

12:00 - 12:15 STEMI patient with
multivessel disease in shock - What do the
Guidelines say

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

Stefan James

Professor of Cardiology

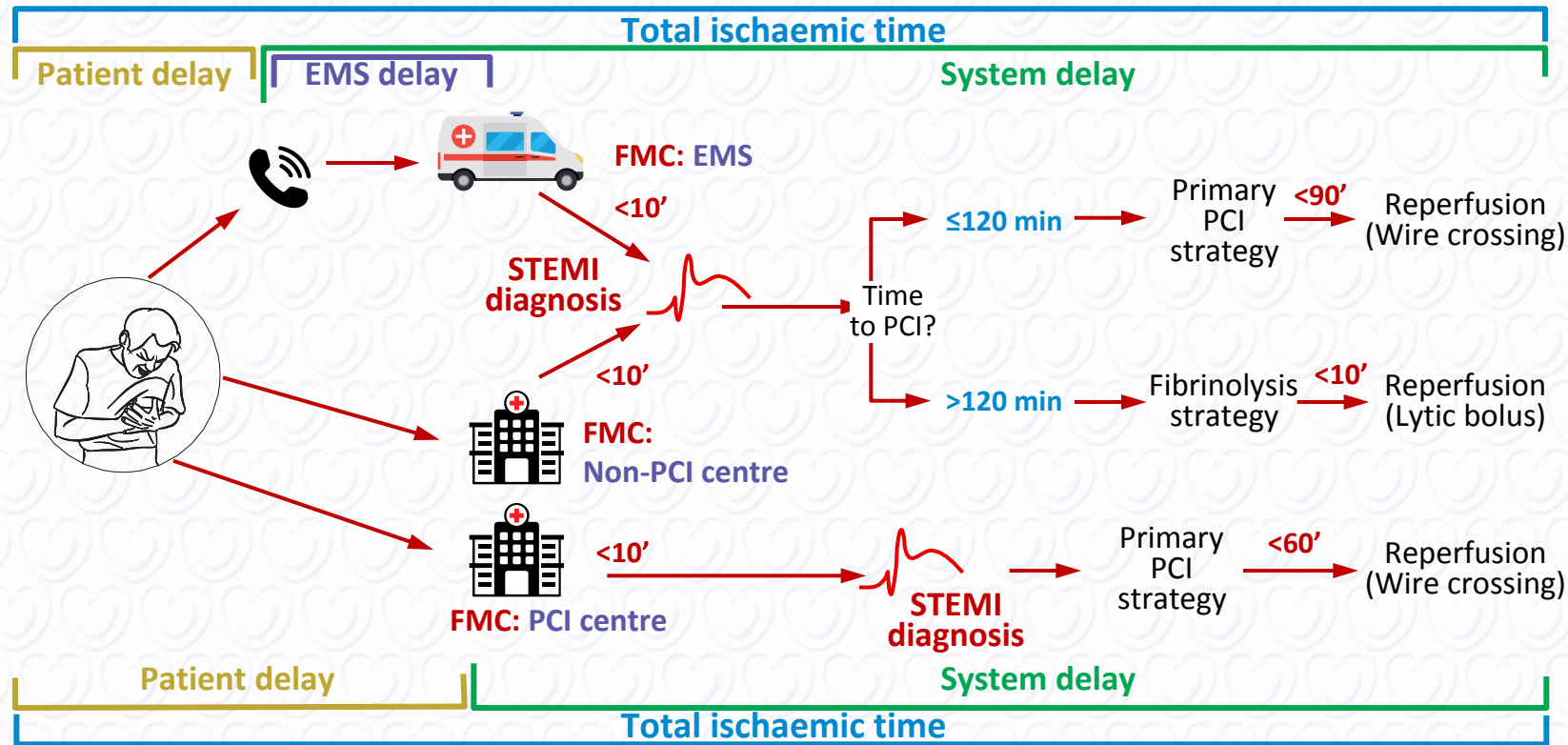
Uppsala University Uppsala, Sweden

Declaration of interest

- I have nothing to declare



Modes of patient presentation, components of ischaemic time and flowchart for reperfusion strategy selection



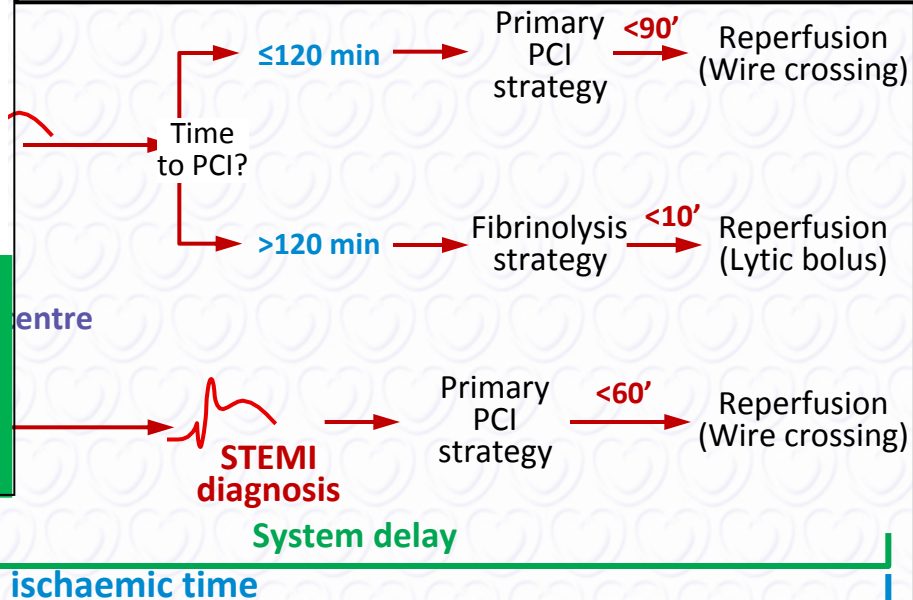
Modes of patient presentation, components of ischaemic time and flowchart for reperfusion strategy selection

Atypical ECG presentations

- Bundle branch block,
- Ventricular pacing,
- Hyper-acute T waves,
- Isolated depression in anterior leads,
- Universal ST depression with aVR elevation

In the presence of symptoms, a primary PCI strategy (urgent angiography and PCI if indicated) should be followed.

Left and right bundle branch block are considered equal for recommending urgent angiography if ischaemic symptoms.



Modes of patient presentation, components of ischaemic time and flowchart for reperfusion strategy selection



In the absence of ST-segment elevation

A *primary PCI strategy* is indicated in patients with suspected ongoing ischaemic symptoms if:

- **haemodynamic instability or cardiogenic shock,**
- recurrent or ongoing chest pain refractory to medical treatment,
- life-threatening arrhythmias or cardiac arrest,
- mechanical complications of myocardial infarction,
- acute heart failure,
- recurrent dynamic ST-segment or T-wave changes, particularly with intermittent ST-segment elevation.

Class	Level
I	Reperfusion (Wire crossing)
	Reperfusion (Lytic bolus)
	Reperfusion (Wire crossing)

Complete revascularization (non-IRA PCI)



Primary PCI should be limited to the culprit vessel with the exception of cardiogenic shock and persistent ischaemia after PCI of the supposed culprit lesion.

Ila

B



Non-IRA strategy

Routine revascularization of non-IRA lesions should be considered in STEMI patients with multivessel disease before hospital discharge.

Ila

A

Non-IRA PCI during the index procedure should be considered in patients with cardiogenic shock.

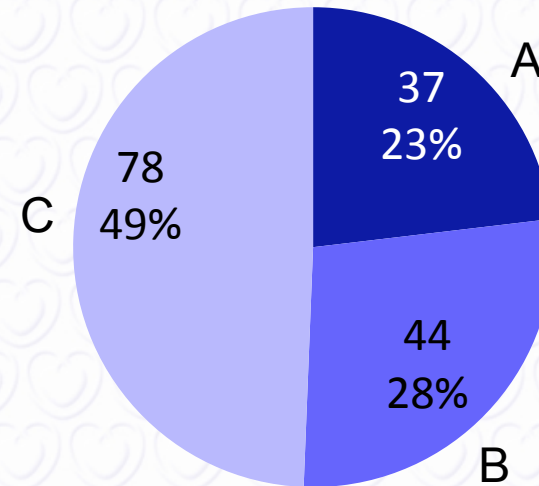
Ila

C

Level of evidence

159 recommendations
based on 477 references

A	Data derived from multiple randomized clinical trials or meta-analyses.
B	Data derived from a single randomized clinical trial or large non-randomized studies.
C	Consensus of opinion of the experts and/or small studies, retrospective studies, registries.



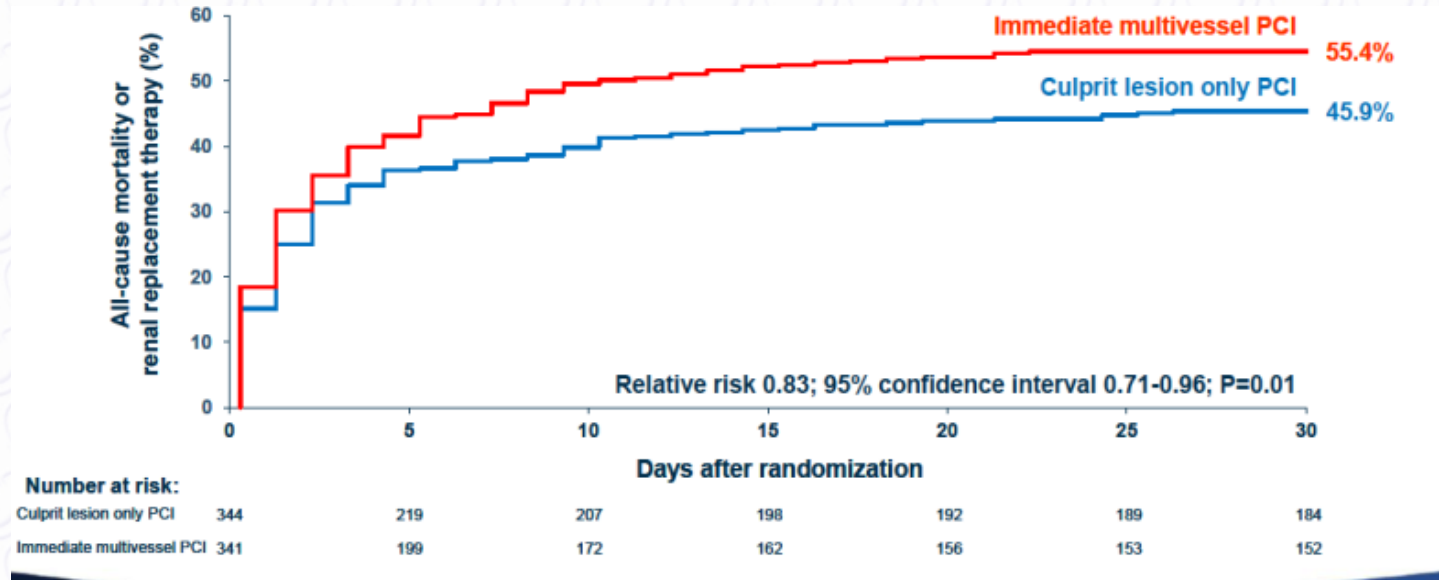
Gaps in the evidence and areas for future research

1. Public awareness and emergency care
2. **Reduction of ischaemia/ reperfusion injury**
3. Refinement of (acute and long-term)antithrombotic regimes)
4. Beta-blockers and ACE inhibitors
5. Post-STEMI risk stratification
6. **Shock and left ventricular assist devices**
7. Myocardial repair/rescue
8. Need for observational data
9. Need for pragmatic real-life

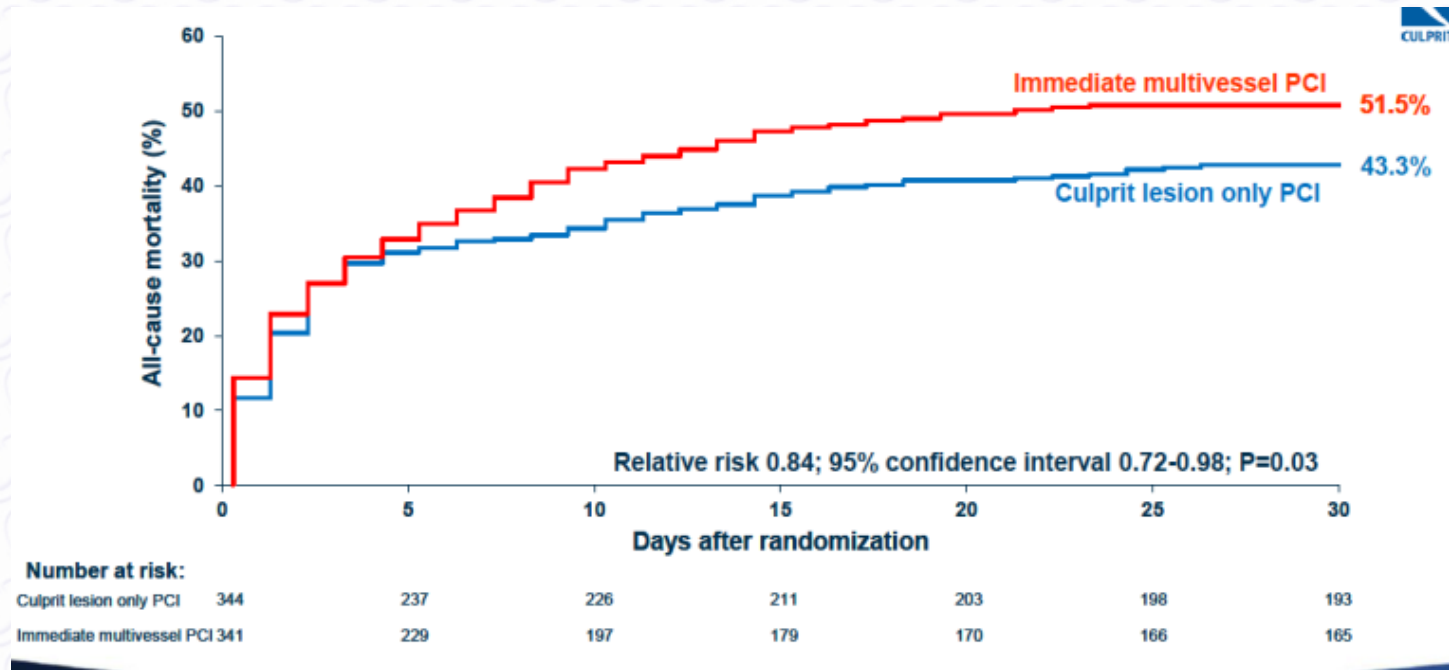
Shock and left ventricular assist devices

Severe heart failure and shock are among the most important negative prognostic predictors in patients with STEMI. In addition to urgent revascularization of IRA and standard medical therapies for pre- and afterload reduction, there is limited evidence for the systematic use of inotropic and vasopressor agents as well as mechanical support. Similarly, the benefit of routine complete revascularization during the index PCI procedure has not been formally demonstrated. The use of IABP has not met prior expectations of benefit, while LV assist devices and ECMO are increasingly popular but have not been sufficiently evaluated in clinical trials. Systematic evaluation of pharmacological and interventional strategies and LV assist devices for patients with shock are urgently needed.

All Cause Mortality and Renal Replacement



All Cause Mortality



**ESC**European Society
of Cardiology

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CURRENT OPINION**ESC**European Society
of Cardiology

Integrating the results of the CULPRIT-SHOCK trial in the 2017 ESC ST-elevation myocardial infarction guidelines: viewpoint of the task force

Borja Ibanez¹, MD PhD; Sigrun Halvorsen², MD PhD; Marco Roffi³, MD; Héctor Bueno⁴, MD PhD; Holger Thiele⁵, MD; Pascal Vranckx⁶, MD PhD; Franz-Josef Neumann⁷, MD; Stephan Windecker⁸, MD; Stefan James⁹, MD PhD.

Summary Key Points

In patients with cardiogenic shock complicating STEMI and NSTEMI:

- Primary PCI should routinely be restricted to the IRA
- Immediate multivessel PCI may be justified if the IRA is difficult to identify or incorrectly defined initially or when multiple culprit lesions are identified.
- Immediate multivessel PCI may be justified in selected cases in which there is a flow-limiting non-IRA very severe stenosis irrigating a large myocardial area.
- Staged non-IRA PCI might be an option, carefully balancing the benefits and risks.

Recommendations for the management of cardiogenic shock in ST-elevation myocardial infarction

Recommendations	Class ^a	Level ^b
Immediate PCI is indicated for patients with cardiogenic shock if coronary anatomy is suitable. If coronary anatomy is not suitable for PCI, or PCI has failed, emergency CABG is recommended. ²⁴⁸	I	B
Invasive blood pressure monitoring with an arterial line is recommended.	I	C
Immediate Doppler echocardiography is indicated to assess ventricular and valvular functions, loading conditions, and to detect mechanical complications.	I	C
It is indicated that mechanical complications are treated as early as possible after discussion by the Heart Team.	I	C
Oxygen/mechanical respiratory support is indicated according to blood gases.	I	C

Intra-aortic balloon pumping should be considered in patients with haemodynamic instability/cardiogenic shock due to mechanical complications.	IIa	C
Haemodynamic assessment with pulmonary artery catheter may be considered for confirming diagnosis or guiding therapy. ⁴³³	IIb	B
Ultrafiltration may be considered for patients with refractory congestion, who failed to respond to diuretic-based strategies. ^{434–436}	IIb	B
Inotropic/vasopressor agents may be considered for haemodynamic stabilization.	IIb	C
Short-term mechanical support ^c may be considered in patients in refractory shock.	IIb	C
Routine intra-aortic balloon pumping is not indicated. ^{177,437}	III	B

