Pacient po srdeční zástavě: SKG ano nebo ne

Blok: Kvůli čemu nejčastěji voláte intervenčního kardiologa

P. Červinka

Krajská zdravotní a.s., Masarykova nemocnice v Ústí nad Labem o.z

a UJEP Ústí nad Labem

(XXVI sjezd ČKS, 6,-9.5. 2018, Brno)

SKG/PCI po srdeční zástavě

- *Primární (direktní PCI) je metodou volby u nemocných se STEMI*

European Heart Journal (2014) 35, 2541–2619
doi:10.1093/eurheartj/ehu278

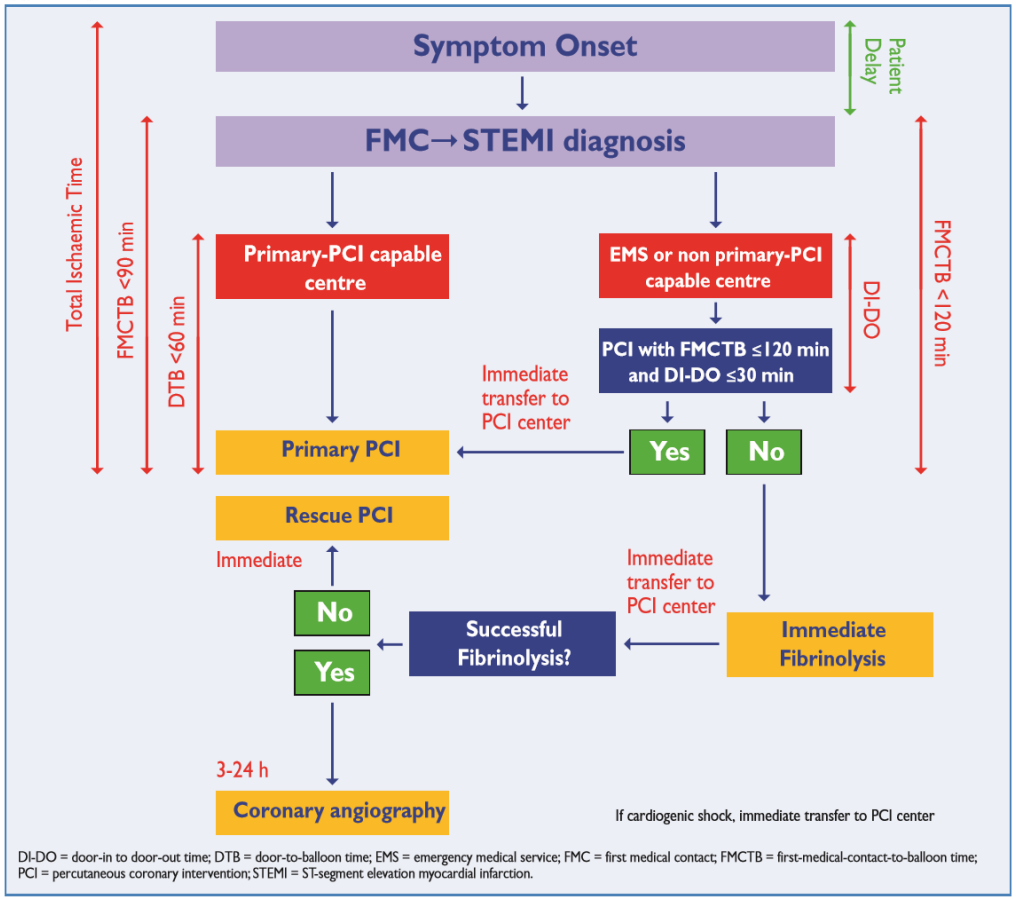
ESC/EACTS GUIDELINES

2014 ESC/EACTS Guidelines on myocardial revascularization

The Task Force on Myocardial Revascularization of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS)

Primary PCI for myocardial reperfusion in STEMI: indications and logistics

Recommendations	Class[a]	Level[b]	Ref[c]
Indication			
Reperfusion therapy is indicated in all patients with time from symptom onset <12 hours duration and persistent ST-segment elevation or (presumed) new LBBB.	I	A	207–209
Primary PCI is the recommended reperfusion therapy over fibrinolysis if performed by an experienced team in a timely fashion.	I	A	219,220
In patients with time from symptom onset >12 hours, primary PCI is indicated in the presence of continuing ischaemia, life-threatening arrhythmias or if pain and ECG changes have been stuttering.	I	C	
Primary PCI is indicated for patients with severe acute heart failure or cardiogenic shock due to STEMI independent from time delay of symptom onset.	I	B	221
Reperfusion therapy with primary PCI should be considered in patients presenting late (12–48 hours) after symptom onset.	IIa	B	222–224



Pacient po srdeční zástavě

Pacient po srdeční zástavě: SKG ano nebo ne:

- ???

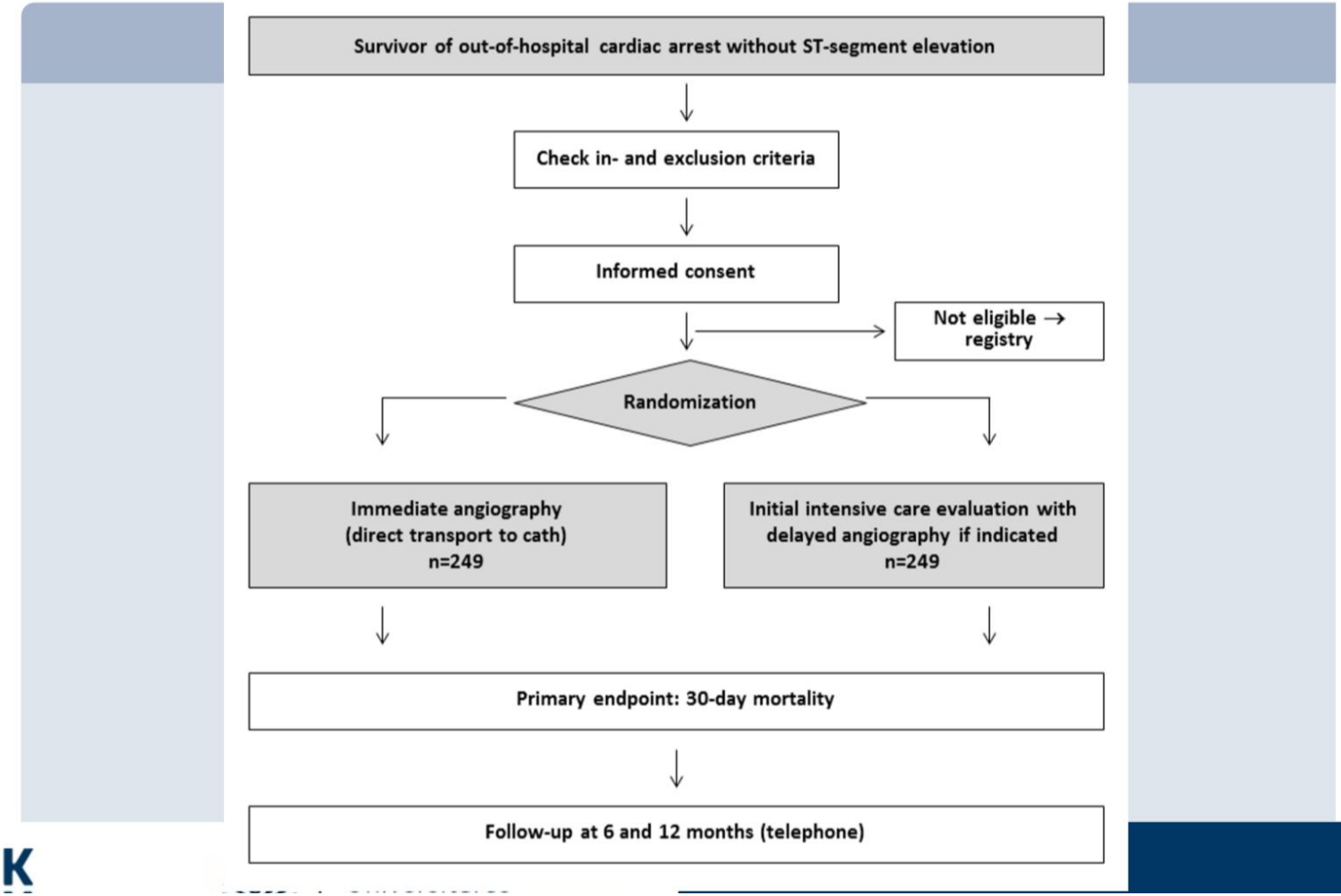
- chybí randomizované studie

- pouze data z regitrů

Pacient po srdeční zástavě

DZHK
DEUTSCHES ZENTRUM FÜR
HERZ-KREISLAUF-FORSCHUNG E.V.

TOMAHAWK flow



Pacient po srdeční zástavě

Coronary angiography

IMMEDIATE CORONARY ANGIOGRAPHY IN SURVIVORS OF OUT-OF-HOSPITAL CARDIAC ARREST

CHRISTIAN M. SPAULDING, M.D., LUC-MARIE JOLY, M.D., ALAIN ROSENBERG, M.D., MEHRAN MONCHI, M.D., SIMON N. WEBER, M.D., JEAN-FRANÇOIS A. DHAINAUT, M.D., PH.D., AND PIERRE CARLI, M.D.

- 1994-1996: Prospective study performed in Paris France
- All survivors of OHCA with no obvious non cardiac cause of arrest regardless of clinical and ECG data
- Aged between 30 and 75 years of age
- Coronary angiography at admission followed if necessary by PCI

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Spaulding et al. N Engl J Med 1997;336;1629-33.

Pacient po srdeční zástavě

Coronary angiography

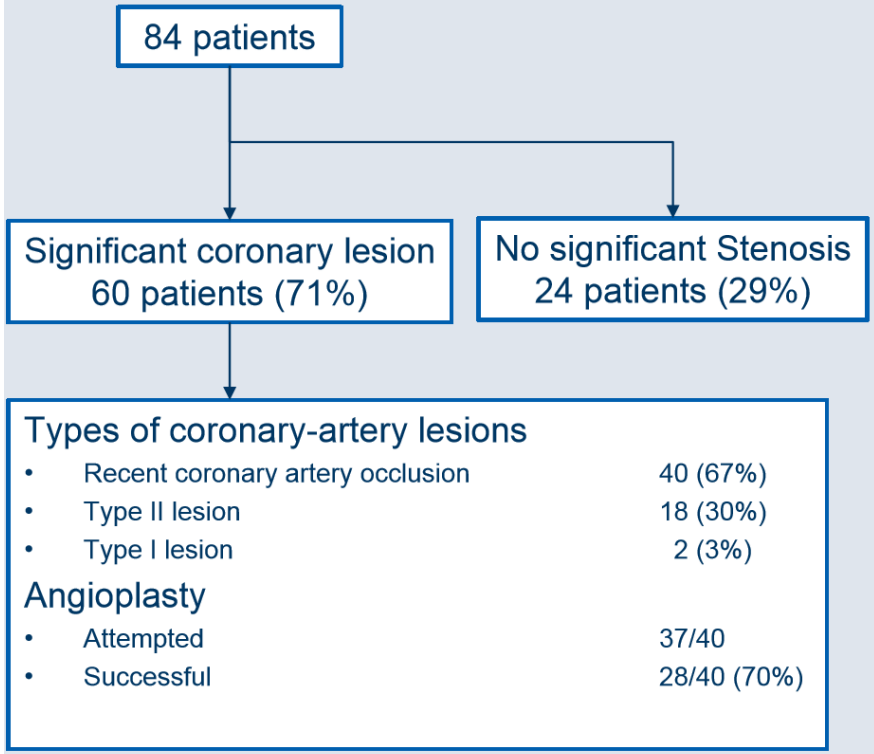

TABLE 4. RELATION BETWEEN ST-SEGMENT ELEVATION, CHEST PAIN BEFORE CARDIAC ARREST, AND RECENT CORONARY-ARTERY OCCLUSION IN THE 84 PATIENTS WHO UNDERWENT CORONARY ANGIOGRAPHY.*

VARIABLE	NO. OF PATIENTS	NO. WITH RECENT CORONARY-ARTERY OCCLUSION (%)
ST-segment elevation and chest pain		
Present	15	13 (87)
Absent	69	27 (39)
ST-segment elevation or chest pain		
Present	49	31 (63)
Absent	35	9 (26)

*ST-segment elevation was defined as an elevation of more than 1 mm in two contiguous leads.

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Spaulding et al. N Engl J Med 1997;336;1629-33.

Pacient po srdeční zástavě

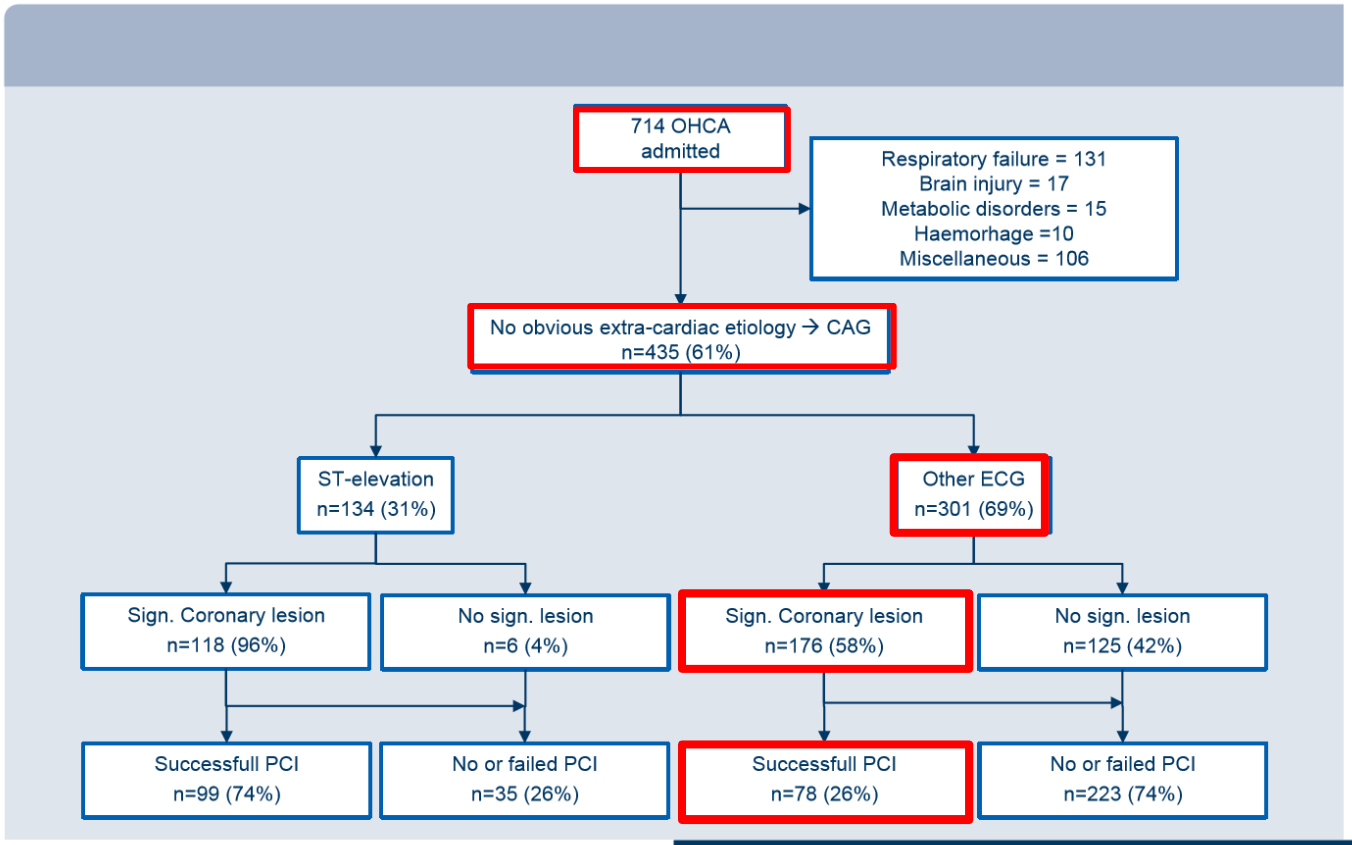
Predictors of survival

	OR	95%CI	P-value
Absence of the need for inotropic drugs during transportation to the hospital	3.6	1.10-11.8	0.03
Delay between onset of cardiac arrest and ROSC (per 1 min)	*1.1*	*1.02-1.12*	0.003
Successful coronary angioplasty	5.2	1.10-24.5	0.04

Spaulding et al. N Engl J Med 1997;336;1629-33

Pacient po srdeční zástavě

Findings in patients after OHCA



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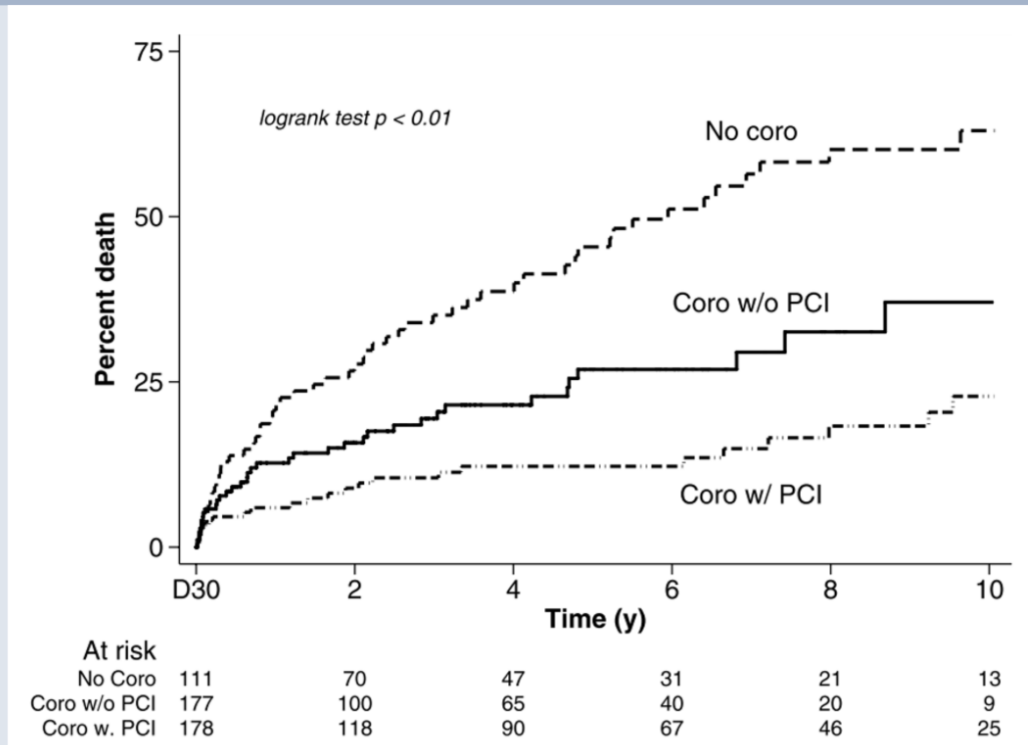
Dumas et al. Circ Cardiovasc Interv 2010;3;200-7.

Pacient po srdeční zástavě

NSTEMI and PCI after OHCA



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Geri et al. Circ Cardiovasc Interv 2015;8;

Pacient po srdeční zástavě

Impact of early angiography on outcome

		OR	95%CI	P-value
Spaulding et al., 1997		PCI: 5.2	1.10-24.5	0.04
Werling et al., 2006		CAG: 9.1	3.6-21.5	<0.001*
Merchant et al., 2008	With STE	CAG: 3.8	1.35-10.9	<0.05
	Without STE	CAG: 3.01	0.84-10.8	0.09
Reynolds et al., 2009		CAG: 2.16	1.12-4.19	<0.02
Anyfantakis et al., 2009		PCI no predictor of survival in multivariable analysis		
Dumas et al., 2010		PCI: 2.06	1.16-3.66	0.013
Nanjayya et al., 2011		CAG: 1.32	0.26-7.37	0.78
Tømte et al., 2011		CAG: 11.21	2.96-42.49	<0.001
Stub et al., 2011		CAG: 7.6	3.2-17.5	0.01*
Strote et al., 2011		Tertile with highvs. low CAG	73 vs 3%	0.001
Zanuttini et al., 2012		PCI success: 2.32	1.23-4.38	0.009
Cronier et al., 2011		CAG: 3.33	1.27-9.09	0.01
Bro-Jeppesen et al., 2012		CAG, no STE: 0.69	0.4-1.2	0.18
Søholm et al., 2013		Univariat significant	Multivariable no significance	
Hollenbeck et al., 2014		CAG: 2.86	1.42-5.56	0.003
Callaway et al., 2014		CAG: 1.69	1.06-2.70	<0.005

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Rab et al. J Am Coll Cardiol 2015;66;62-73

Pacient po srdeční zástavě

Angiographic findings in NSTEMI after CA?

TABLE 2 Angiographic Findings in Patients With Cardiac Arrest and No ST-Segment Elevation on ECG

First Author, Year (Ref. #)	Acute Occlusion	Culprit Lesion*	Significant CAD†
Merchant et al., 2008 (55)	6/17 (35)	–	10/17 (55)
Reynolds et al., 2009 (14)	–	–	31/54 (57)
Anyfantakis et al., 2009 (56)	–	–	27/44 (61)
Radsel et al., 2011 (31)	4/54 (7)	13/54 (24)	32/54 (59)
Bro-Jeppesen et al., 2012 (30)	–	–	43/82 (52)
Dumas et al., 2010 (3)	–	–	176/301 (58)
Hollenbeck et al., 2014 (25)	44/163 (27)	–	–
Kern et al., 2015 (52)	23	33	–
Total (%)	23	29	58

Values are n/N (%) or %. *Defined as acute occlusion or irregular plaque morphology with or without thrombus. †Defined according to the definition used in each study.

CAD = coronary artery disease; ECG = electrocardiogram.

Rab et al. J Am Coll Cardiol 2015;66;62-73.

Pacient po srdeční zástavě

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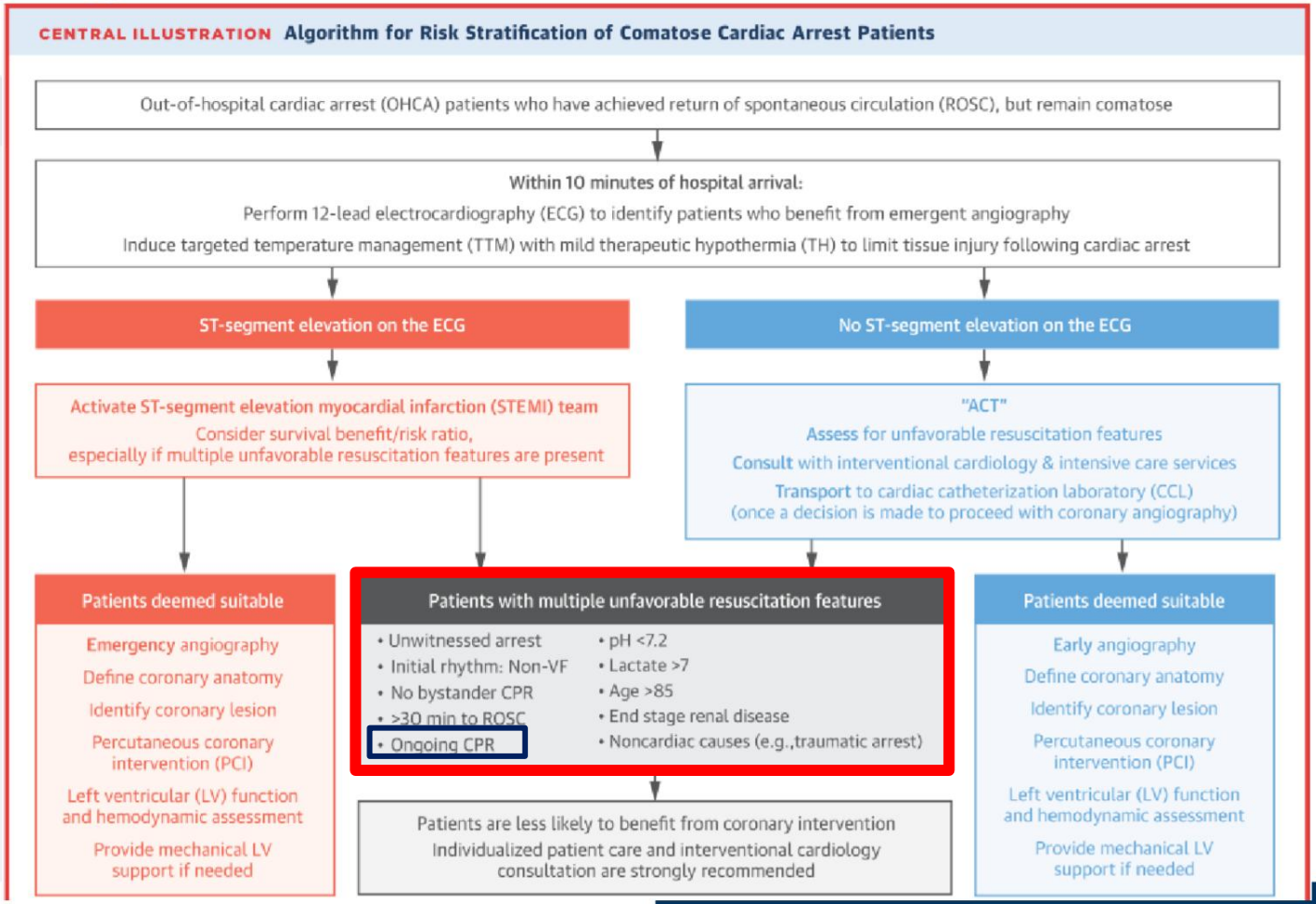
15.1.3 Revascularization after out-of-hospital cardiac arrest

Approximately 70% of survivors of out-of-hospital cardiac arrest have CAD, with acute vessel occlusion observed in 50%.[533] Multiple non-randomized studies suggest that emergency coronary angiography and PCI after out-of-hospital cardiac arrest yields a favourable survival rate of up to 60% at 1 year, which is considerably higher than the 25% overall survival rate in patients with aborted cardiac arrest.[534,535] More recent data suggest that almost one-quarter of patients, resuscitated from cardiac arrest but without ST-segment elevation, show a culprit lesion (either vessel occlusion or irregular lesion).[536,537] Notably, in the prospective Parisian Region Out of Hospital Cardiac Arrest (PROCAT) registry, 96% of patients with STEMI and 58% without STEMI after out-of-hospital cardiac arrest revealed at least one significant coronary artery lesion, and hospital survival rates were significantly higher if immediate PCI was performed successfully.[538,539] Thus, in survivors of out-of-hospital cardiac arrest, early coronary angiography and PCI—if appropriate—should be performed irrespective of the ECG pattern if no obvious non-cardiac cause of the arrhythmia is present.[540]

Pacient po srdeční zástavě

Algorithm in OHCA : individuální, konzultace RZP – kat lab



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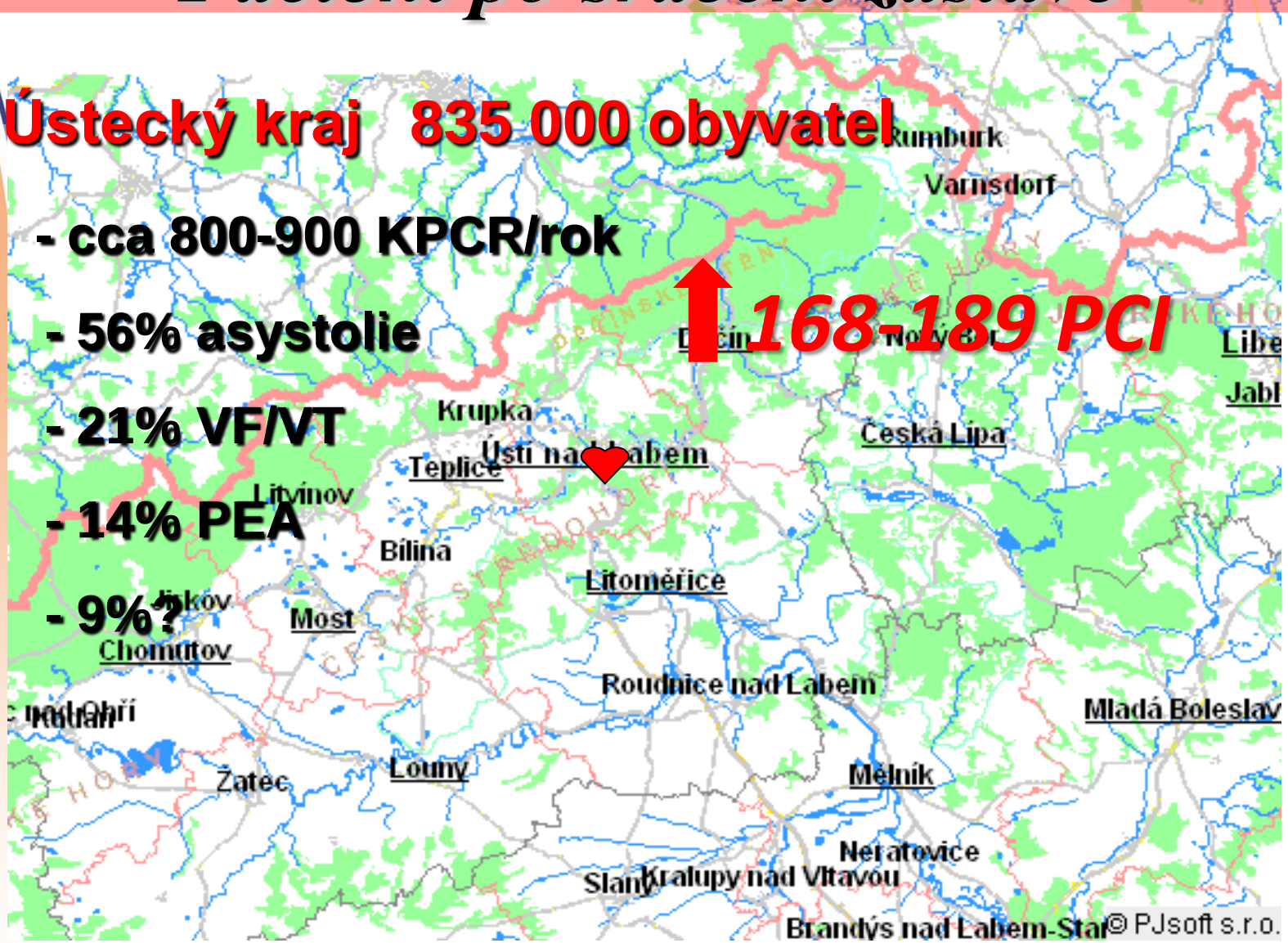
Rab et al. J Am Coll Cardiol 2015;66;62-73.

Pacient po srdeční zástavě



Pacient po srdeční zástavě

K zapamatování:

- ✓ *ICHS až u 60% nemocných po srdeční zástavě bez jasného EKG nálezu; z toho uzávěr tepny u 10-35%, PCI možná přibližně u 30%.*
- ✓ *Nemocní s CAG/PCI mají lepší prognózu*
- ✓ *Individuální přístup - **algoritmus** – **ano***
(svědci, kontinuální resuscitace, VF/KT, KPCR<30 min, <80 let, CHRI, laktát<7, ph>7,2)
- ✓ *Výsledky random. studie TOMAHAWK studie v r. 2019*


Děkuji za pozornost
B