Kardiogení šok - strategie revaskularizace .

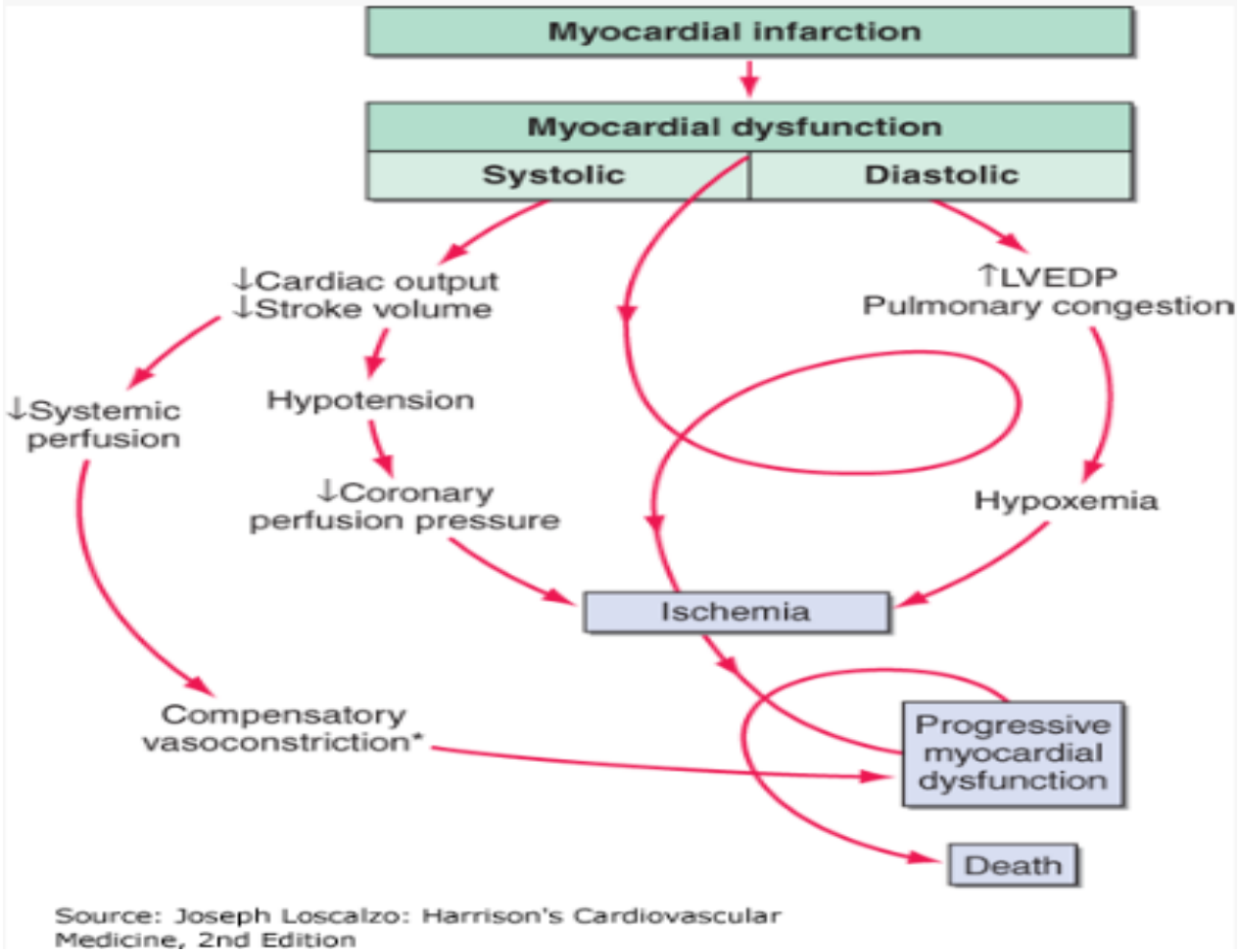
V. Hraboš
Klinika kardiologie
Krajská zdravotní a.s., Masarykova nemocnice v Ústí nad Labem o.z.

Definice kardiogeního šoku

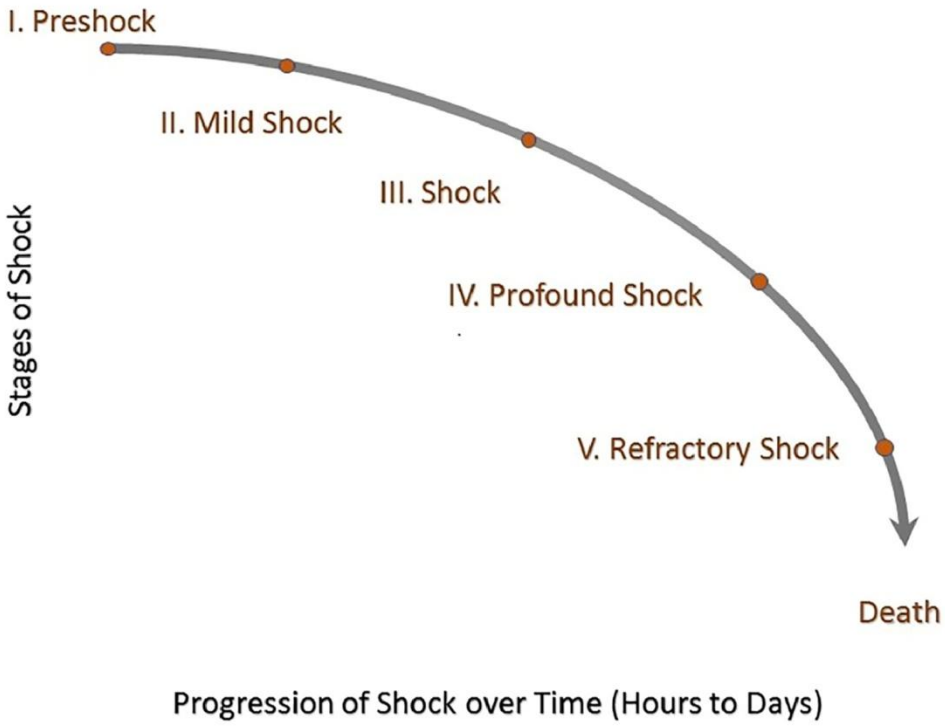
SHOCK Trial (1999)[3]

- SBP <90 mm Hg for >30 min or vasopressor support to maintain SBP >90 mm Hg
- Evidence of end-organ damage (UO <30 mL/h or cool extremities)
- Hemodynamic criteria: CI <2.2 and PCWP >15 mm Hg

Patofyziologie-klinika



Patofyziologie-klinika CS



I. Preshock-Worsening Heart Failure:
Diuretics/Inodilators

II. Mild Shock-Hypotension:
Inotropes/Vasopressors+/-IABP, Impella CP

III. Shock-Lactic Acidosis, Tissue Hypoperfusion:
Tandem Heart, Impella 5.0, CentriMag, RotaFlow, ECMO

IV. Profound Shock-End Organ Failure:
CentriMag, RotaFlow, ECMO

V. Refractory Shock-Vasodilation, Multiorgan Failure, Refractory Hypotension:
Assess for futility of Care

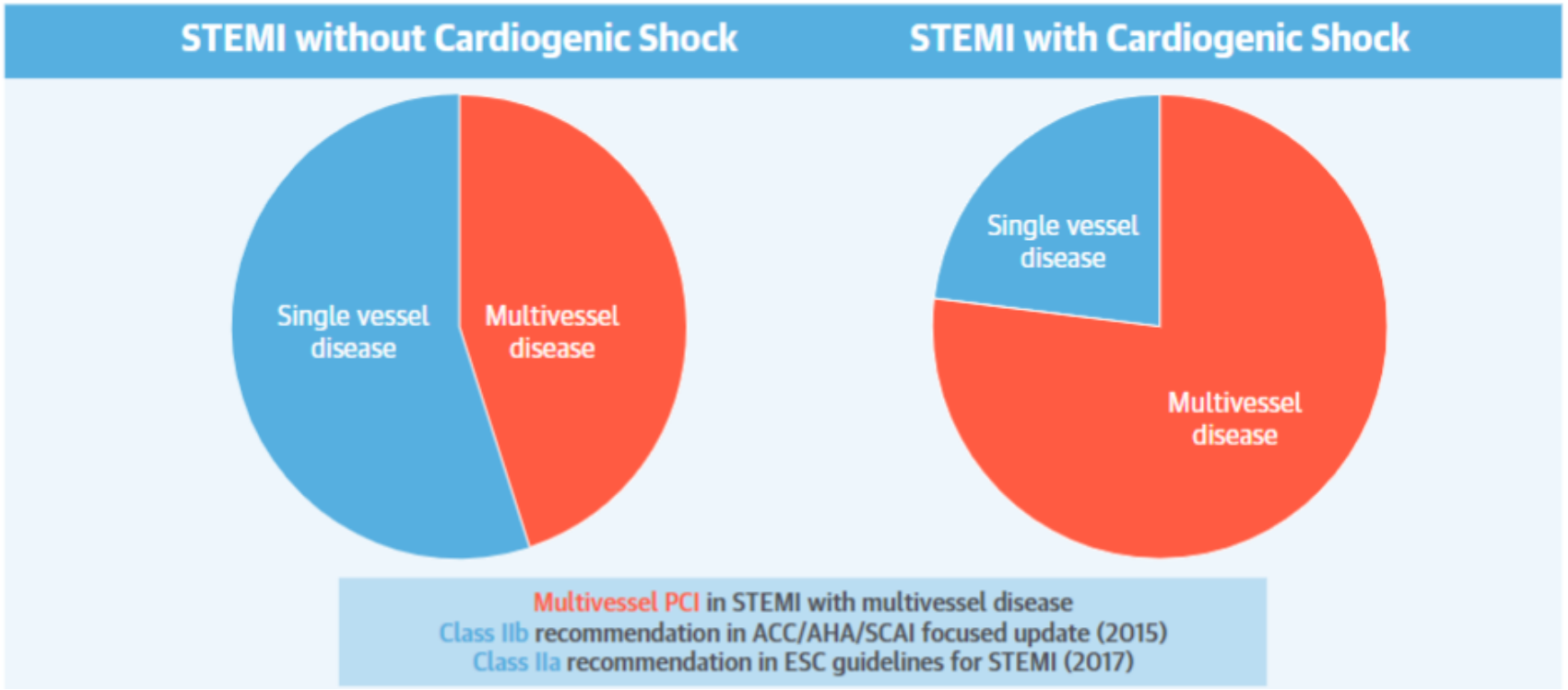
Kardiogení šok

- 5-10% nemocných s AIM má CS
- vysoká mortalita 28-45%
- 40-60% nemocných s AIM má MVD a horší prognózu
- 80% nemocných s kardiogením šokem má MVD

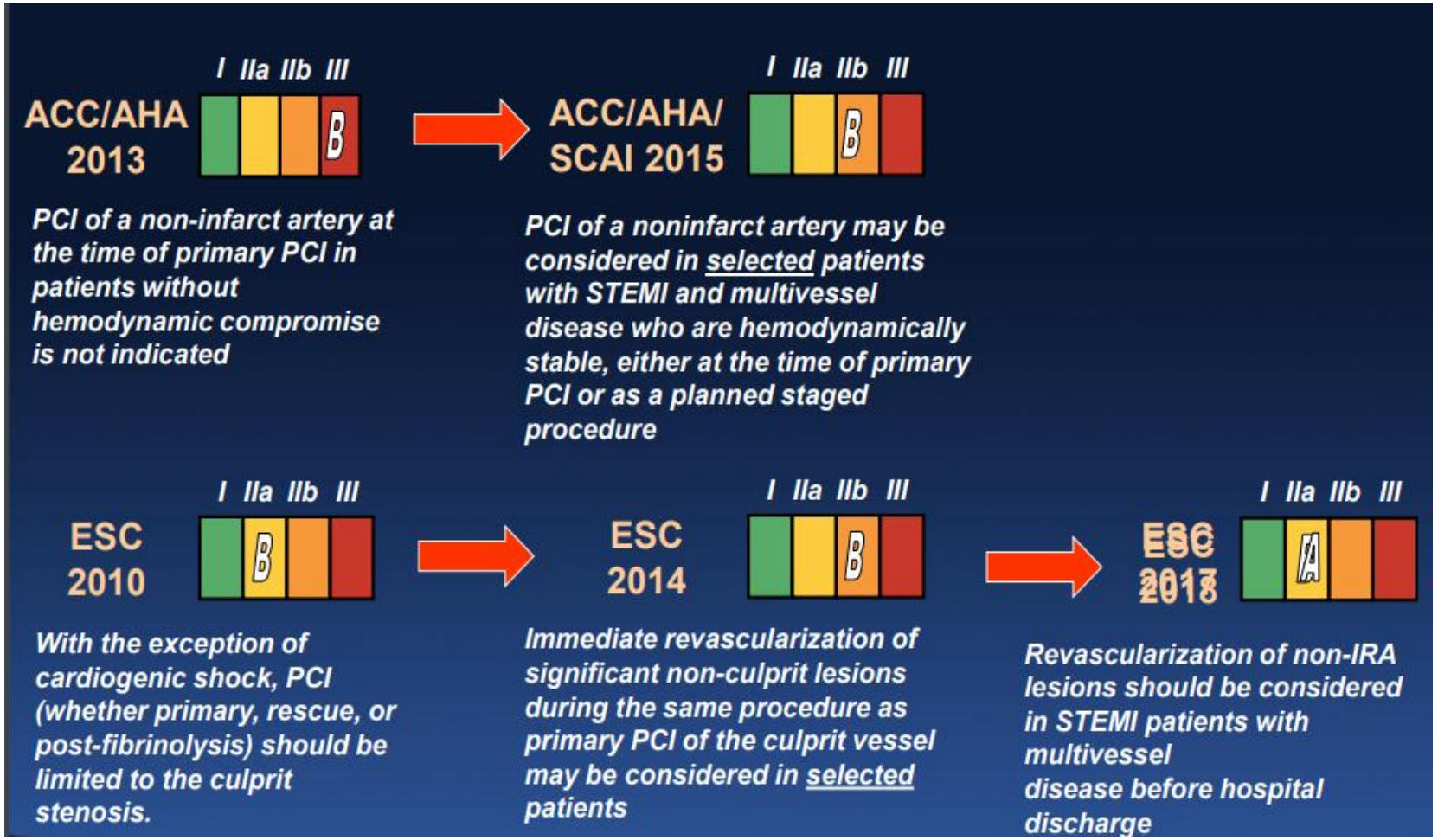
MVD jako rizikový faktor CS

Lee et al. MV-PCI in STEMI with CS; JACC 2/2018

CENTRAL ILLUSTRATION **Prognostic Impact of Multivessel PCI in Patients With STEMI With Multivessel Disease Accompanied With Cardiogenic Shock**



STEMI bez kardiogeního šoku „culprit only“ vs MV-PCI



2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation

Non-IRA strategy		
Routine revascularization of non-IRA lesions should be considered in STEMI patients with multivessel disease before hospital discharge.[167–173]	IIa	A
Non-IRA PCI during the index procedure should be considered in patients with cardiogenic shock.	IIa	C
CABG should be considered in patients with ongoing ischaemia and large areas of jeopardized myocardium if PCI of the IRA cannot be performed.	IIa	C

ESC European Society of Cardiology
European Heart Journal (2018) 00, 1–96
doi:10.1093/eurheartj/ehy394

2018 ESC/EACTS Guidelines on myocardial revascularization

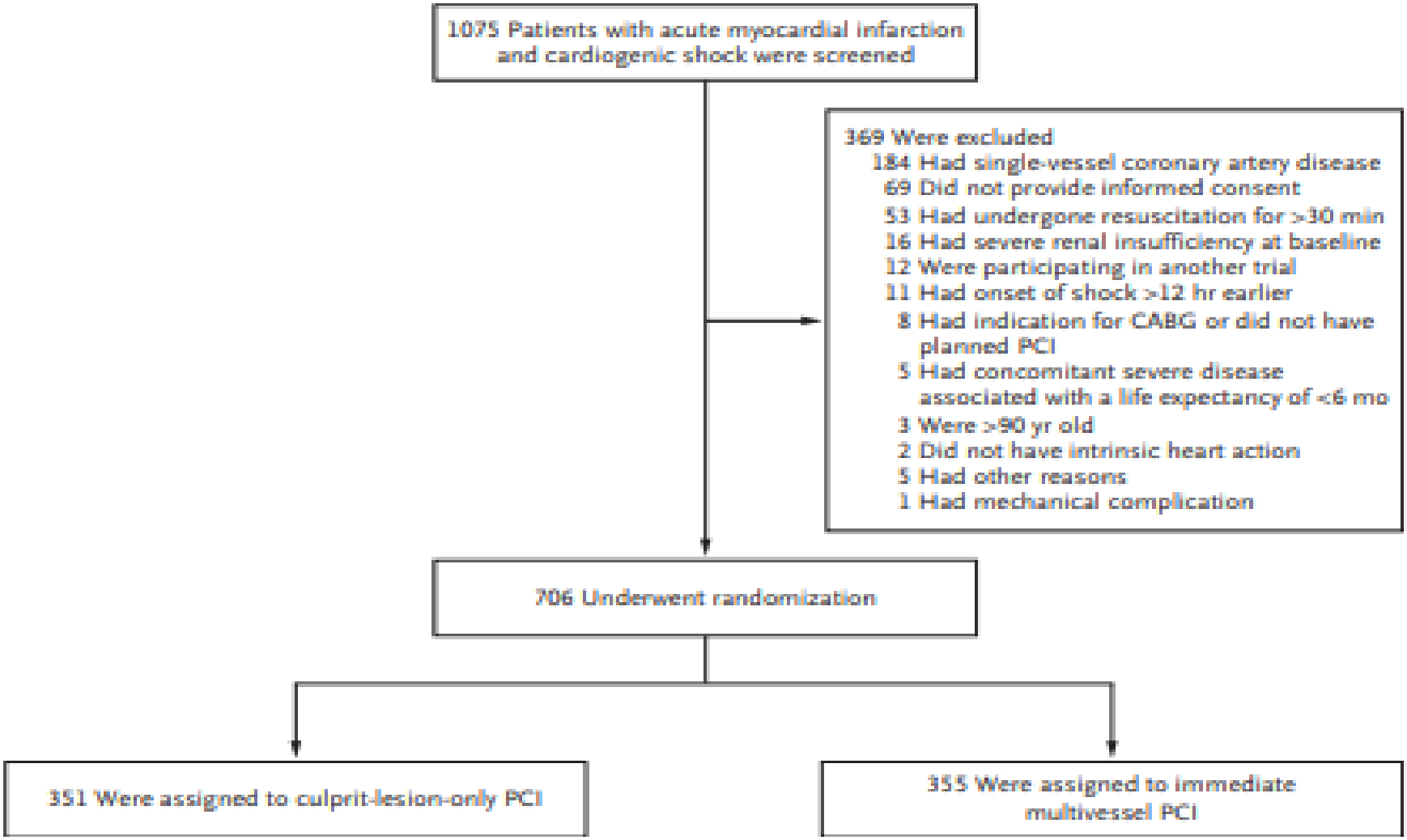
Primary percutaneous coronary intervention for myocardial reperfusion in ST-elevation myocardial infarction: procedural aspects (strategy and technique)

Recommendations	Class[a]	Level[b]
Strategy		
Routine revascularization of non-IRA lesions should be considered in patients with multivessel disease before hospital discharge.[211–214]	IIa	A
CABG should be considered in patients with ongoing ischaemia and large areas of jeopardized myocardium if PCI of the IRA cannot be performed.	IIa	C
In cardiogenic shock, routine revascularization of non-IRA lesions is not recommended during primary PCI.[190]	III	B
Technique		
Routine use of thrombus aspiration is not recommended.[223–226,228]	III	A

CABG = coronary artery bypass grafting; IRA = infarct-related artery; PCI = percutaneous coronary intervention; STEMI = ST-segment elevation myocardial infarction.
[a]Class of recommendation.
[b]Level of evidence.

CULPRIT – SHOCK

Thiele H. et al.; NEJM DEC 21, 2017



CULPRIT – SHOCK

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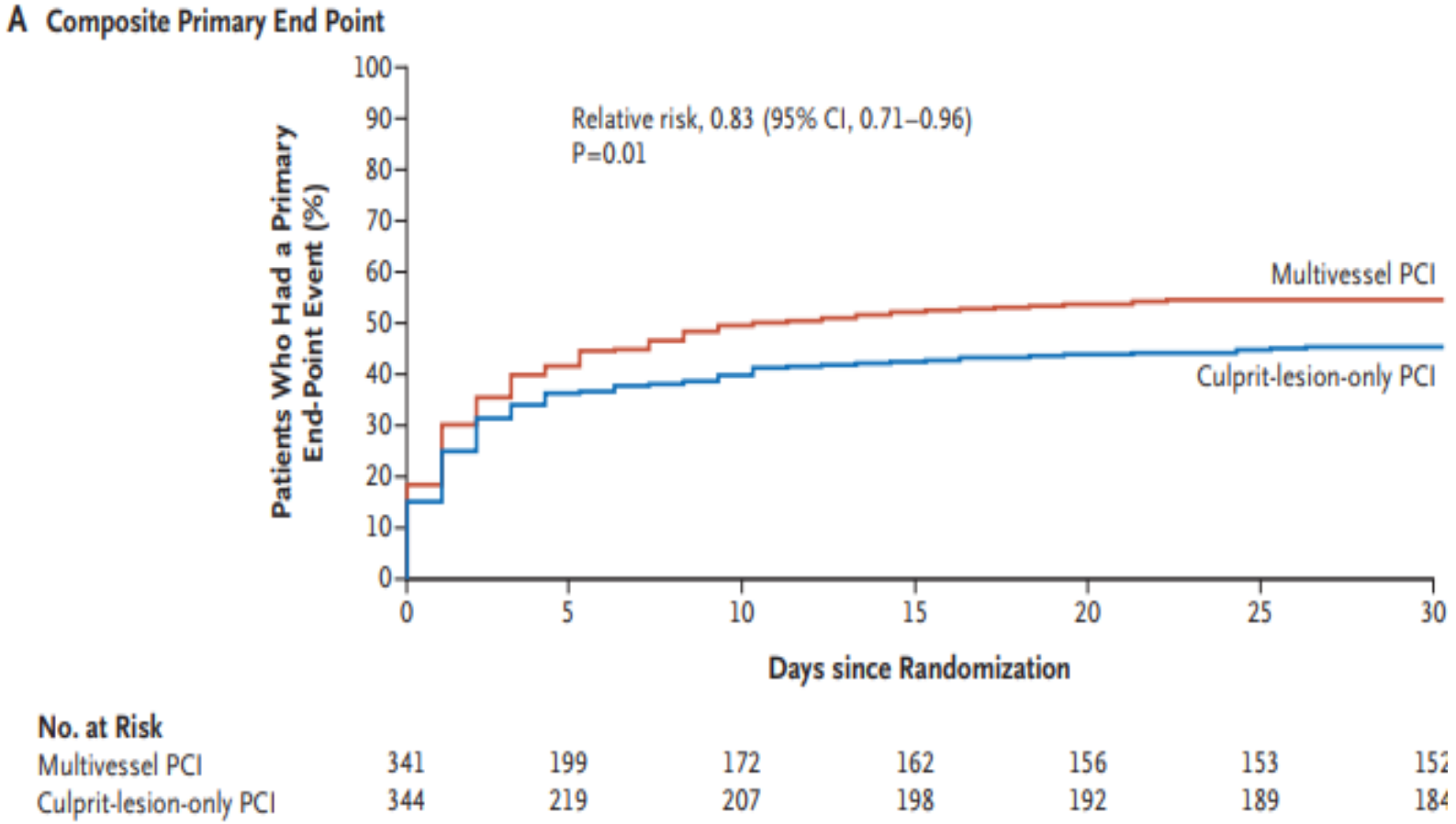

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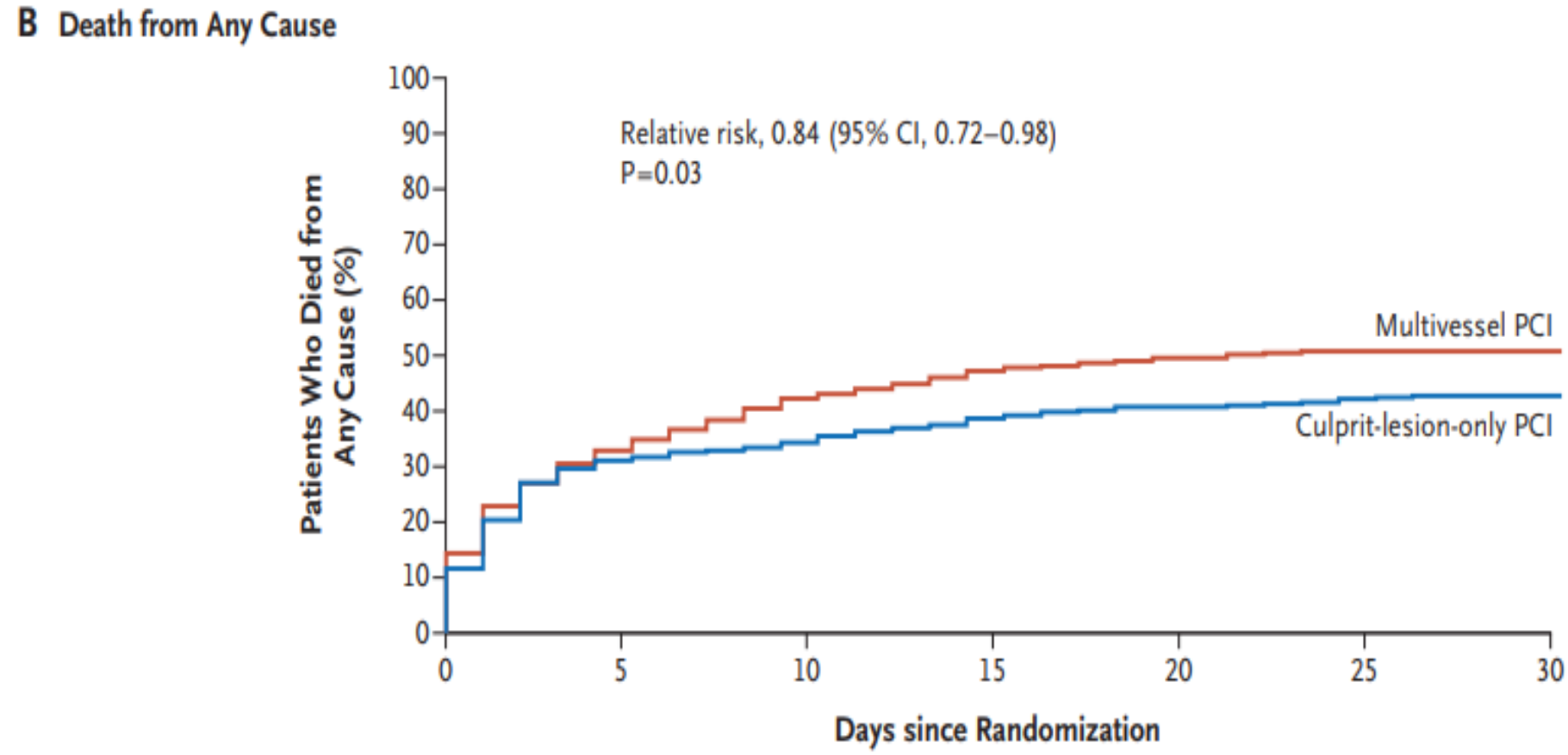


CULPRIT – SHOCK

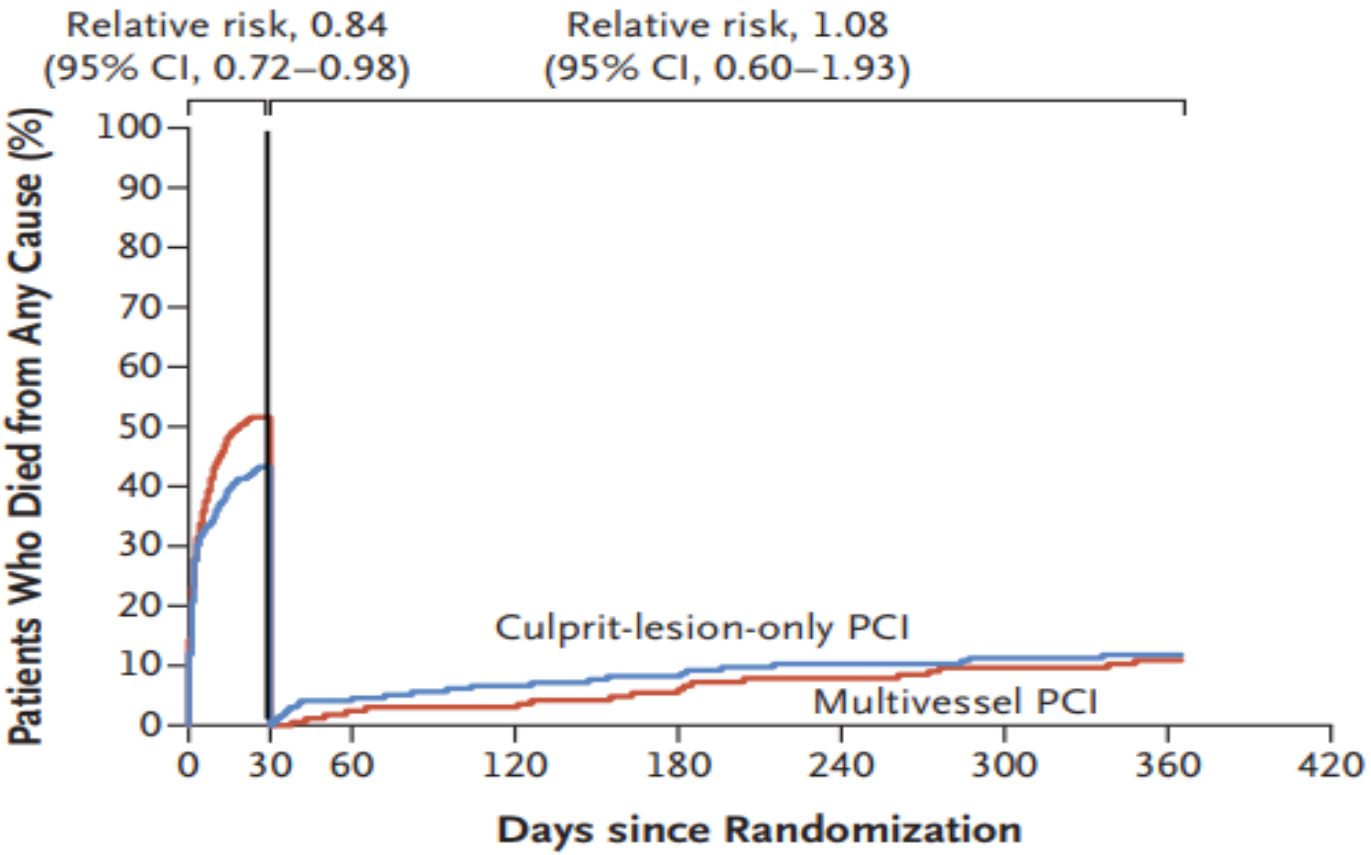
Thiele H. et al.; NEJM DEC 21, 2017

Immediate PCI of nonculprit lesions — no./total no. (%)	43/344 (12.5)	310/342 (90.6)	<0.001
Immediate complete revascularization achieved — no./total no. (%)	26/344 (7.6)	277/342 (81.0)	<0.001
Total dose of contrast material — ml			<0.001
Median	190	250	
Interquartile range	140–250	200–350	
Total duration of fluoroscopy — min			<0.001
Median	13	19	
Interquartile range	7–20	12–29	
Staged PCI of nonculprit lesions — no./total no. (%)	60/344 (17.4)	8/341 (2.3)	<0.001

CULPRIT SHOCK 1y

Thiele H. et al., NEJM Nov 1, 2018

B **Landmark Analysis**

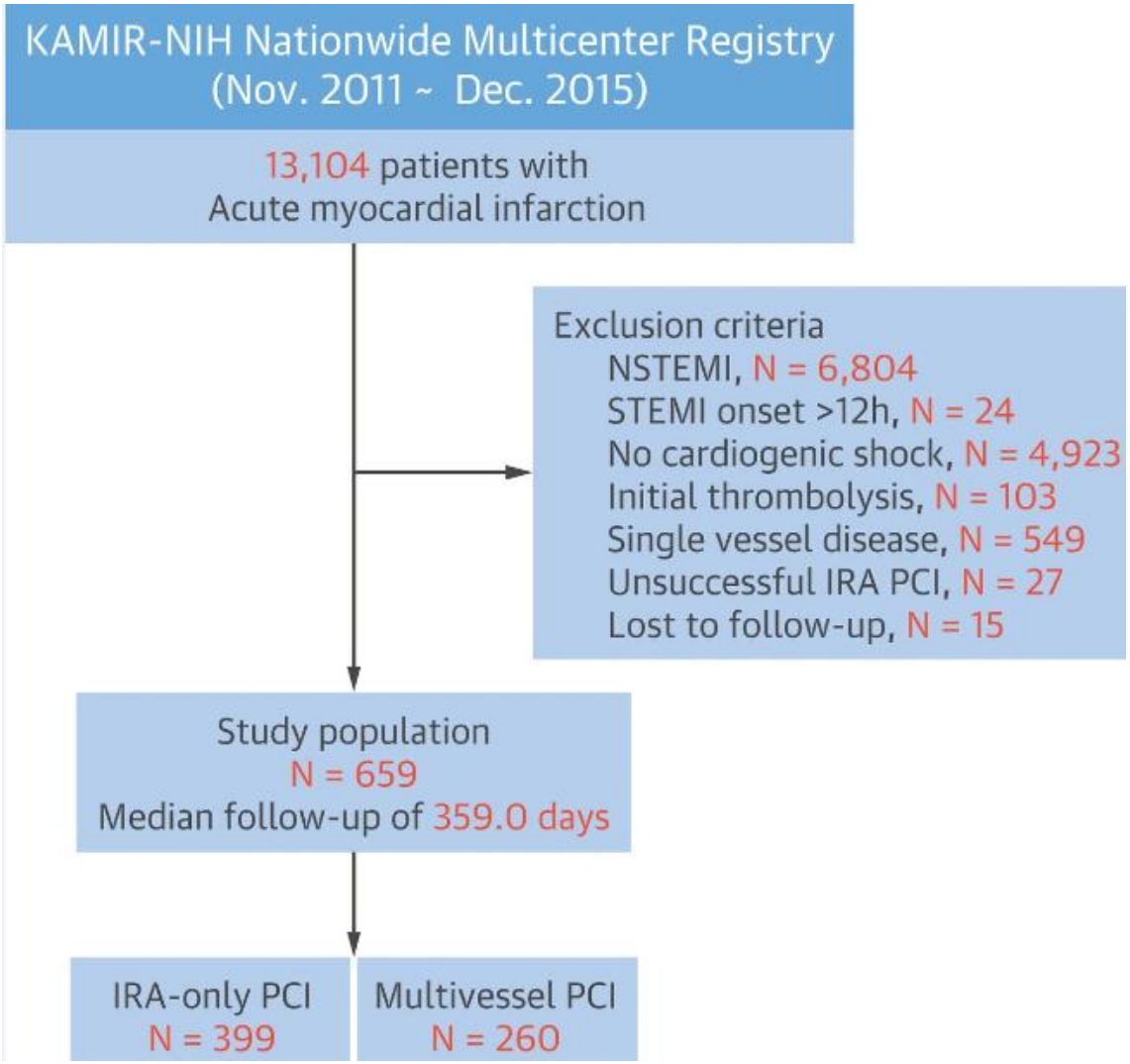


No. at Risk

Multivessel PCI	165	161	160	156	152	149	131
Culprit-lesion-only PCI	195	186	181	178	174	172	147

KAMIR- NIH

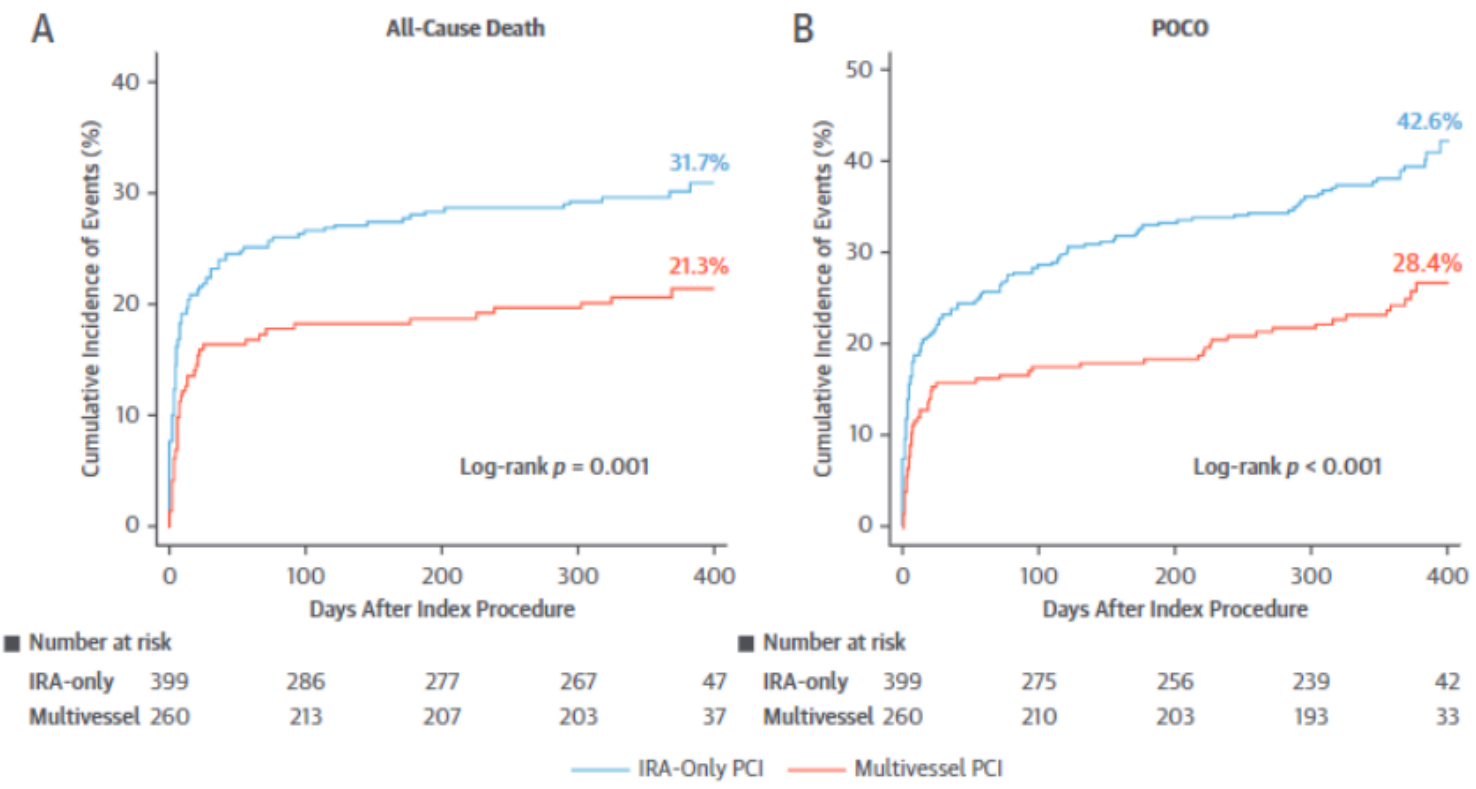
Lee et al. MV-PCI in STEMI with CS; JACC 2/2018



KAMIR- NIH Registr

Lee et al. MV-PCI in STEMI with CS; JACC 2/2018

FIGURE 2 Cumulative Incidence of Primary and Secondary Outcomes



Kaplan-Meier curves with cumulative hazards of **(A)** all-cause death and **(B)** POCO compared according to the PCI strategy are shown. POCO = patient-oriented composite outcome; other abbreviations as in Figure 1.

Timing multi-vessel PCI

Lee et al. MV-PCI in STEMI with CS; JACC 2/2018

Timing of non-IRA PCI		
Immediate PCI during index procedure	–	157 (60.4)
Staged PCI before discharge	–	103 (39.6)
Completeness of multivessel PCI		
Complete revascularization	–	171 (65.8)
Incomplete revascularization	–	89 (34.2)

Závěr

- MVD je přítomna u většiny nemocných s STEMI a kardiogenním šokem
- CULRIT SHOCK – „méně je více“ v akutním stádiu IRA only strategie
- Pokud MV PCI tak je důležité kdy?
- Pokud non-IRA PCI během index PCI tak je důležitá správná identifikace léze (CTO???) a PCI rychle a s minimem kontrastu