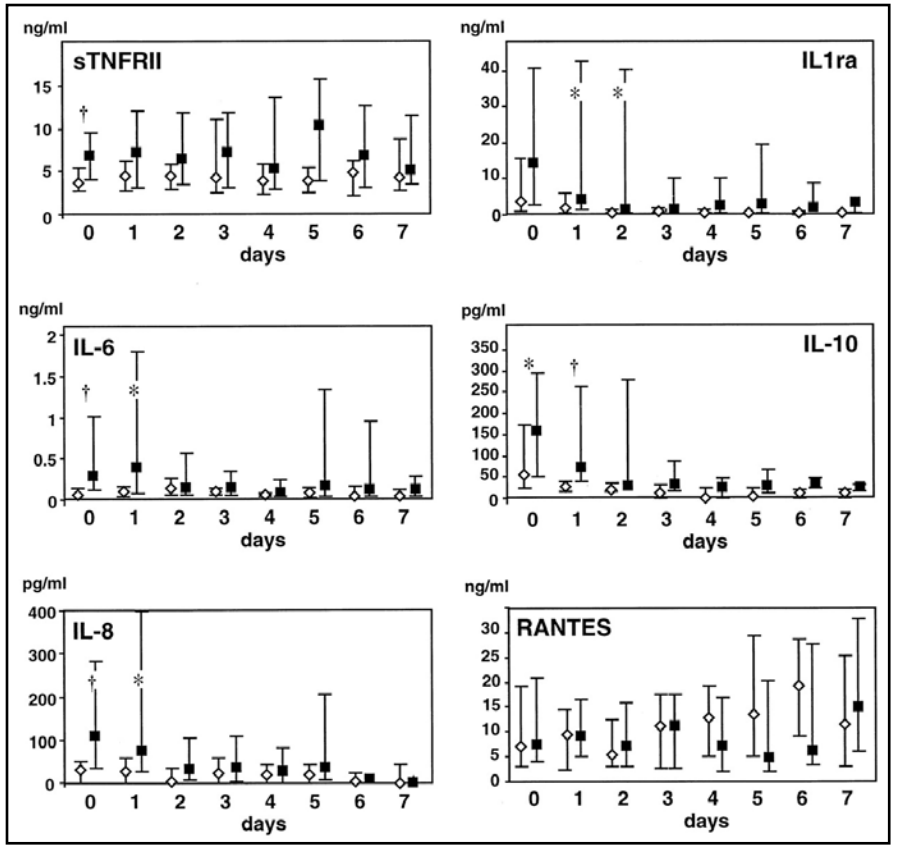
Laurent I, et al. J Am Coll Cardiol 2002

Hemodynamic profile over the first 72 hours after CA and ROSC (using pulmonary artery catheterization)



Successful CPR After Cardiac Arrest as a "Sepsis-Like" Syndrome

Adrie et al. Circulation. 2002;106:562



Kinetics of cytokines and sTNFRII levels on admission and over a 7-day period in 61 resuscitated survivors (n=18, open diamonds) and nonsurvivors (n=43, black squares) of OHCA

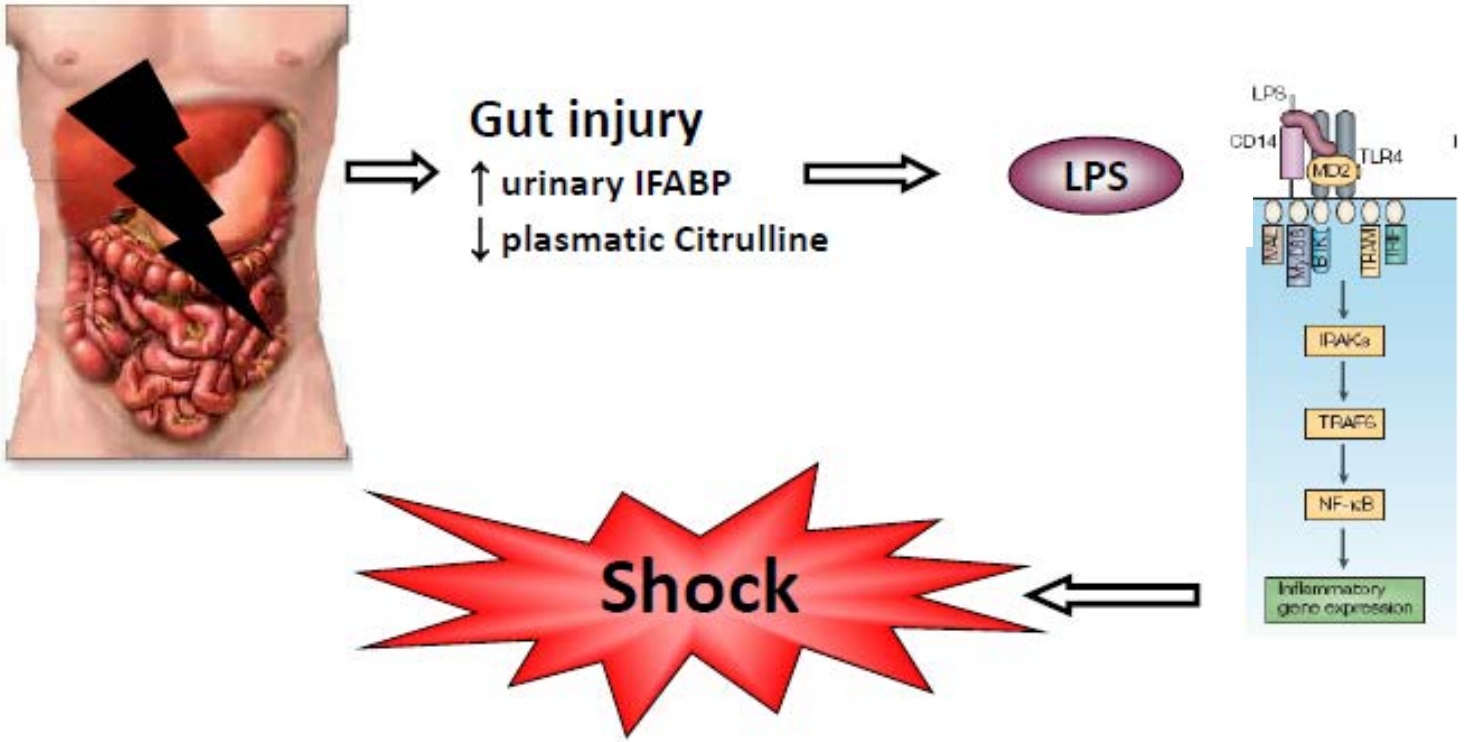
◊ **Survivors**

■ **Non survivors**

AER ACTUALITÉS EN RÉANIMATION

AfterR@SC

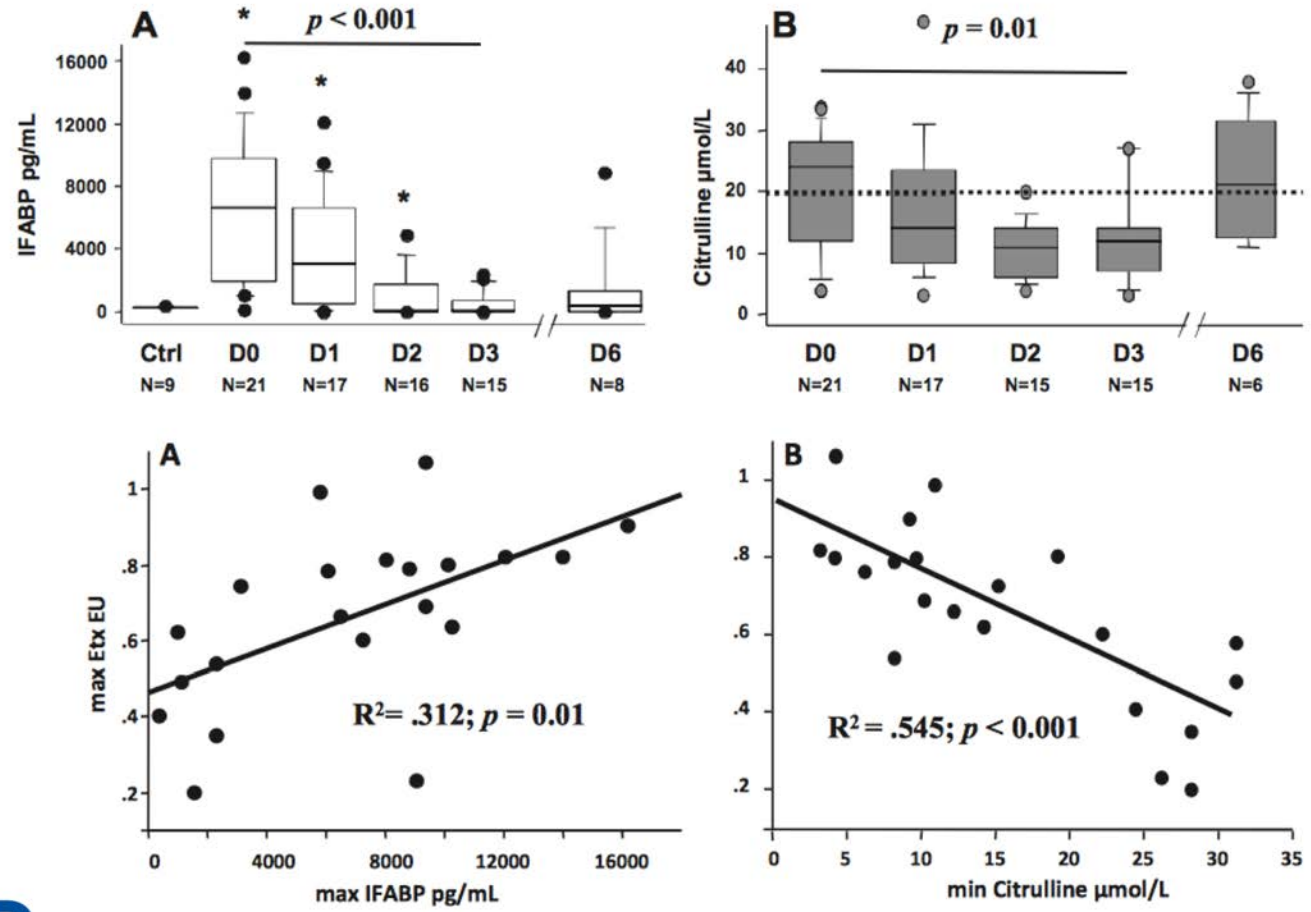
The splanchnic hypothesis…



Courtesy of Prof David Grimaldi, Erasme, Brussels

Markers of intestinal injury are associated with endotoxemia in successfully resuscitated patients

Grimaldi D *et al*. Resuscitation 2013



Gut injury is common after cardiac arrest

Endotoxemia is frequent after OHCA and is correlated with biomarkers of gut injury

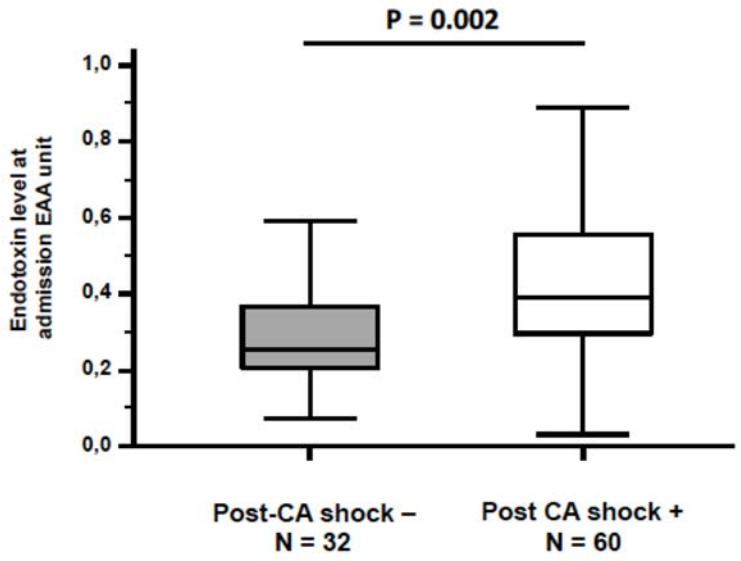
AER ACTUALITÉS EN RÉANIMATION

AfterROSC

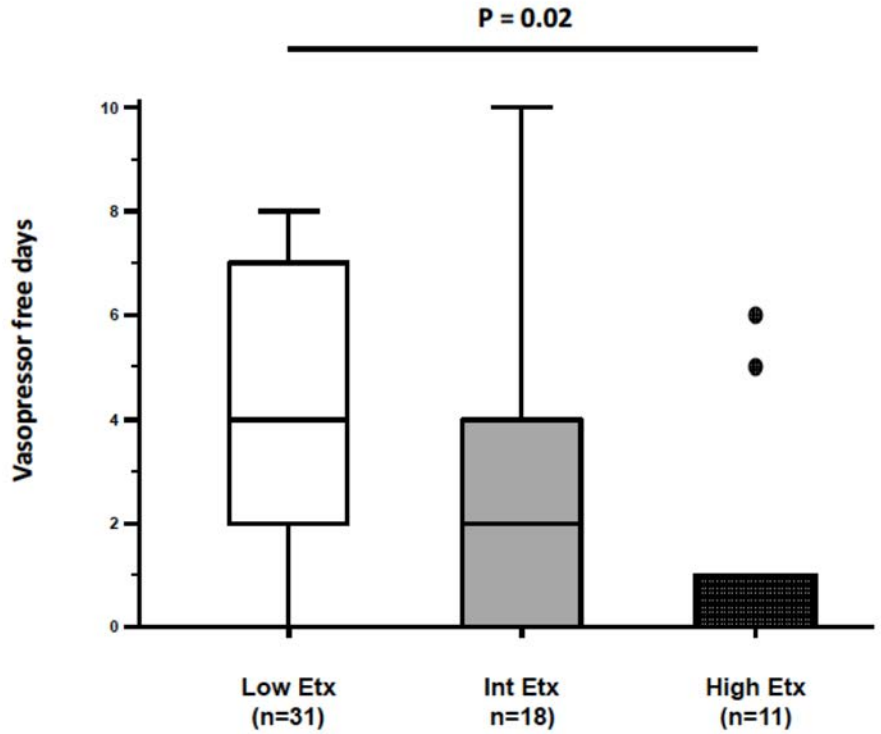
High level of endotoxemia following out-of-hospital cardiac arrest is associated with severity and duration of post cardiac arrest shock

Grimaldi D, Sauneuf B, Guivarch E, Ricome S, Geri G, Charpentier J, Zuber B, Dumas F, Spaulding C, Mira JP, Cariou A.
Crit Care Med 2015

Vasopressor free days according to endotoxemia level



Endotoxin (Etx) level according to the presence of post-CA shock



AER ACTUALITÉS EN RÉANIMATION

AfterR⊕SC

High-Volume Hemofiltration after Out-of-Hospital Cardiac Arrest. A randomized study.

Laurent I, et al. *J Am Coll Cardiol 2005*

Six-month survival:

- Controls 21%
- HF alone 42%
- HF + HT 32%

p=0.28

Death by intractable shock (IS):

- Controls 42%
- HF alone 10%
- HF + HT 14%

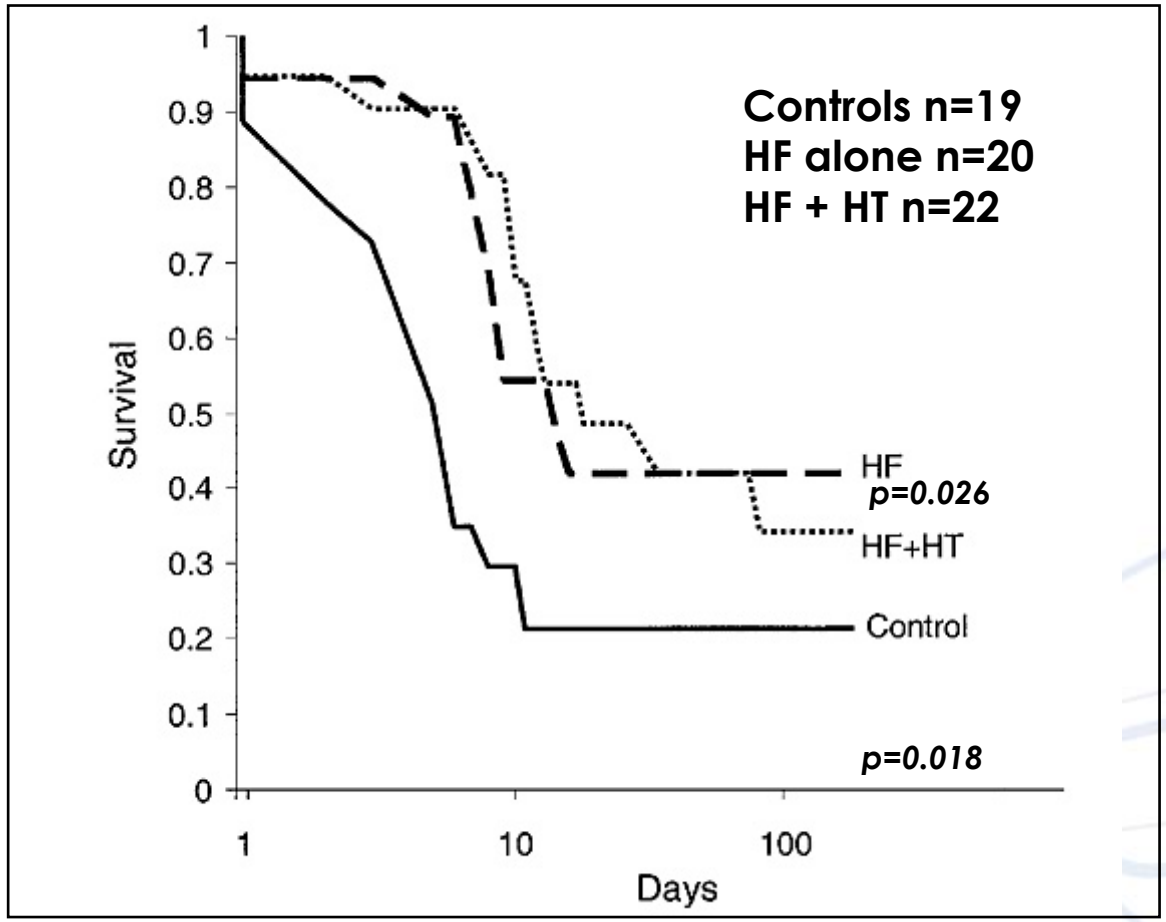
p=0.009

Relative risk of death by IS:

- HF alone 0.21 (95% CI 0.5-0.85)
- HF + HT 0.29 (95% CI 0.09-0.91)

Multivariate analysis:

- HF and six-month death: OR 0.21 (95% CI 0.5-0.85)
- HF and death by IS: OR 0.29 (95% CI 0.09-0.91)

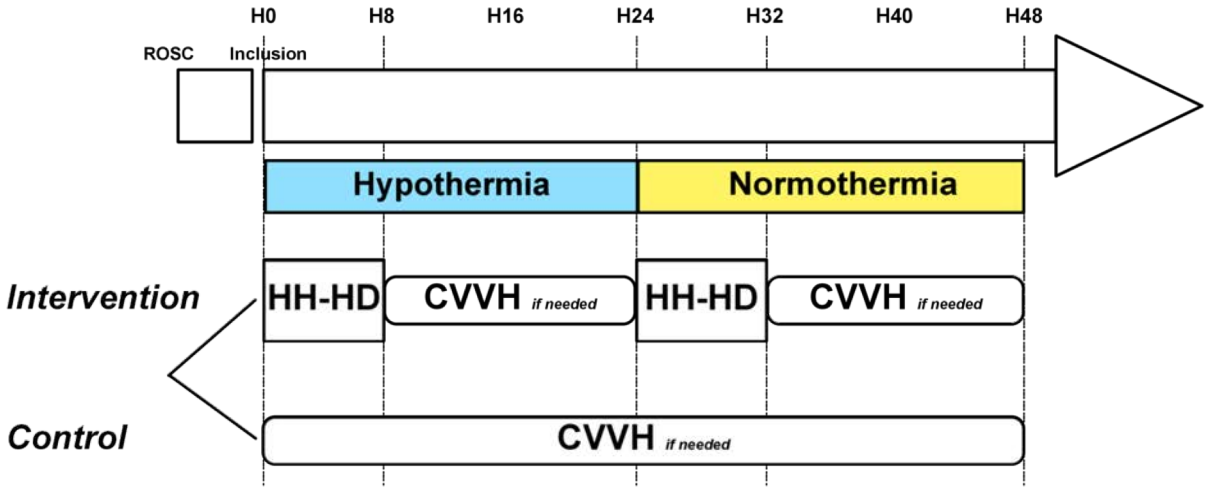


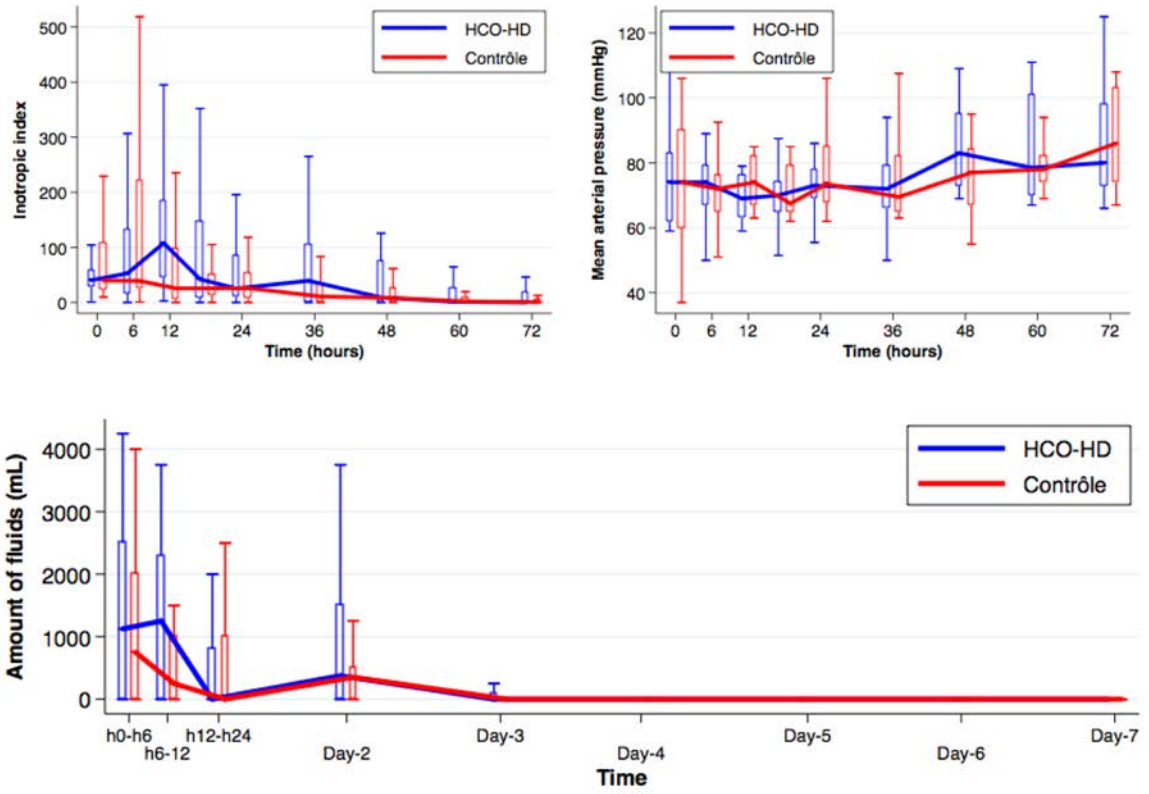
AER ACTUALITÉS EN RÉANIMATION

AfterR@SC

Hemodynamic efficiency of an hemodialysis treatment with high cut-off membrane during the early period of post-resuscitation shock: HYPERDIA trial

Geri G, et al. Resuscitation 2018





Conclusion: In cardiac arrest patients, HCO-CVVHD did not decrease the length of post-resuscitation shock and had no effect on hemodynamic profile

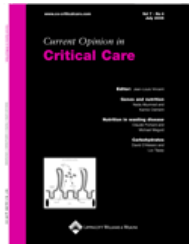
AER ACTUALITÉS EN RÉANIMATION

AfterR⊛SC

Post-resuscitation disease after cardiac arrest: a sepsis-like syndrome?

Adrie C, Laurent I, Monchi M, Cariou A, Dhainaut JF, Spaulding C.

Current Opinion in Crit Care 2004



1. Ischemia and reperfusion syndrome
2. Inflammatory response
3. Coagulopathy
4. Circulatory failure
5. Adrenal dysfunction

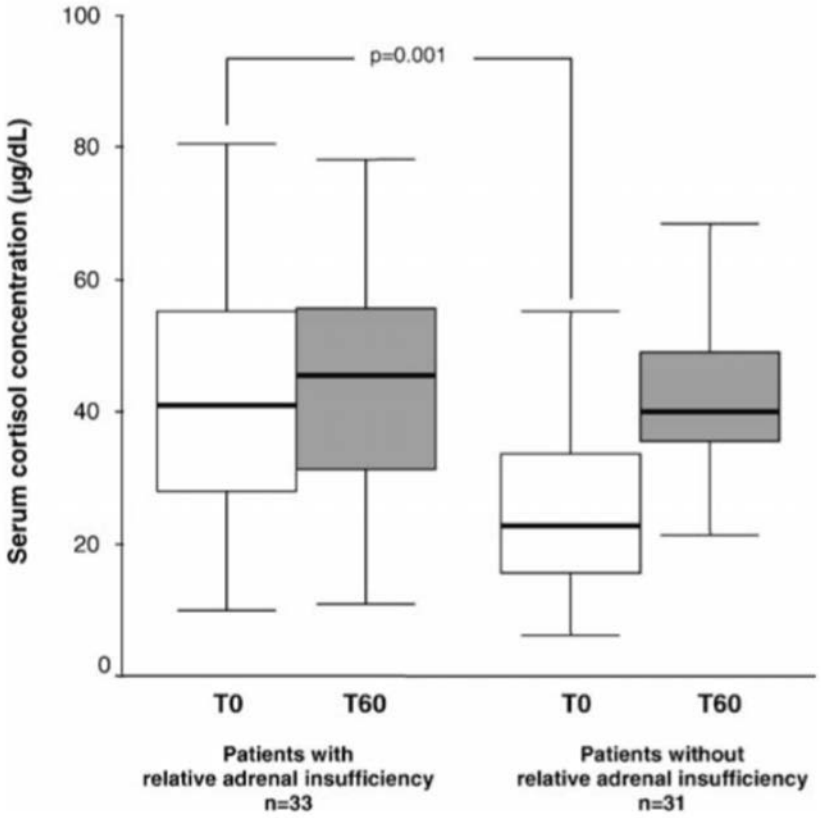
AER ACTUALITÉS EN RÉANIMATION

AfterROSC

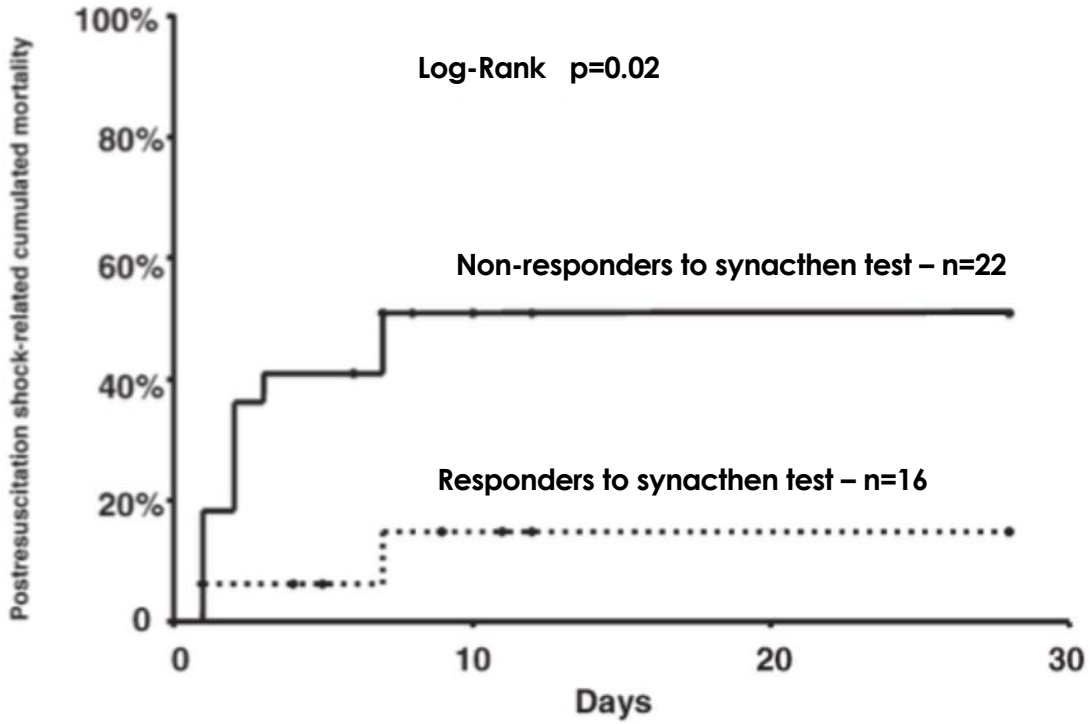
Prognostic value of relative adrenal insufficiency after out-of-hospital cardiac arrest

Pène F et al. Intensive Care Med 2005

Prevalence

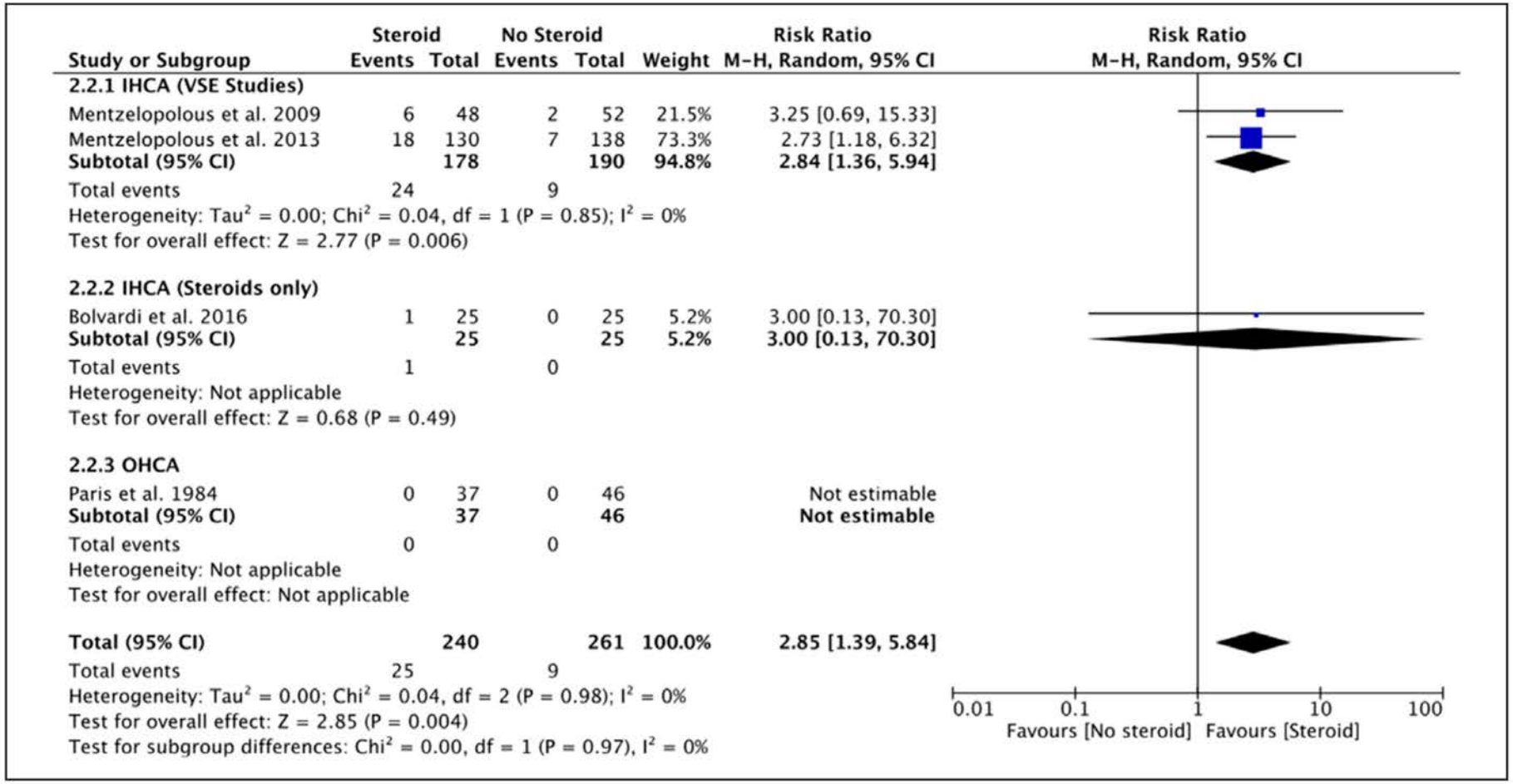


Shock-related mortality



Use of Corticosteroids in Cardiac Arrest: A Systematic Review and Meta-Analysis

Shah K and Mitra AR, Crit Care Med 2021



JAMA | Original Investigation

Effect of Vasopressin and Methylprednisolone vs Placebo on Return of Spontaneous Circulation in Patients With In-Hospital Cardiac Arrest

A Randomized Clinical Trial

JAMA October 26, 2021 Volume 326, Number 16

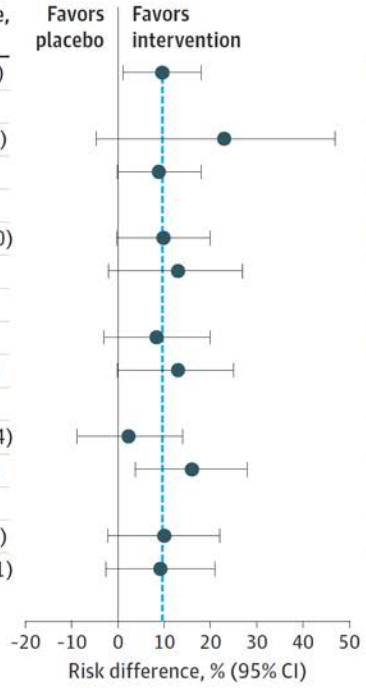
Lars W. Andersen, MD, MPH, PhD, DMSc; Dan Isbye, MD, PhD; Jesper Kjærgaard, MD, PhD, DMSc; Camilla M. Kristensen, BS; Søren Darling, MD; Stine T. Zwisler, MD, PhD; Stine Fisker, CRNA; Jens Christian Schmidt, MD; Hans Kirkegaard, MD, PhD, DMSc; Anders M. Grejs, MD, PhD; Jørgen R. G. Rossau, MD; Jacob M. Larsen, MD, PhD; Bodil S. Rasmussen, MD, PhD; Signe Riddersholm, MD, PhD; Kasper Iversen, MD, DMSc; Martin Schultz, MD, PhD; Jakob L. Nielsen, CRNA; Bo Løfgren, MD, PhD; Kasper G. Lauridsen, MD, PhD; Christoffer Sølling, MD, PhD; Kim Pælestik, MD; Anders G. Kjærgaard, MD, PhD; Dorte Due-Rasmussen, MD; Fredrik Folke, MD, PhD; Mette G. Charlot, MD, PhD; Rikke Malene H. G. Jepsen, MD, PhD; Sebastian Wiberg, MD, PhD; Michael Donnino, MD; Tobias Kurth, MD, PhD; Maria Høybye, BS; Birthe Sindberg, RN; Mathias J. Holmberg, MD, MPH, PhD; Asger Granfeldt, MD, PhD, DMSc

Conclusions

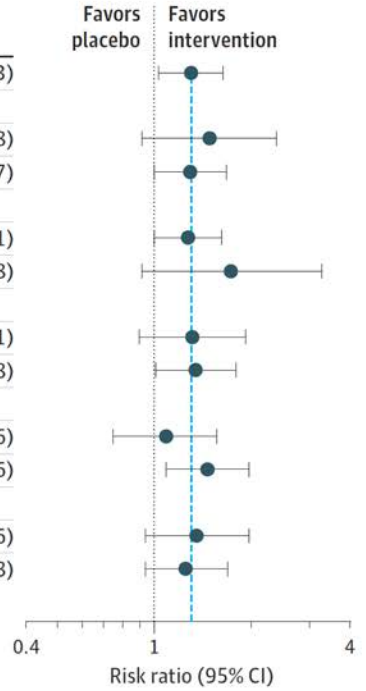
Among patients with in-hospital cardiac arrest, administration of vasopressin and methylprednisolone, compared with placebo, significantly increased the likelihood of return of spontaneous circulation. However, there is uncertainty whether this treatment results in benefit or harm for long-term survival.

Figure 2. Subgroups Results for Return of Spontaneous Circulation

	No./total (%)		
	Vasopressin and methylprednisolone	Placebo	Risk difference, % (95% CI)
Overall	100/237 (42)	86/264 (33)	9.6 (1.1 to 18)
Initial rhythm			
Shockable	15/21 (71)	15/31 (48)	23 (-4.7 to 47)
Nonshockable	85/216 (39)	71/233 (30)	8.9 (0 to 18)
Witnessed			
Yes	79/168 (47)	75/202 (37)	9.9 (-0.2 to 20)
No	21/69 (30)	11/62 (18)	13 (-2 to 27)
Age, y			
>72	45/127 (35)	33/122 (27)	8.4 (-3 to 20)
≤72	55/110 (50)	53/142 (37)	13 (0.3 to 25)
Time from arrest to trial drug, min			
>8	38/115 (33)	41/135 (30)	2.7 (-8.8 to 14)
≤8	62/122 (51)	45/129 (35)	16 (3.7 to 28)
Time from epinephrine to trial drug, min			
>2	42/110 (38)	35/124 (28)	10 (-2.1 to 22)
≤2	58/127 (46)	51/140 (36)	9.2 (-2.6 to 21)



Risk ratio (95% CI)
1.30 (1.03 to 1.63)
1.48 (0.92 to 2.38)
1.29 (1.00 to 1.67)
1.27 (1.00 to 1.61)
1.72 (0.92 to 3.28)
1.31 (0.90 to 1.91)
1.34 (1.01 to 1.78)
1.09 (0.75 to 1.56)
1.46 (1.09 to 1.96)
1.35 (0.94 to 1.96)
1.25 (0.94 to 1.68)



AER ACTUALITÉS EN RÉANIMATION

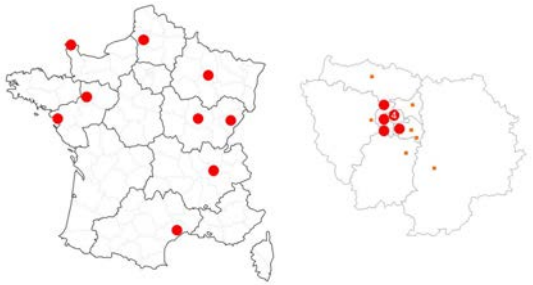
AfterROSC

HYVAPRESS trial

Prof Guillaume Geri - Saclay University, France), PI

OHCA and IHCA
Post-resuscitation shock

- AVP 3d HSHC 7d
- Placebo 3d HSHC 7d
- AVP 3d Placebo 7d
- Placebo 3d Placebo 7d



GOS level at Day 30


CONFERENCE REPORTS AND EXPERT PANEL

European Resuscitation Council and European Society of Intensive Care Medicine guidelines 2021: post-resuscitation care

Jerry P. Nolan[1,2*], Claudio Sandroni[3,4], Bernd W. Böttiger[5], Alain Cariou[6], Tobias Cronberg[7], Hans Friberg[8], Cornelia Genbrugge[9,10], Kirstie Haywood[11], Gisela Lilja[12], Véronique R. M. Moulaert[13], Nikolaos Nikolaou[14], Theresa Mariero Olasveengen[15], Markus B. Skrifvars[16], Fabio Taccone[17] and Jasmeet Soar[18]

Intensive Care Med
https://doi.org/10.1007/s00134-021-06368-4

- All patients should be monitored with an arterial line for continuous BP measurements, and it is reasonable to monitor cardiac output in most unstable patients
- Perform early (as soon as possible) echocardiography in all patients to detect any underlying cardiac pathology and quantify the degree of myocardial dysfunction
- Maintain perfusion with fluids, noradrenaline and/ or dobutamine, depending on individual patient need
- Consider mechanical circulatory support for persisting cardiogenic shock from LV failure if medical treatment is insufficient

AER ACTUALITÉS EN RÉANIMATION

AfterR⊕SC

How to manage arterial pressure after ROSC?

AER ACTUALITÉS EN RÉANIMATION

AfterROSC

AGRESSIONS CÉRÉBRALES SECONDAIRES D'ORIGINE SYSTÉMIQUE

HYPERTHERMIE

DYSGLYCEMIE

HYPER / HYPOCAPNIE

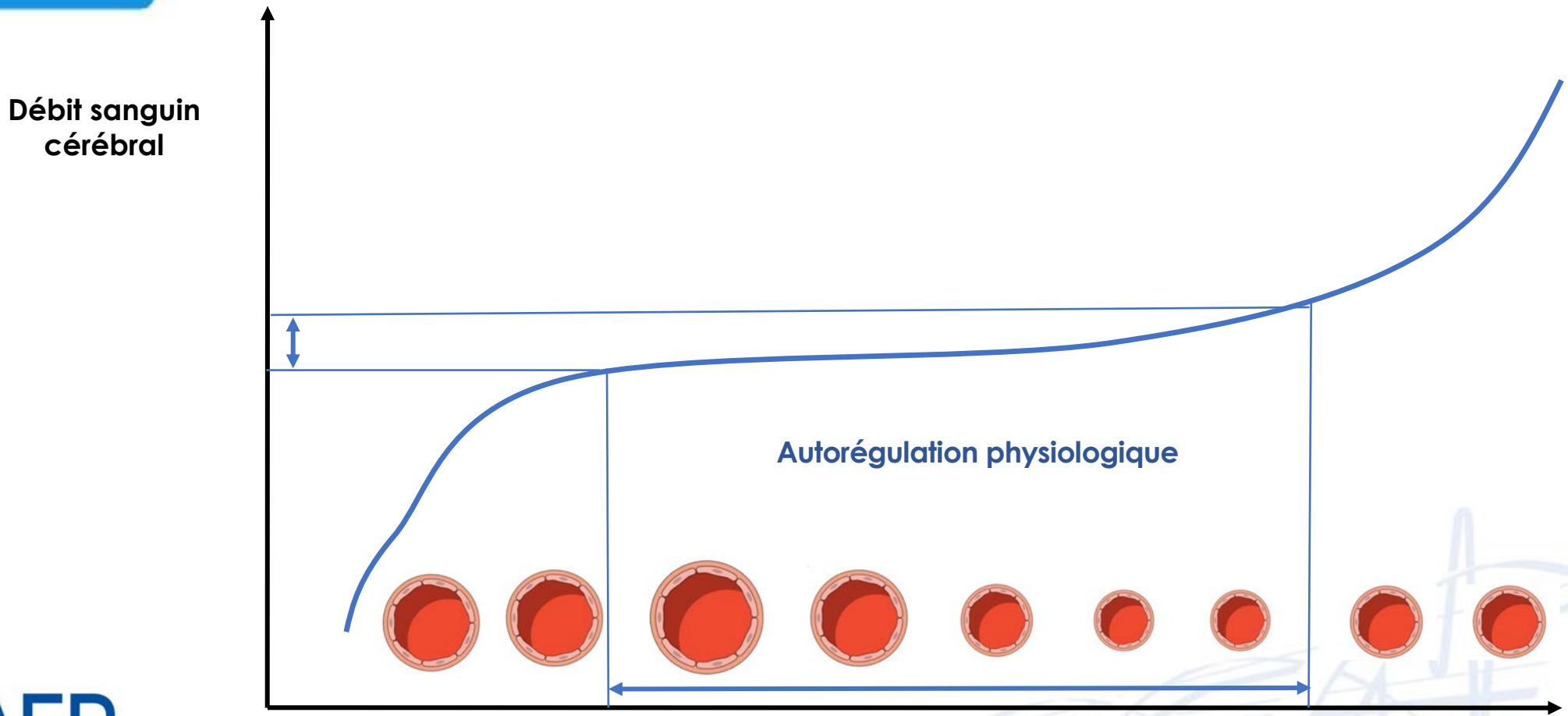
HYPO/HYPEROXIE

HYPOTENSION

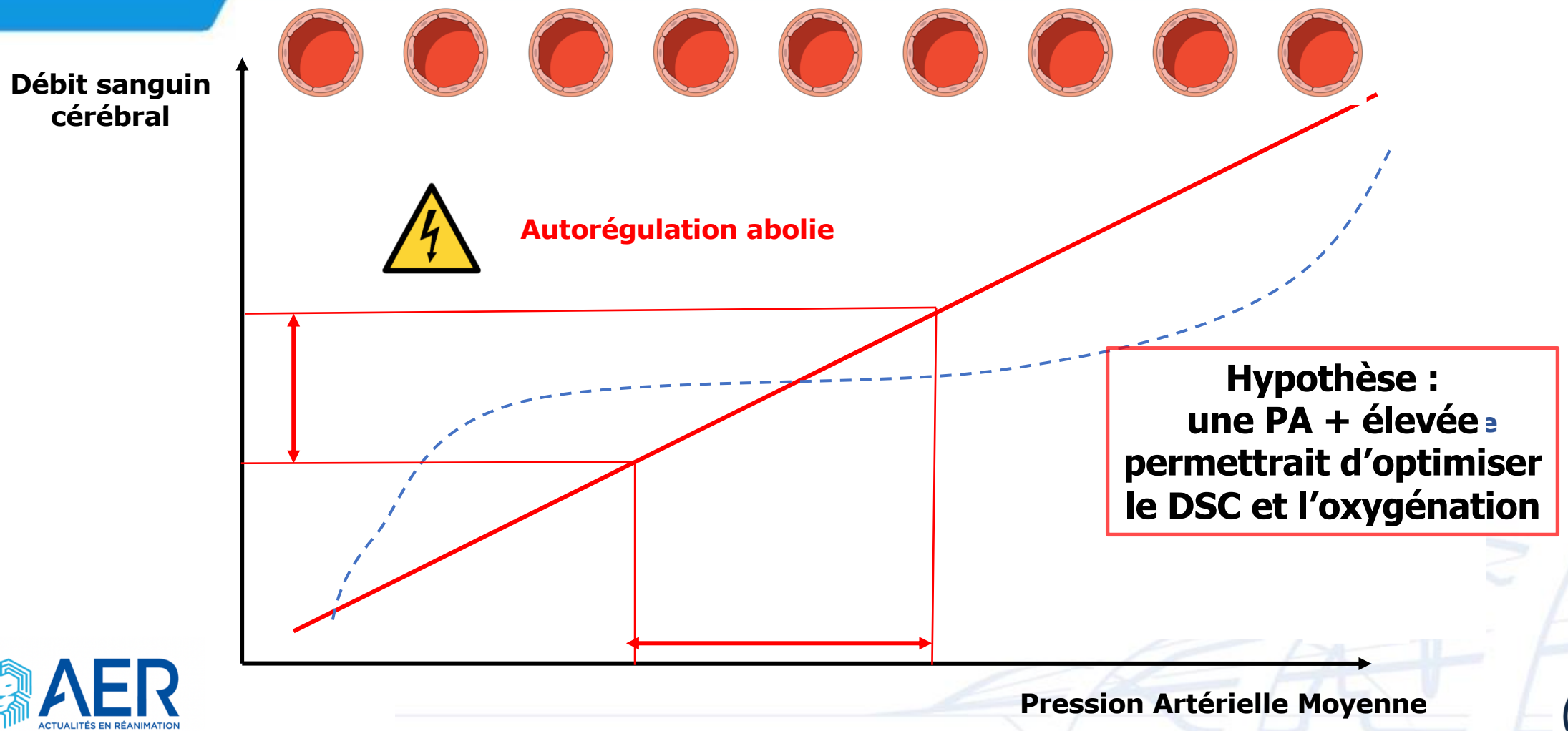
AER ACTUALITÉS EN RÉANIMATION

AfterROSC

AUTO-REGULATION DU DEBIT SANGUIN CEREBRAL



AUTO-RÉGULATION DU DÉBIT SANGUIN CÉRÉBRAL



Hypothèse :
une PA + élevée permettrait d'optimiser le DSC et l'oxygénation

AER ACTUALITÉS EN RÉANIMATION

AfterROSC

Targeting low-normal or high-normal mean arterial pressure after cardiac arrest and resuscitation: a randomized pilot trial

Jakkula P et al. Intensive Care Med 2018

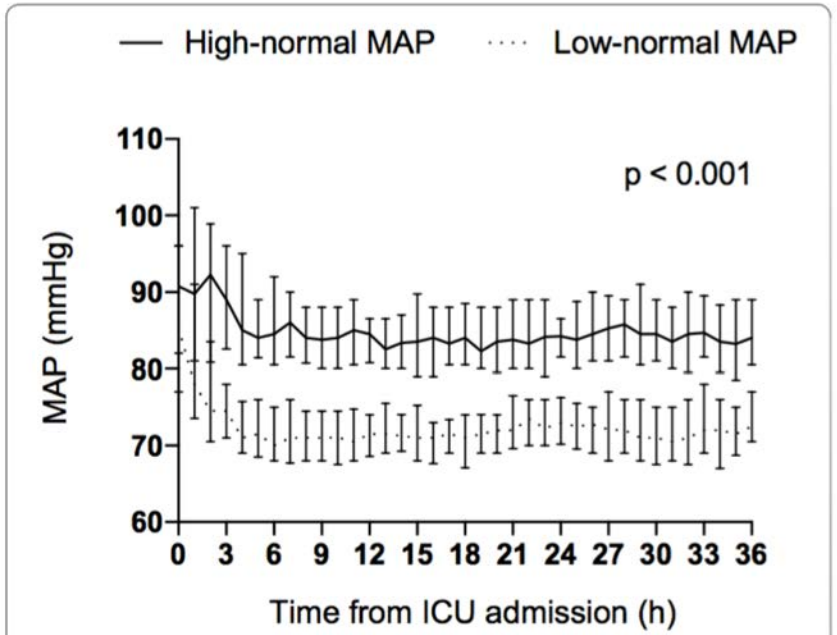


Fig. 2 Median (inter-quartile range) MAP during the intervention in the study groups

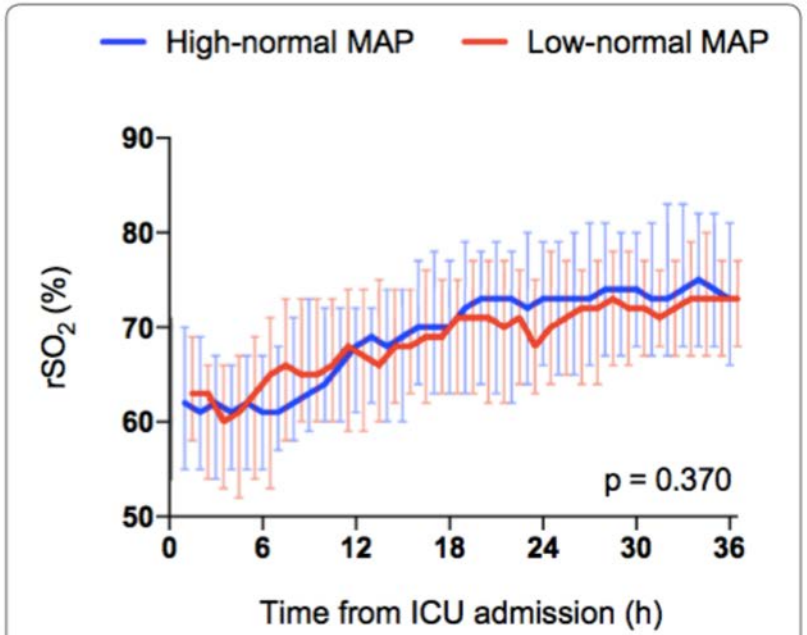


Fig. 6 Median (inter-quartile range) regional cerebral oxygen saturation (rSO_2) during the intervention in the study groups

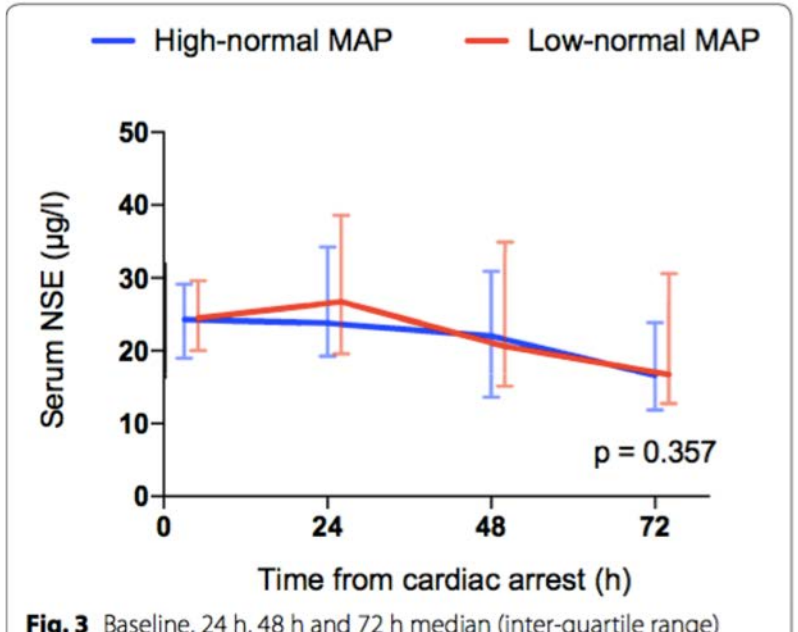


Fig. 3 Baseline, 24 h, 48 h and 72 h median (inter-quartile range) serum neuron-specific enolase (NSE) concentrations for patients allocated to targeting low-normal and high-normal MAP

AER ACTUALITÉS EN RÉANIMATION

AfterR⊛SC

Association of deranged cerebrovascular reactivity with brain injury following cardiac arrest: a post-hoc analysis of the COMACARE trial

Laurikkalala P et al. Crit Care Med 2021

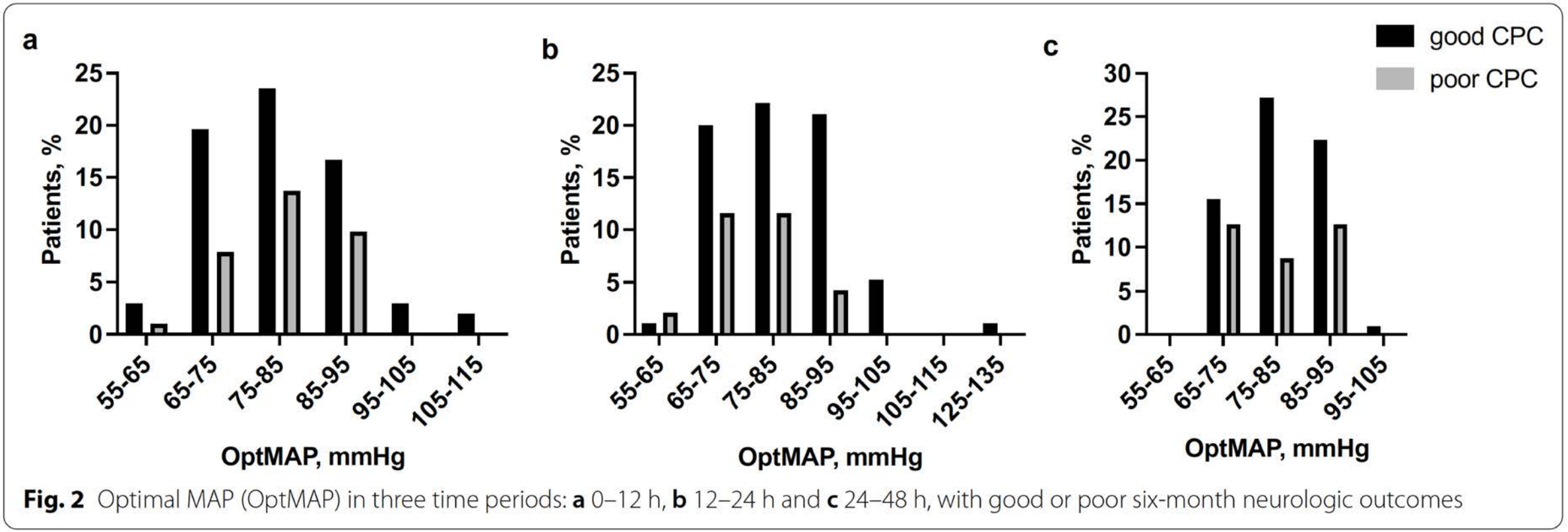
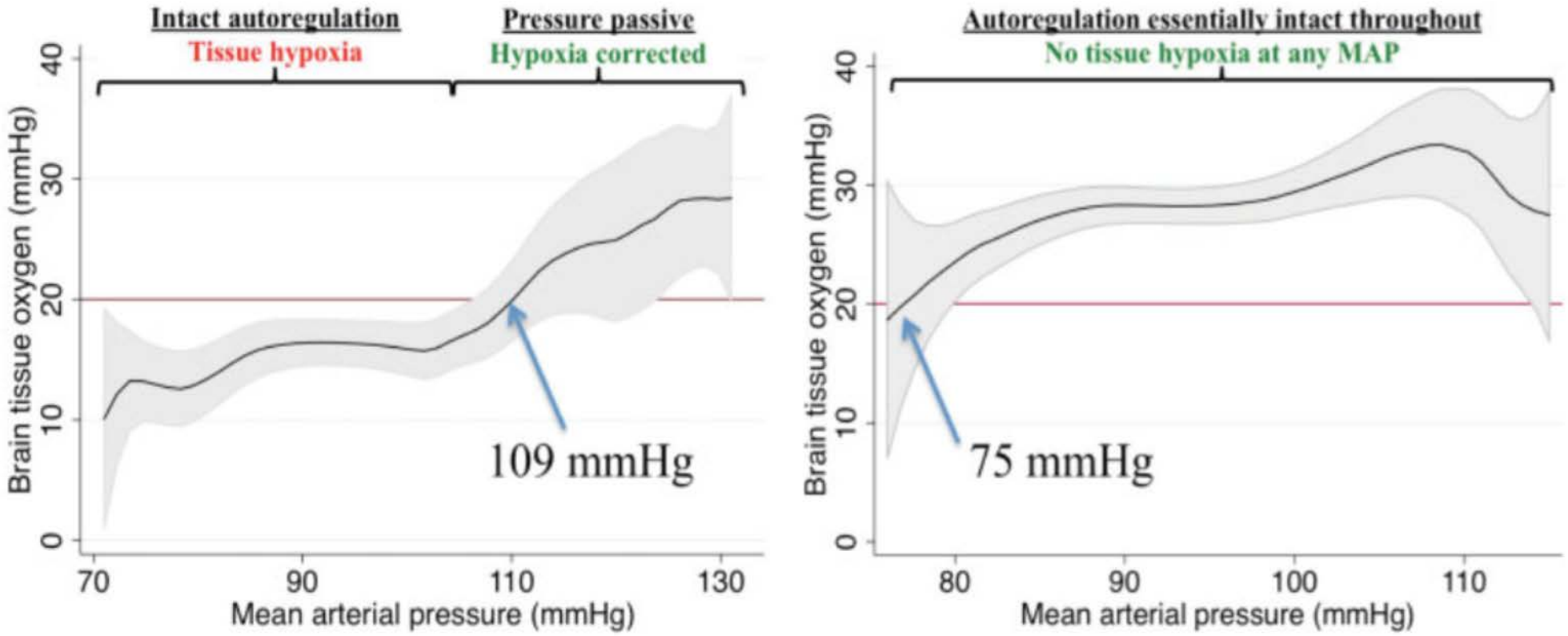


Fig. 2 Optimal MAP (OptMAP) in three time periods: **a** 0–12 h, **b** 12–24 h and **c** 24–48 h, with good or poor six-month neurologic outcomes

Changes in cerebral blood flow autoregulation after cardiac arrest

Elmer J, Callaway CW. Semin Neurol 2017



ONE SIZE DOES NOT FIT ALL !!

Circulation

Part 3: Adult Basic and Advanced Life Support

2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

Recommendation for Blood Pressure Management After ROSC

COR	LOE	Recommendation
2a	B-NR	1. It is preferable to avoid hypotension by maintaining a systolic blood pressure of at least 90 mm Hg and a mean arterial pressure of at least 65 mm Hg in the postresuscitation period.

Circulation. 2020;142(suppl 2):S366–S468.

CONFERENCE REPORTS AND EXPERT PANEL

European Resuscitation Council and European Society of Intensive Care Medicine guidelines 2021: post-resuscitation care

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BLOOD PRESSURE TARGET

2015 GUIDELINES

Target the mean arterial blood pressure to achieve an adequate urine output (1 ml $kg^{-1}h^{-1}$) and normal or decreasing plasma lactate values, taking into consideration the patient's normal blood pressure, the cause of the arrest and the severity of any myocardial dysfunction.

2021 GUIDELINES

Avoid hypotension (MAP <65 mmHg). Target MAP to achieve adequate urine output (>0.5 mL $kg^{-1}h^{-1}$) and normal or decreasing lactate.

Several studies show that hypotension (MAP <65 mmHg) is consistently associated with poor outcome. Although we have stated a threshold value for blood pressure, optimal MAP targets are likely to need to be individualised.

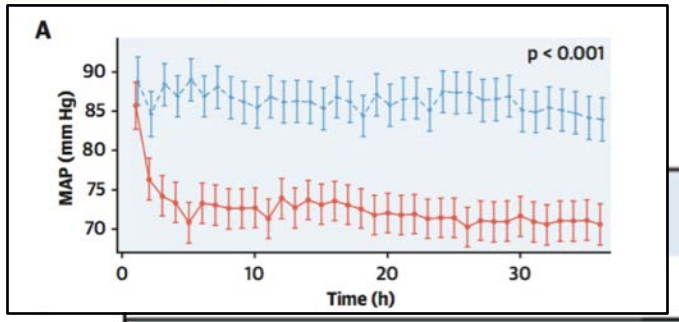
Intensive Care Med
https://doi.org/10.1007/s00134-021-06368-4

AER ACTUALITÉS EN RÉANIMATION

AfterROSC

Optimum blood pressure in patients with shock after acute myocardial infarction and cardiac arrest

Ameloot K et al. JACC 2020



	MAP 80/85 to 100 mm Hg	MAP 65 mm Hg	Treatment Effect	p Value*
Primary endpoint				
Imputed 72 h AUC cTnT, µg.72 h/l	1.14 (0.35 to 2.31)	1.56 (0.61 to 4.72)	-0.42 (-1.12 to 0.00)	0.04
Secondary endpoints				
New onset atrial fibrillation	4/58 (7)	4/61 (7)	1.05 (0.25 to 4.43)	0.94
Recurrent cardiac arrest within 36 h	8/58 (14)	9/61 (15)	0.92 (0.33 to 2.58)	0.88
CPC 1 to 2 180 days	37/58 (64)	33/62 (53)	1.55 (0.74 to 3.22)	0.24
All-cause mortality 180 days	21/58 (36)	25/62 (40)	0.84 (0.40 to 1.75)	0.63

Values are mean (interquartile range) or n/N (%). *p values for all secondary endpoints are exploratory.

AUC = area under curve; cTnT = Cardiac troponin T; CPC = cerebral performance category; IQR = interquartile range.

AER ACTUALITÉS EN RÉANIMATION

AfterROSC

CONFERENCE REPORTS AND EXPERT PANEL

European Resuscitation Council and European Society of Intensive Care Medicine guidelines 2021: post-resuscitation care

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Key messages

- Continuous monitoring (arterial line +/- CO)
- Echocardiography (as soon as possible) in all pts
- Avoid hypotension <65 mmHg
- Target MAP to achieve adequate urine output (>0.5 mL kg1 h1) and normal or decreasing lactate
- Don not treat bradycardia induced by TTM if BP, lactate, or SvO2 is adequate
- Maintain perfusion with fluids, noradrenaline and/or dobutamine, depending on individual patient need
- Do not give steroids routinely

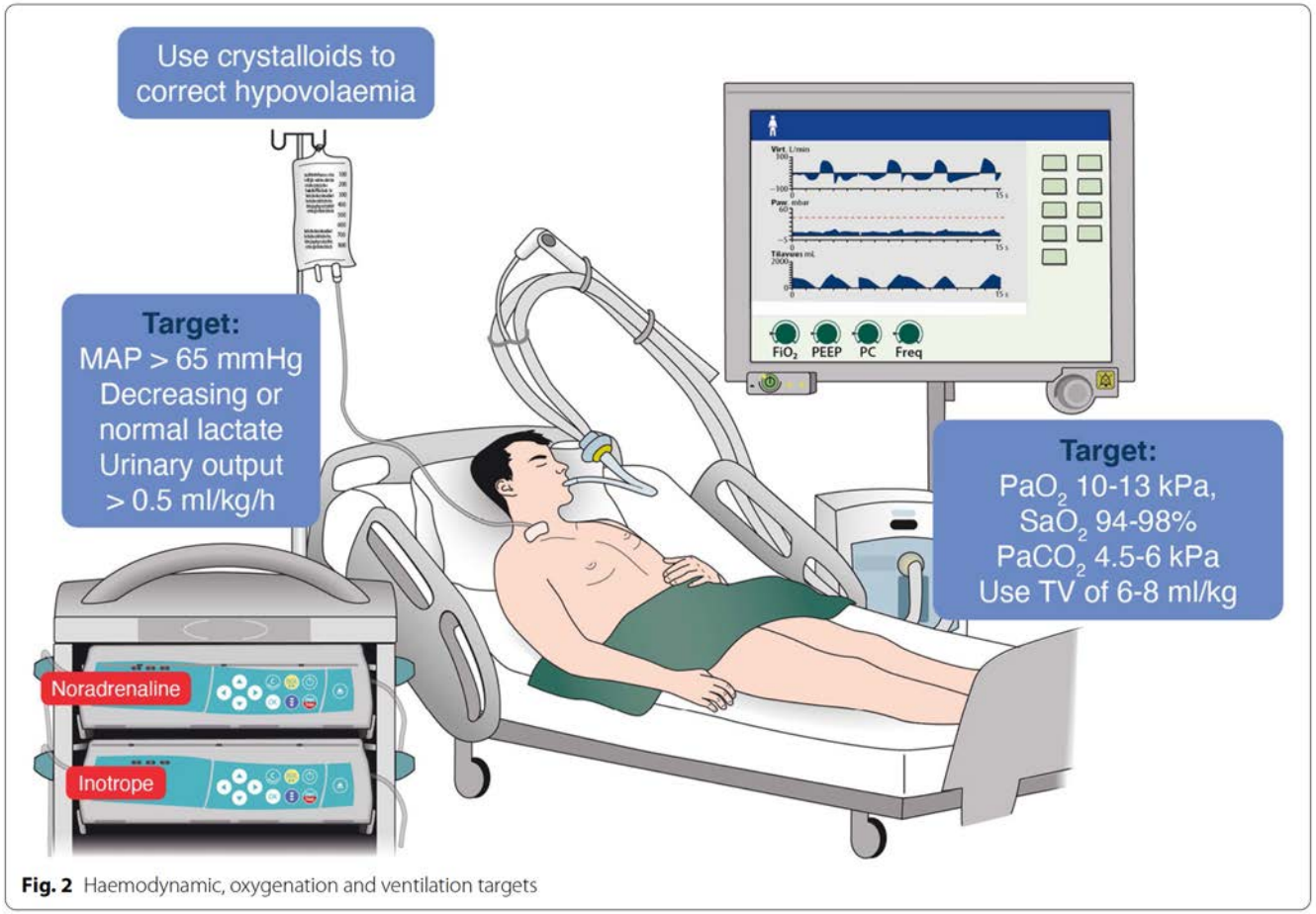

Fig. 2 Haemodynamic, oxygenation and ventilation targets

Intensive Care Med
https://doi.org/10.1007/s00134-021-06368-4