

**53° Congresso Nazionale ANMCO**

**ANMCO POWER**

**SCA-STEMI: COSA SAPPIAMO E COSA DOBBIAMO IMPARARE A CONOSCERE**

Rimini, Palacongressi  
19-21 Maggio 2022



# I Pazienti a Presentazione Tardiva: Quali sono le Evidenze?

Leonardo De Luca, MD, PhD, FACC, FESC, FSCAI

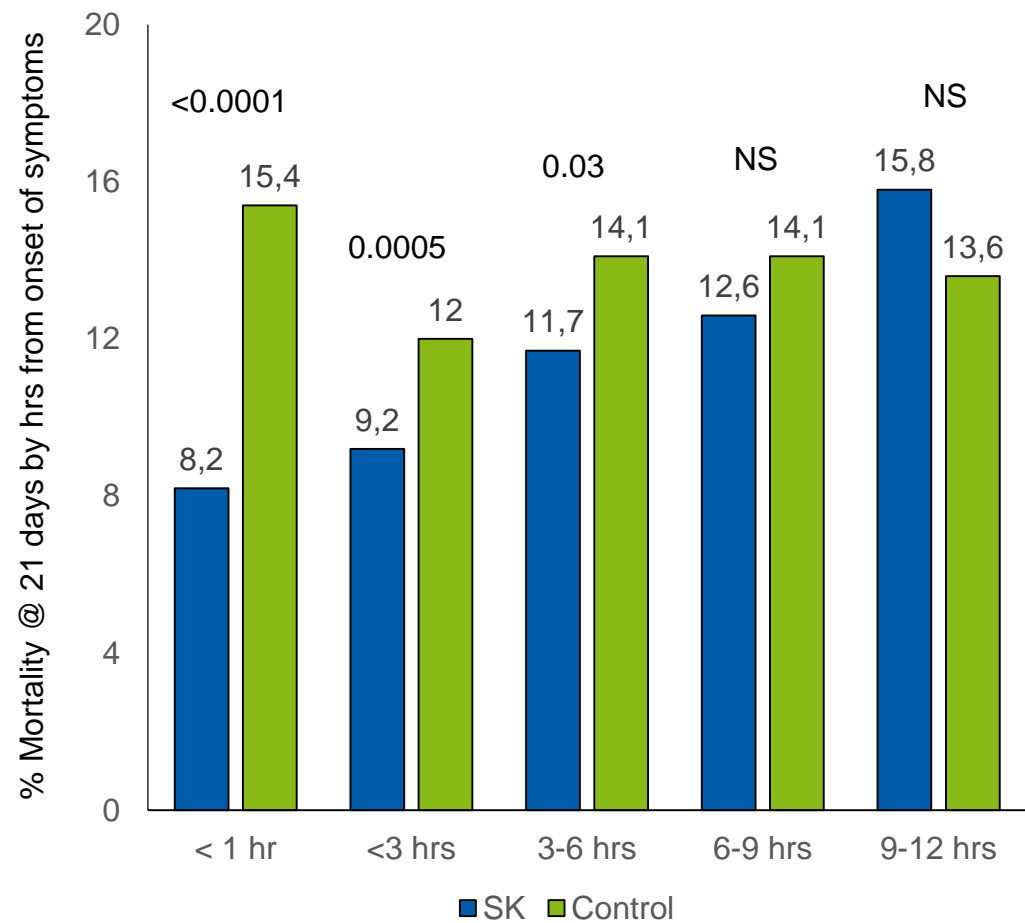
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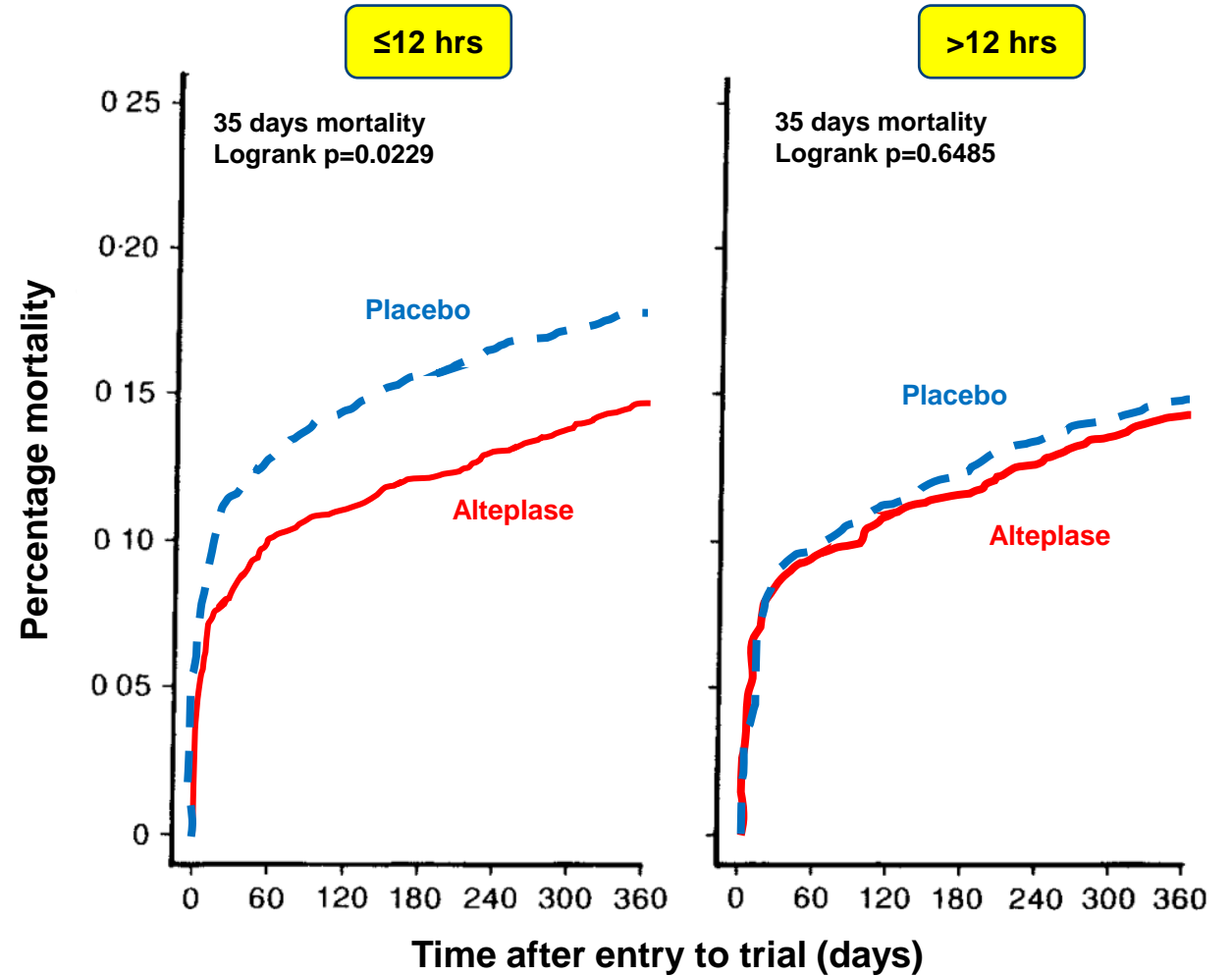


# Efficacy of Thrombolysis over Time

**GISSI Trial: 11,806 patients ( $\leq 12$  h from symptom onset)**



**LATE Trial: 5,711 patients (6-24 h from symptom onset)  
Pre-specified survival analysis**



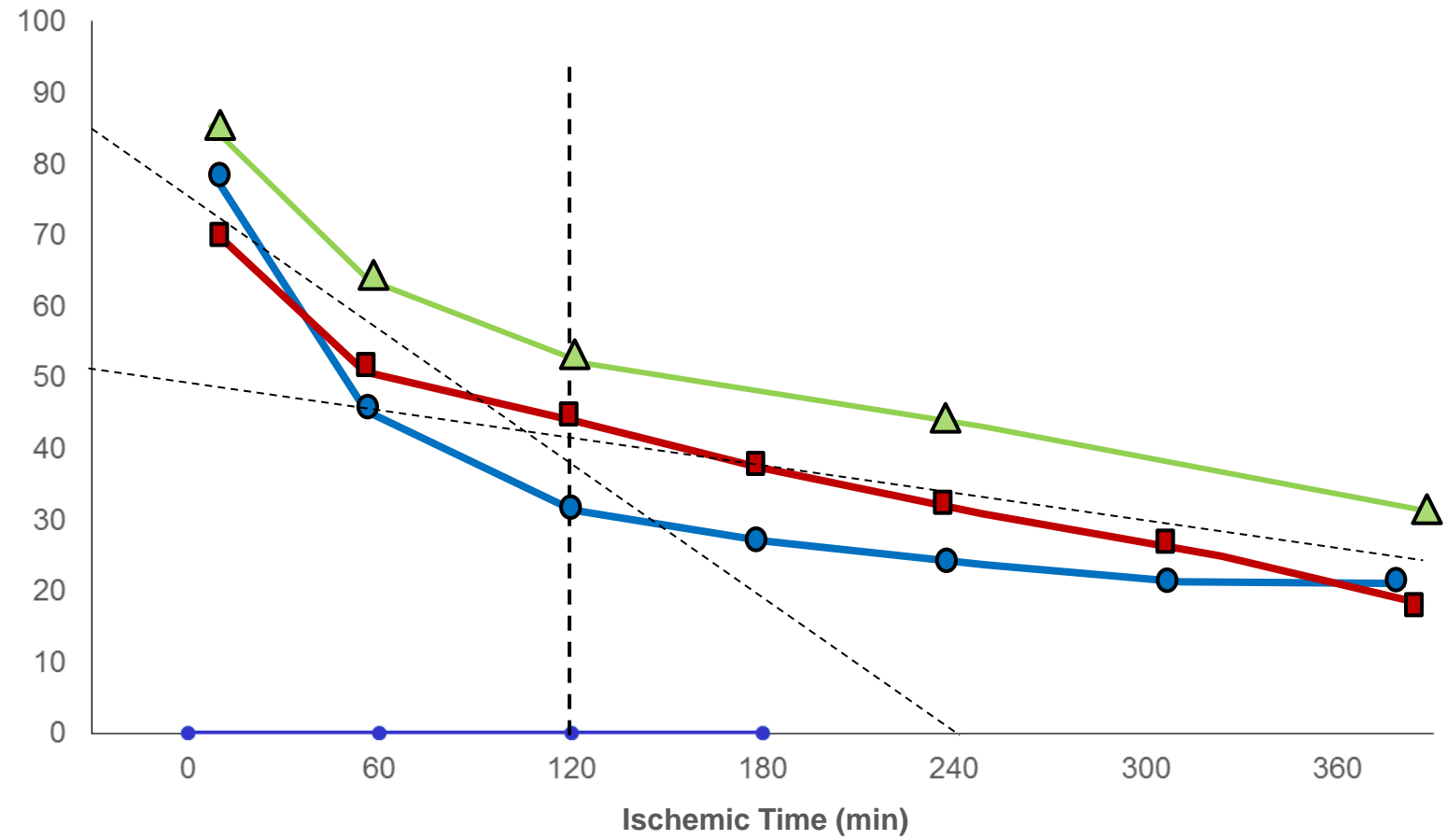
# Late-Comers STEMI Patients

## 5 Questions Need to be Answered

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- 1. What is the pathophysiological background?**
2. How many STEMI patients arrive late to hospital?
3. What is the long-term prognosis of late-presenters?
4. What is the effect of revascularization in very late-comers (>48 hrs)?
5. What is the effect of revascularization in late-comers (12-48 hrs)?

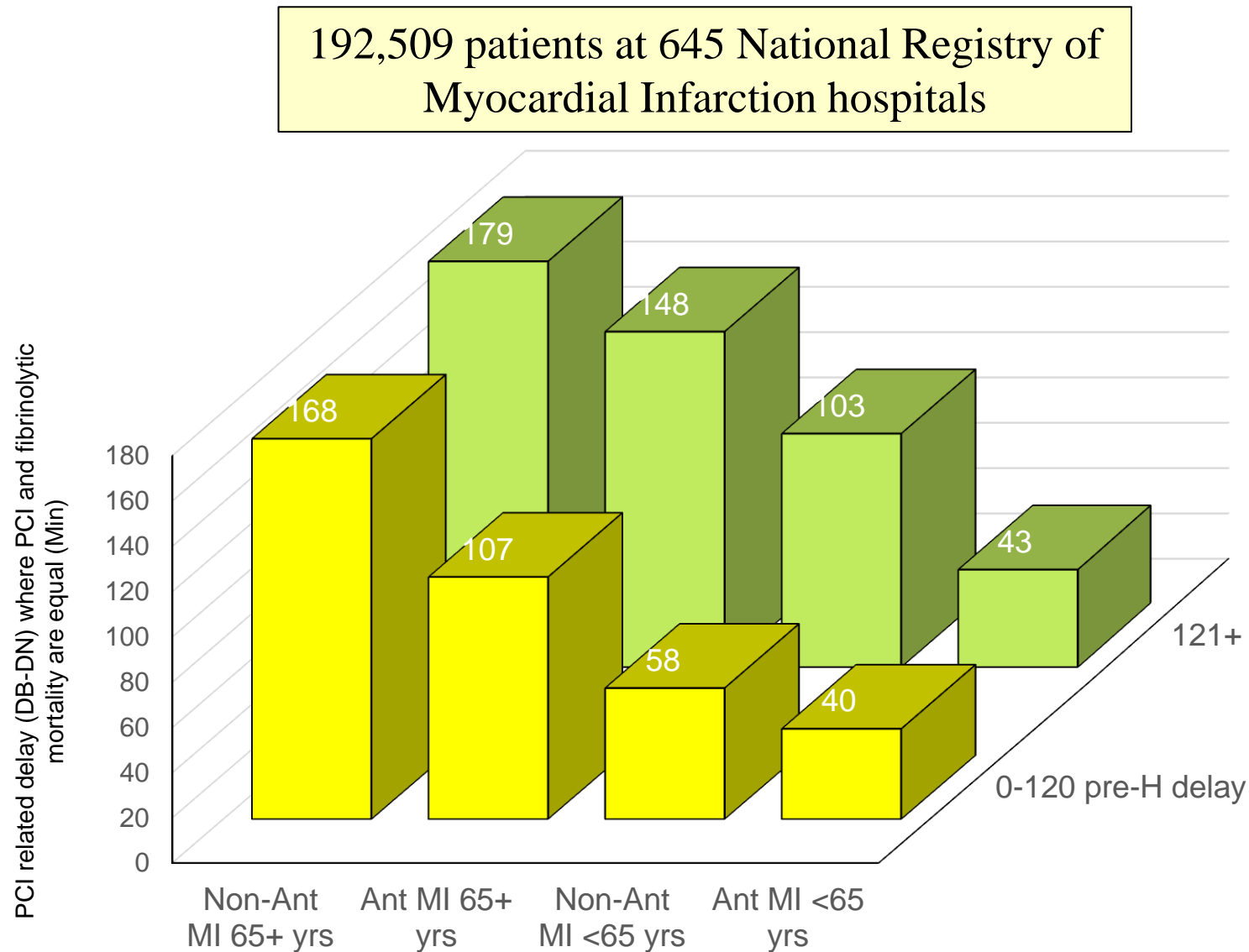
# Total Ischemic Time: The Correct Focus of Attention for Optimal STEMI Care



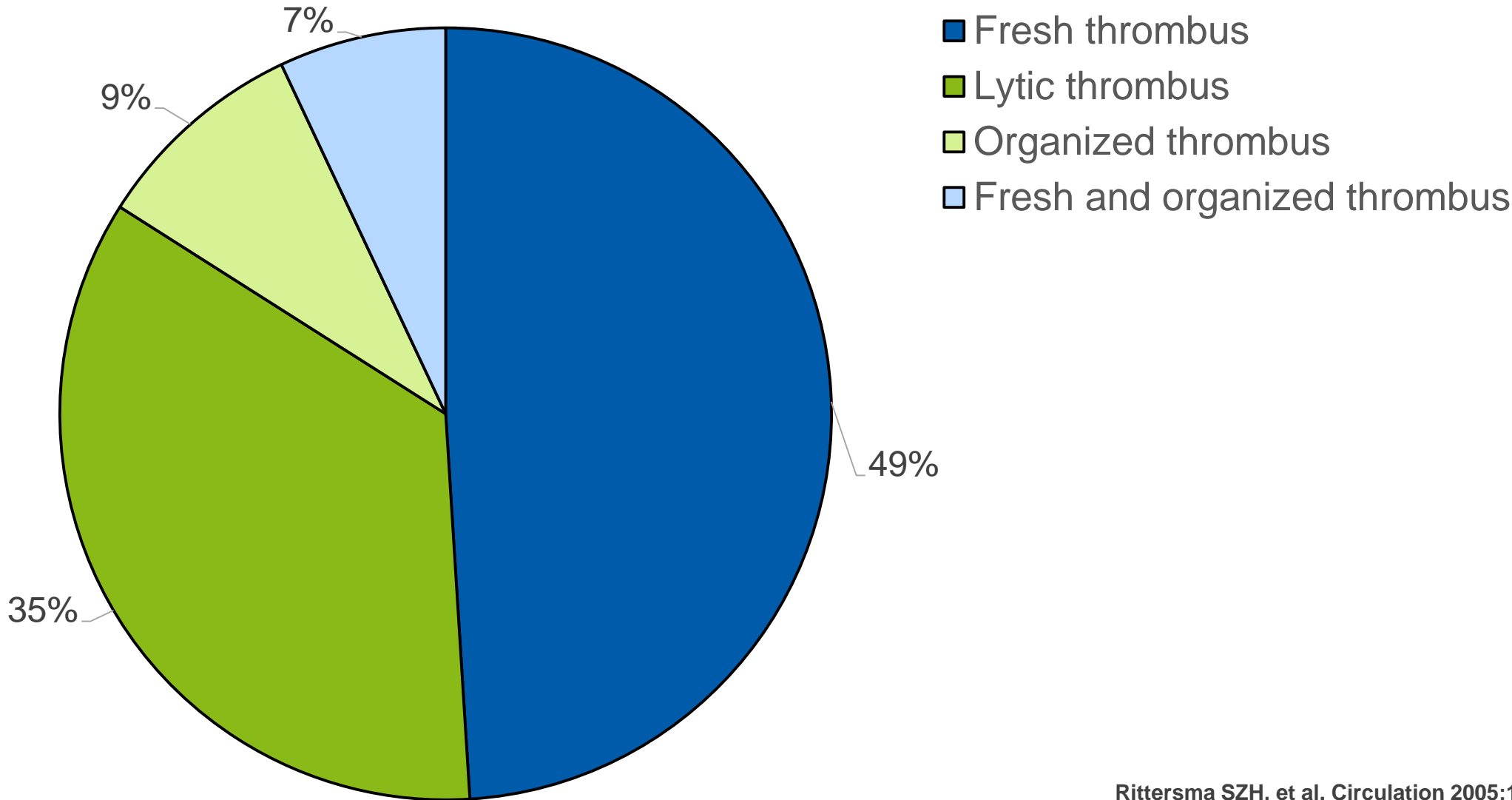
- % of Viable ischemic Muscle (adapted from Reimer et al. Circulation 1977;56:786)
- Absolute Benefit per 1000 patients Treated (adapted from Boersma et al. Lancet 1996;348:771)
- ▲ Myocardial Salvage index (adapted from Eitel et al. JACC 2010;55:2470)

# The Role of Time and Delays in Reperfusion for STEMI.

## Implications When Selecting a Reperfusion Strategy

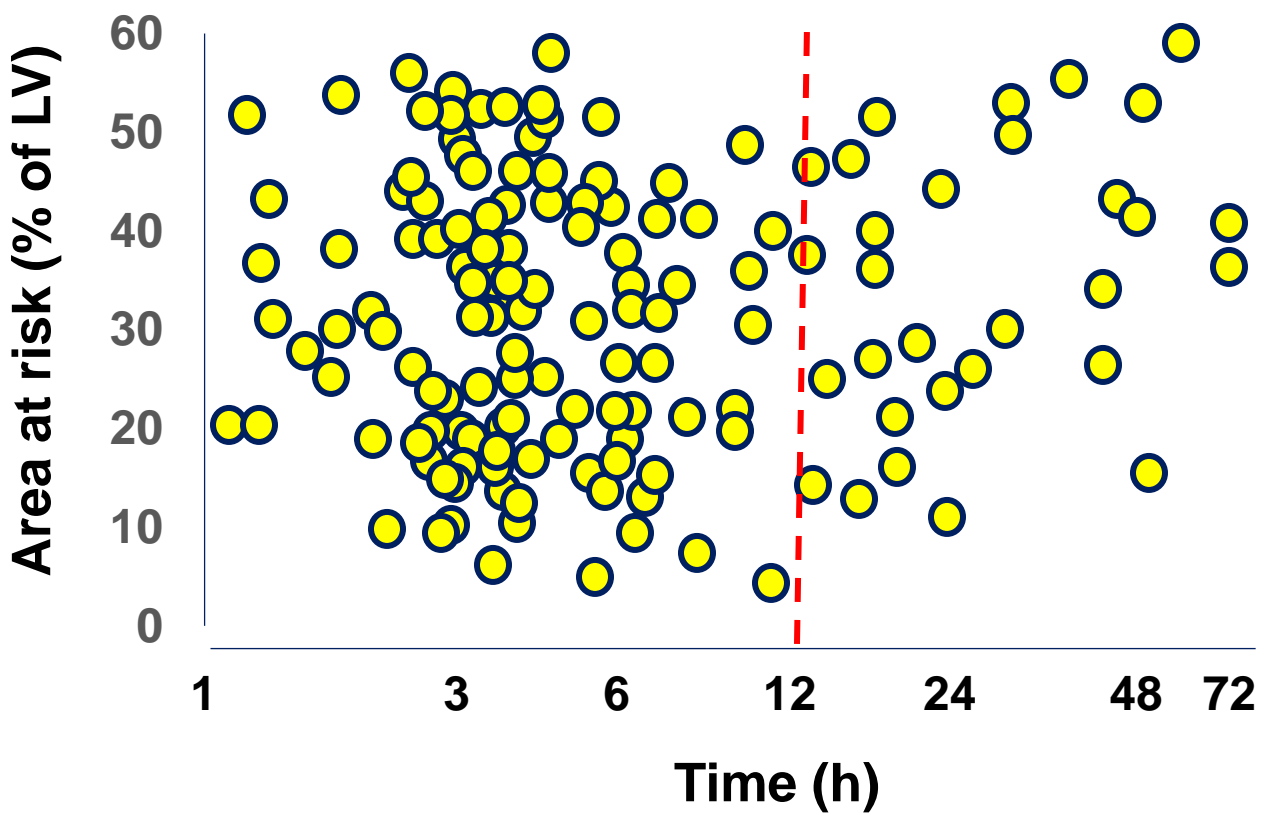


# Plaque Instability Frequently Occurs Days or Weeks Before Occlusive Coronary Thrombosis



# Area at risk in Patients Presenting with Symptoms for <12 h vs 12-72 hours

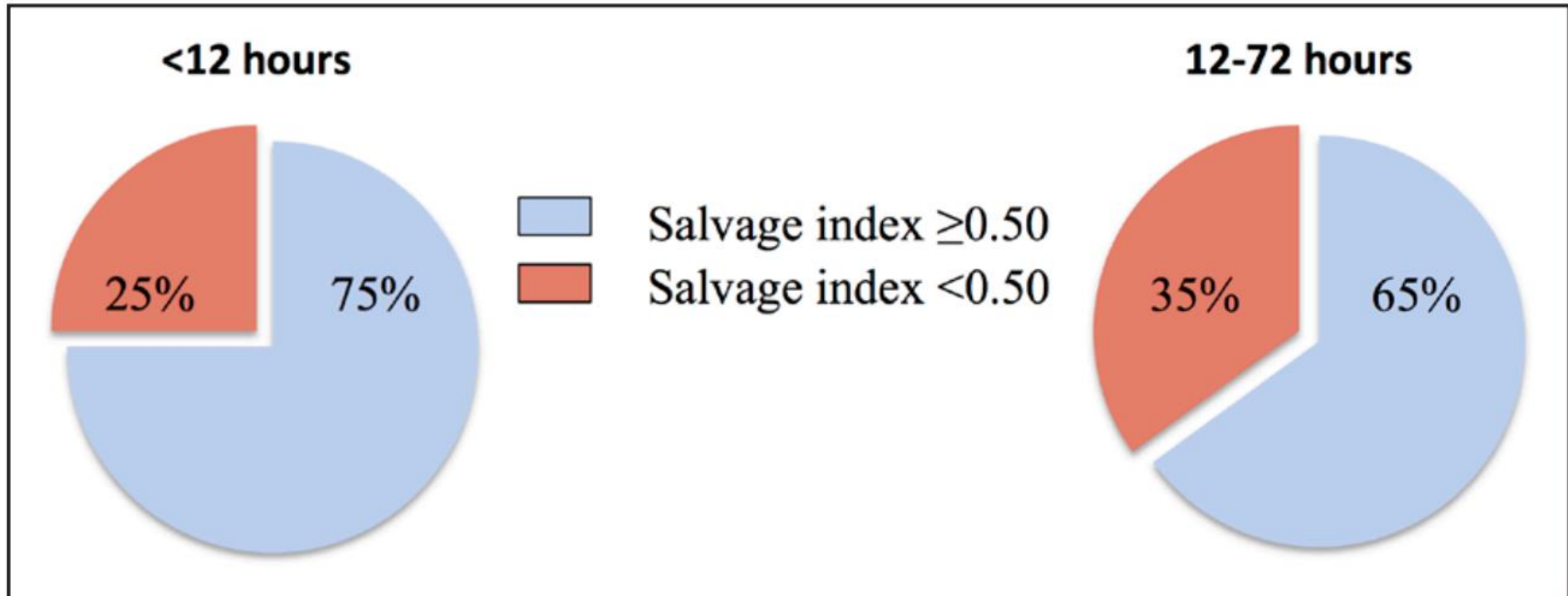
**TIMI 0 Group**



n=153; R<sup>2</sup>=0.01; p=0.13

# Benefit From Reperfusion With PCI Beyond 12 Hours of Symptom Duration in Patients With STEMI

865 STEMI patients who underwent cardiacMRI just after index PCI and 3 months later



# Late-Comers STEMI Patients

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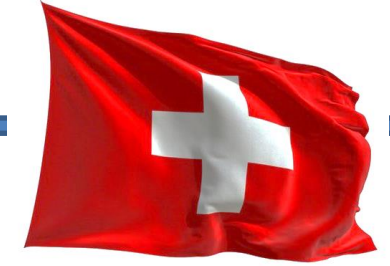
**2. How many STEMI patients arrive late to hospital?**

3. What is the long-term prognosis of late-presenters?

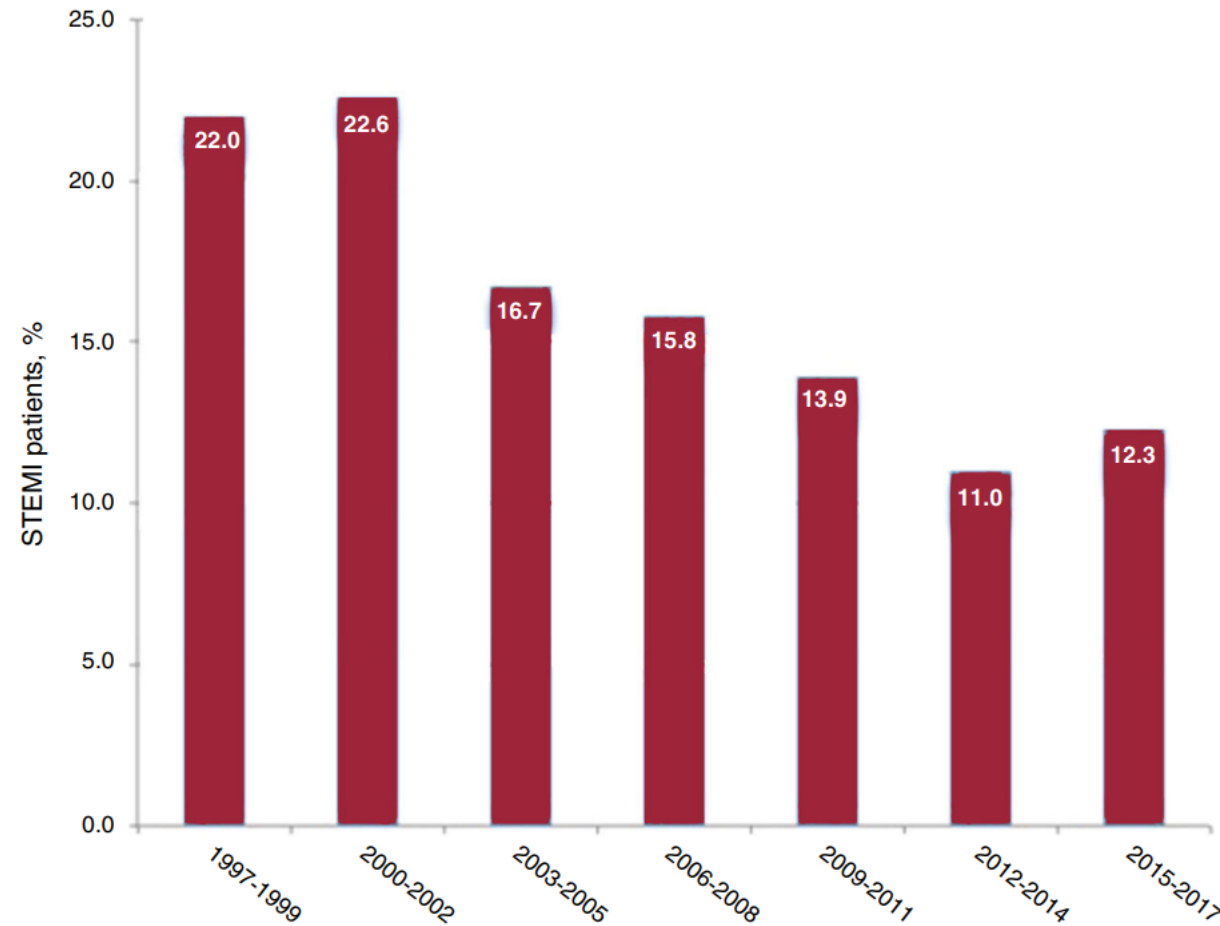
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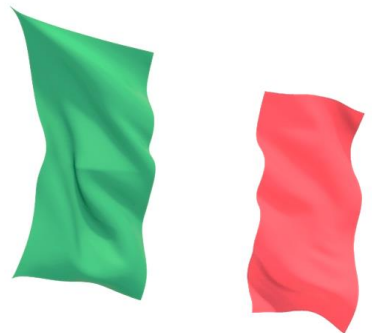
# Temporal Trends in Latecomer STEMI Patients In Switzerland



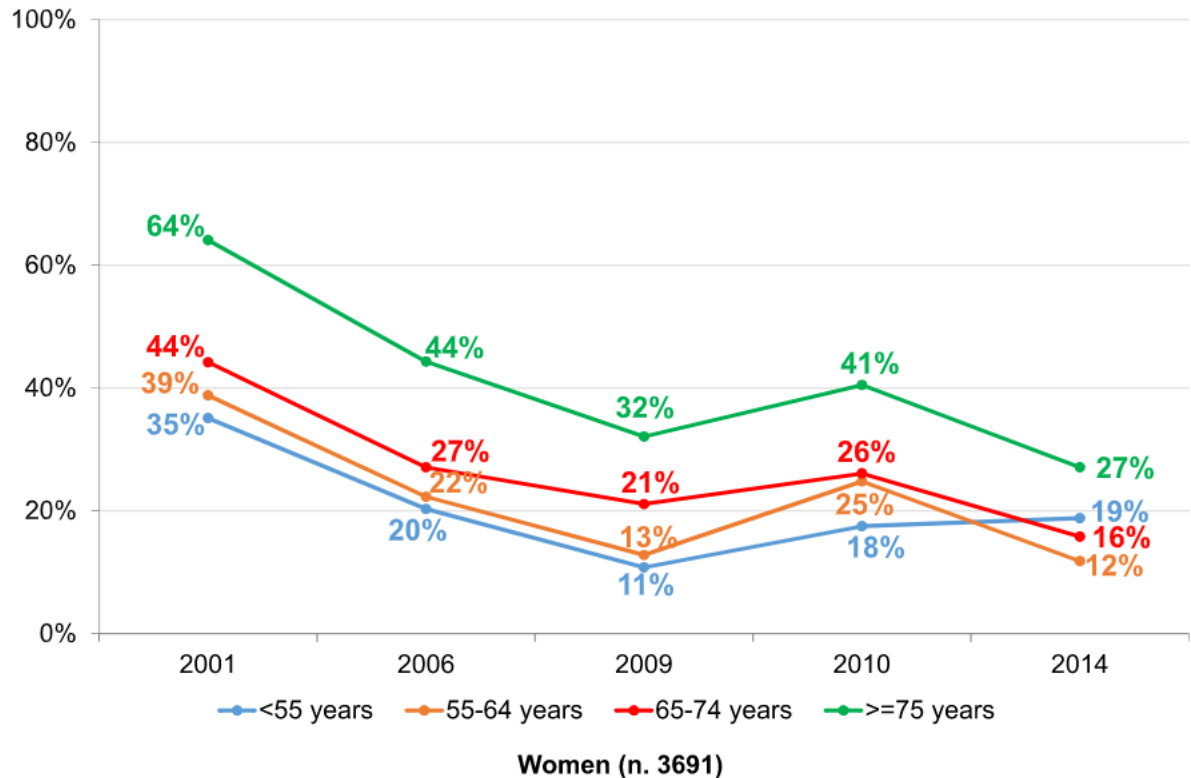
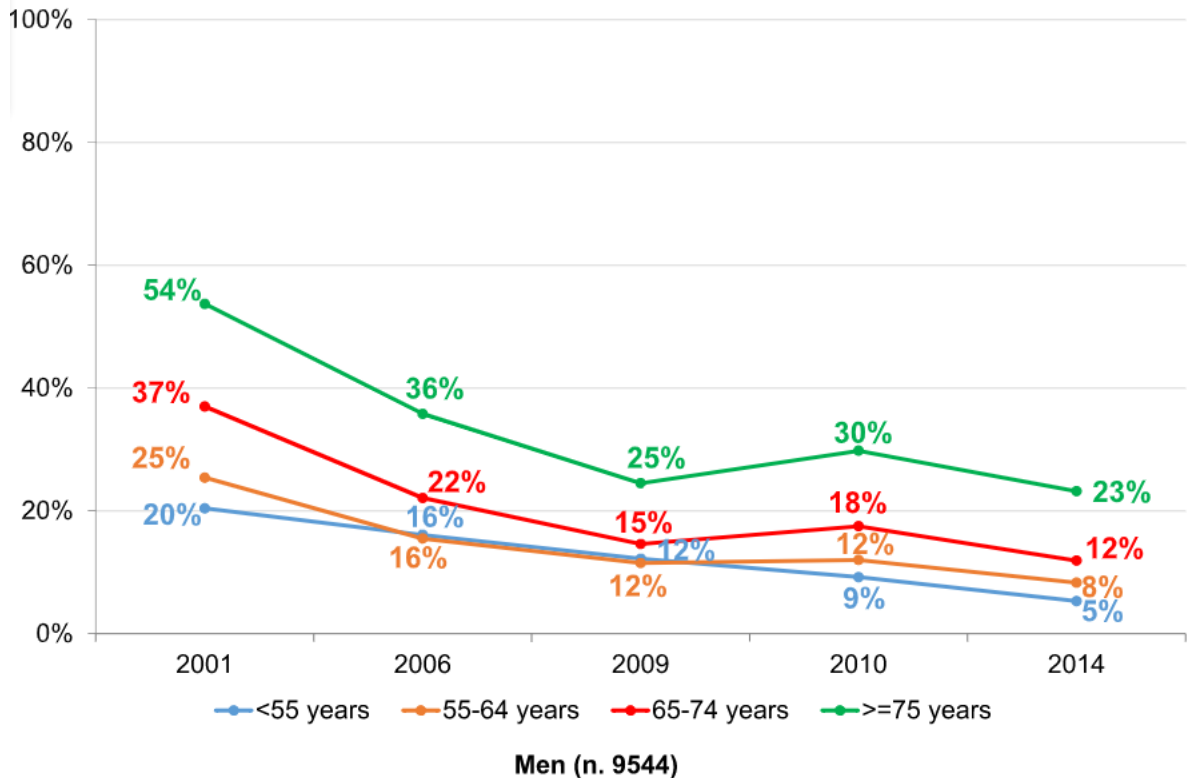
27,231 STEMI patients enrolled in the AMIS Plus registry (Jan 1997-Dec 2017)



# Contemporary Trends and Age-Specific Sex Differences in Management and Outcome for Patients With STEMI



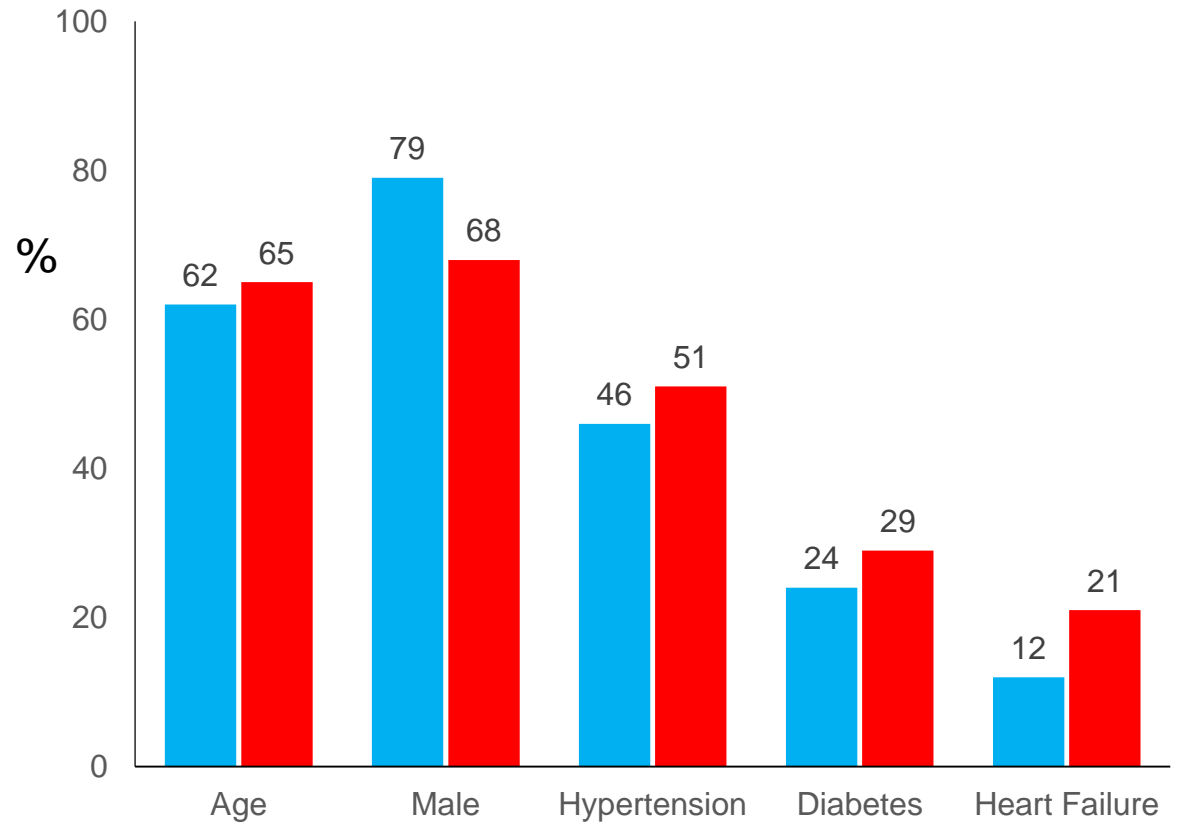
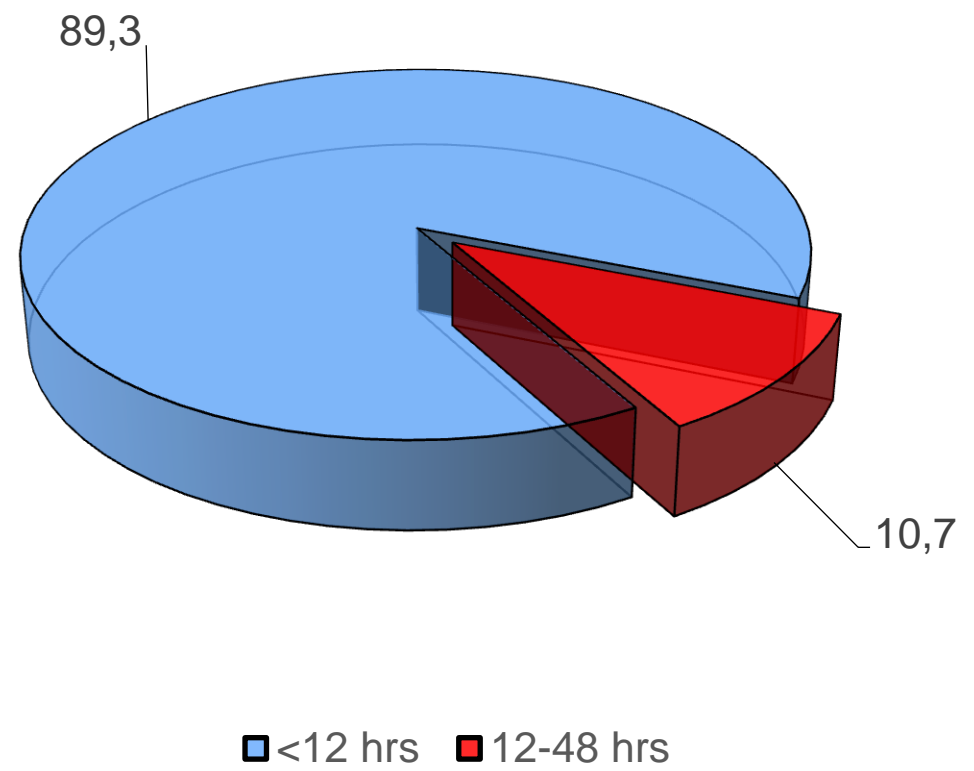
No Reperfusion/Late Presenters



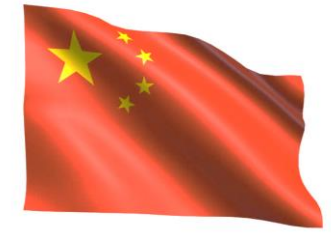
# Long-Term Outcomes of Patients With Late Presentation of STEMI



KAMIR-NIH, 20 tertiary PCI centers  
(Nov 2011-Dec 2015)  
5,826 STEMI ≤48 hrs from symptom onset

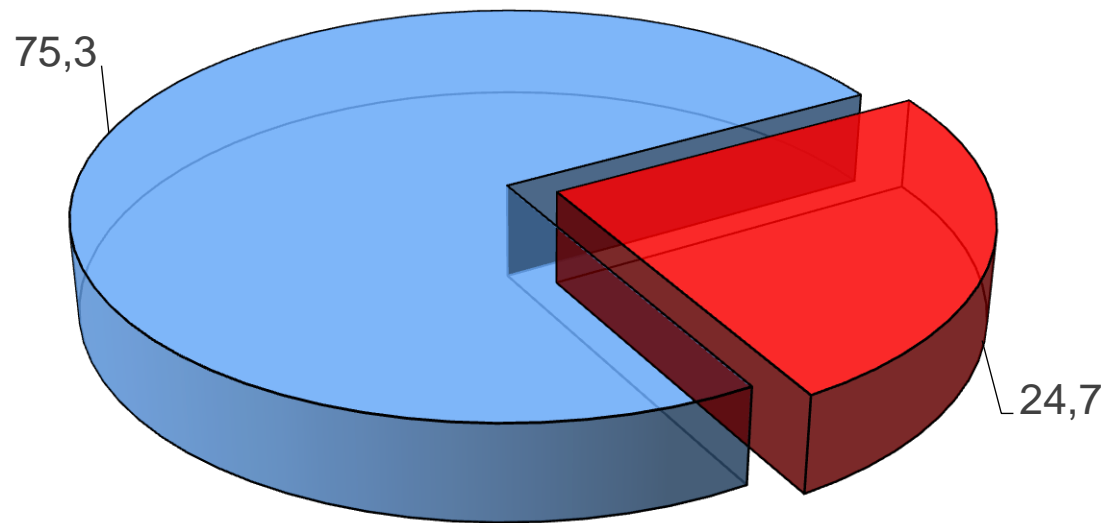


# Management and Outcomes of Patients With STEMI During the COVID-19 Pandemic in China



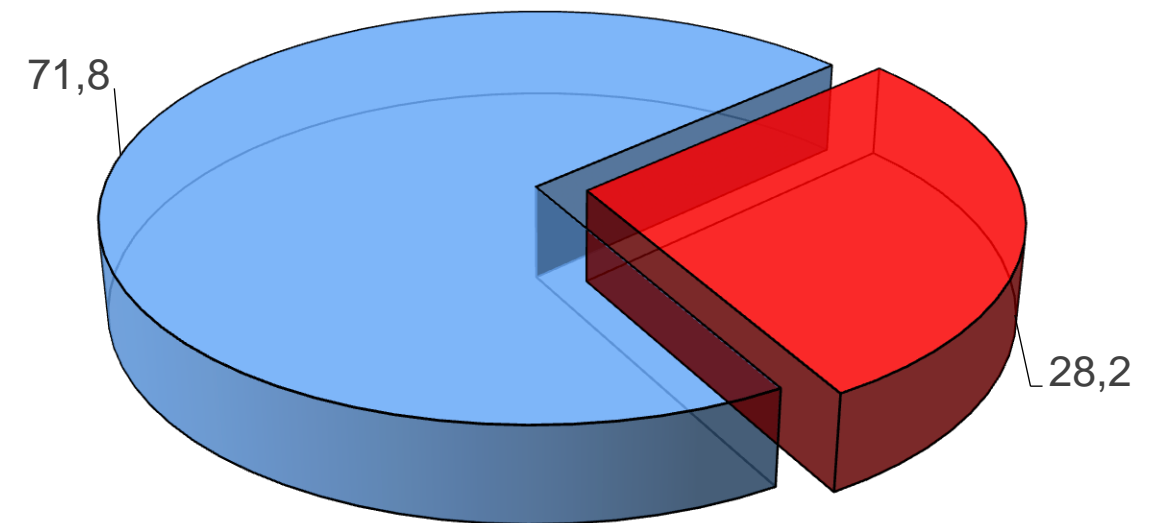
28,189 STEMI patients admitted to 1,372 Chest Pain Centers in China  
Between Dec 2019 and Feb 2020

## Pre-Outbreak



■ <12 hrs ■ 12-48 hrs

## Outbreak



■ <12 hrs ■ 12-48 hrs

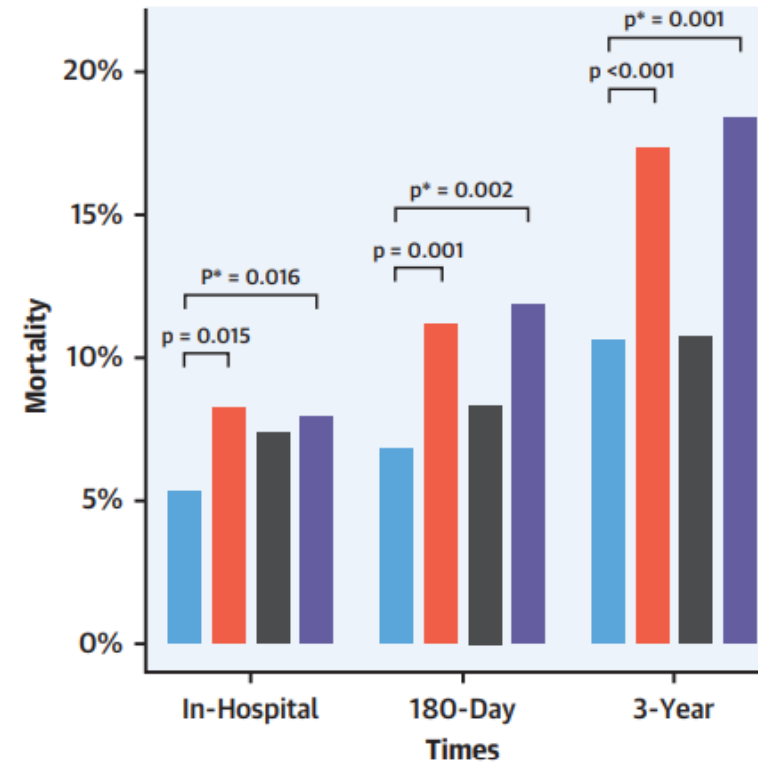
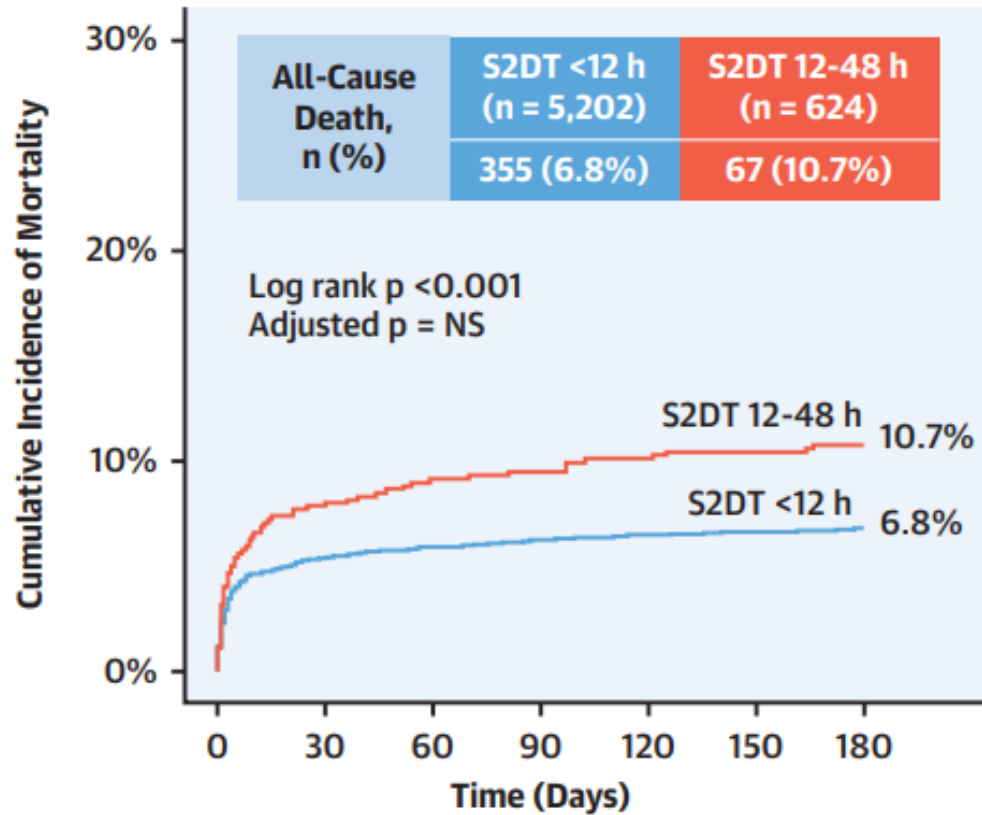
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# Long-Term Outcomes of Patients With Late Presentation of STEMI



S2DT ■ < 12 h (n = 5,202) ■ 12-24 h (n = 427) ■ 24-36 h (n = 121) ■ 36-48 h (n = 76)

# Late-Comers STEMI Patients

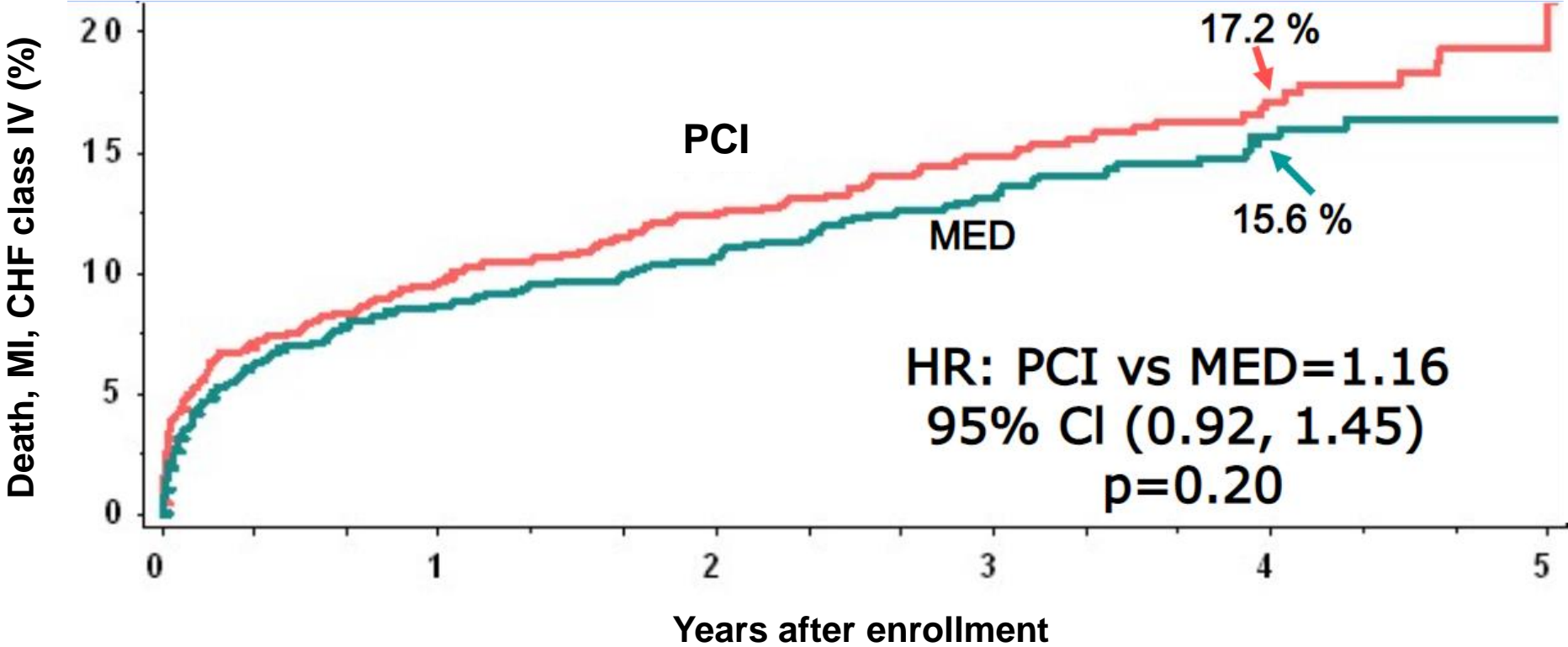
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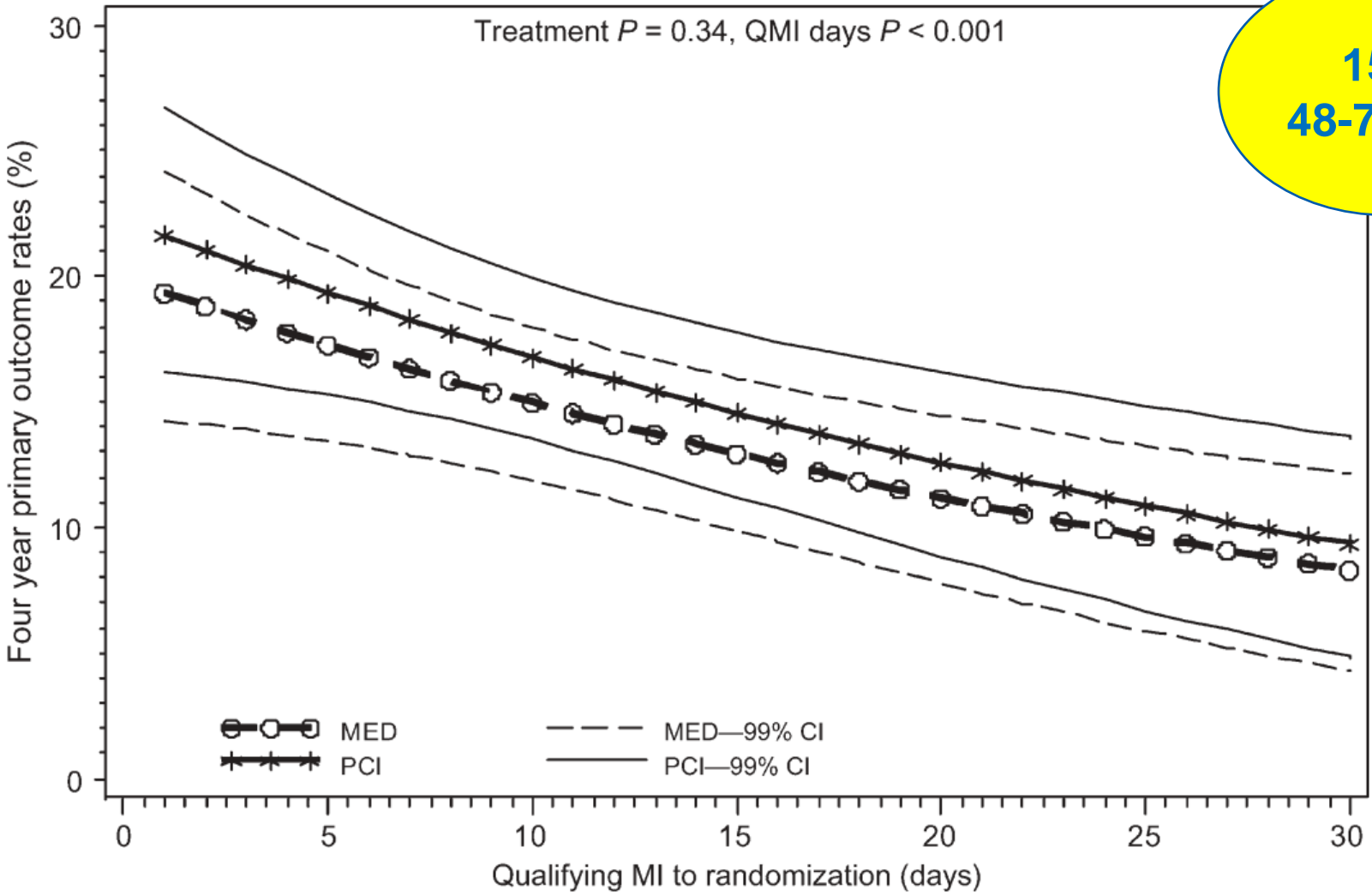
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# Coronary Intervention for Persistent Occlusion after Myocardial Infarction. The OAT Trial

2166 stable patients who had total occlusion of the infarct-related artery 3 to 28 days after myocardial infarction and who met a high-risk criterion (an ejection fraction of <50% or proximal occlusion)



# Lack of benefit from PCI of persistently occluded infarct arteries after the acute phase of MI is time independent



15%  
48-72 hrs

# Late Presenters in International Guidelines

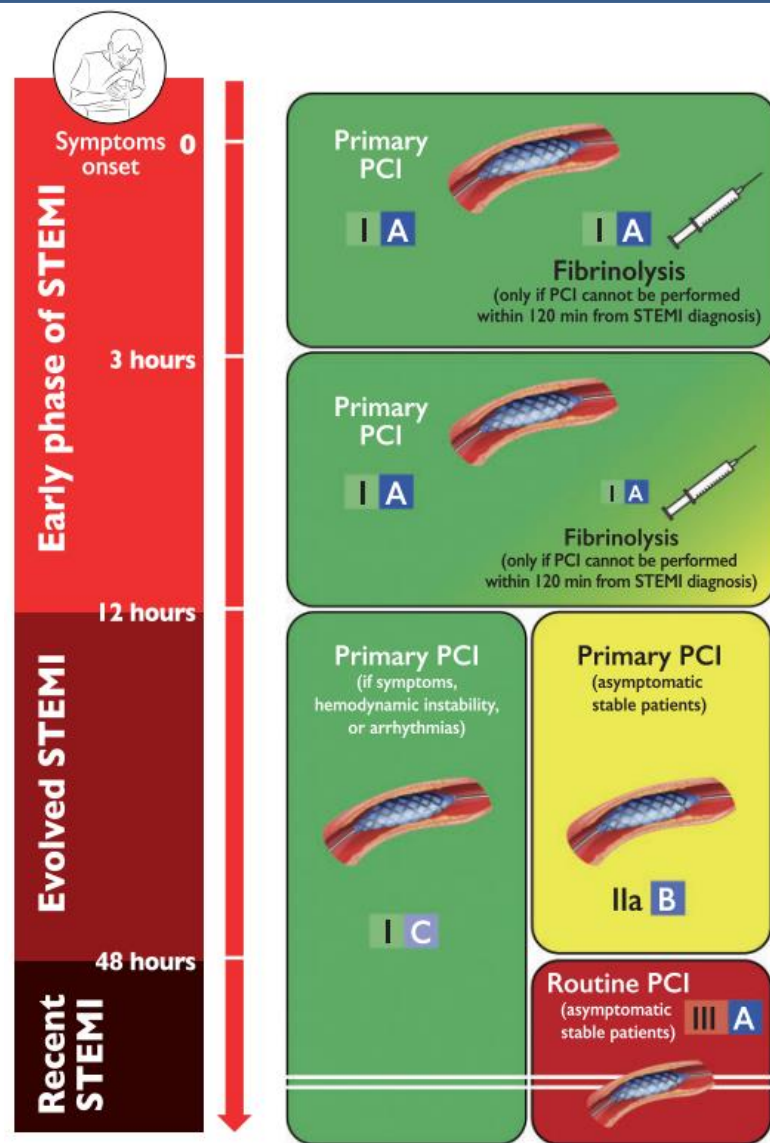


It is reasonable to perform primary PCI for patients with onset of symptoms within the prior 12 to 24 hours and 1 or more of the following:

I IIa IIb III



- a. Severe CHF (LoE: C)
- b. Hemodynamic/electrical instability (LoE: C)
- c. Persistent ischemic symptoms. (LoE: C)



# Late-Comers STEMI Patients

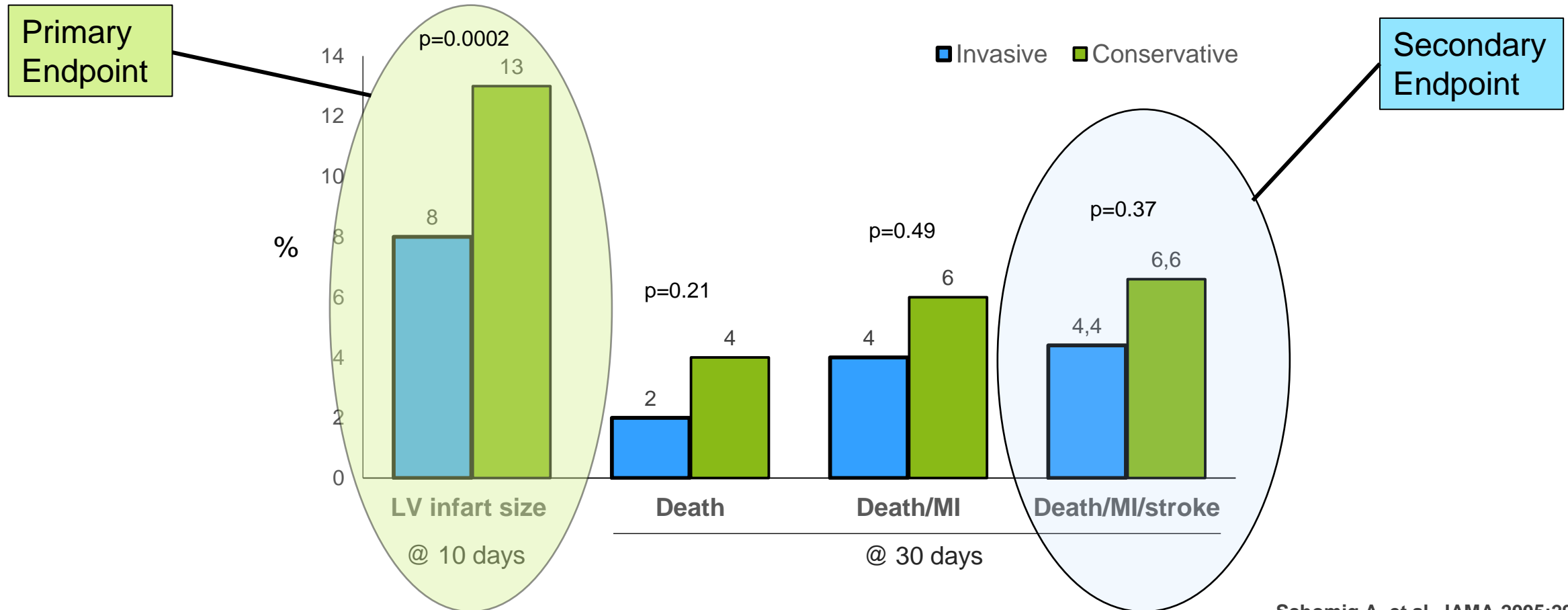
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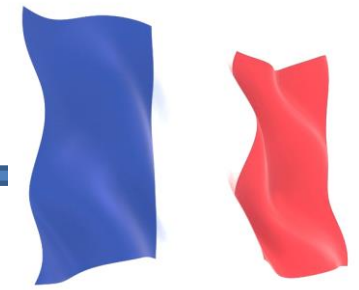
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# Mechanical Reperfusion in Patients With Acute Myocardial Infarction Presenting More Than 12 Hours From Symptom Onset

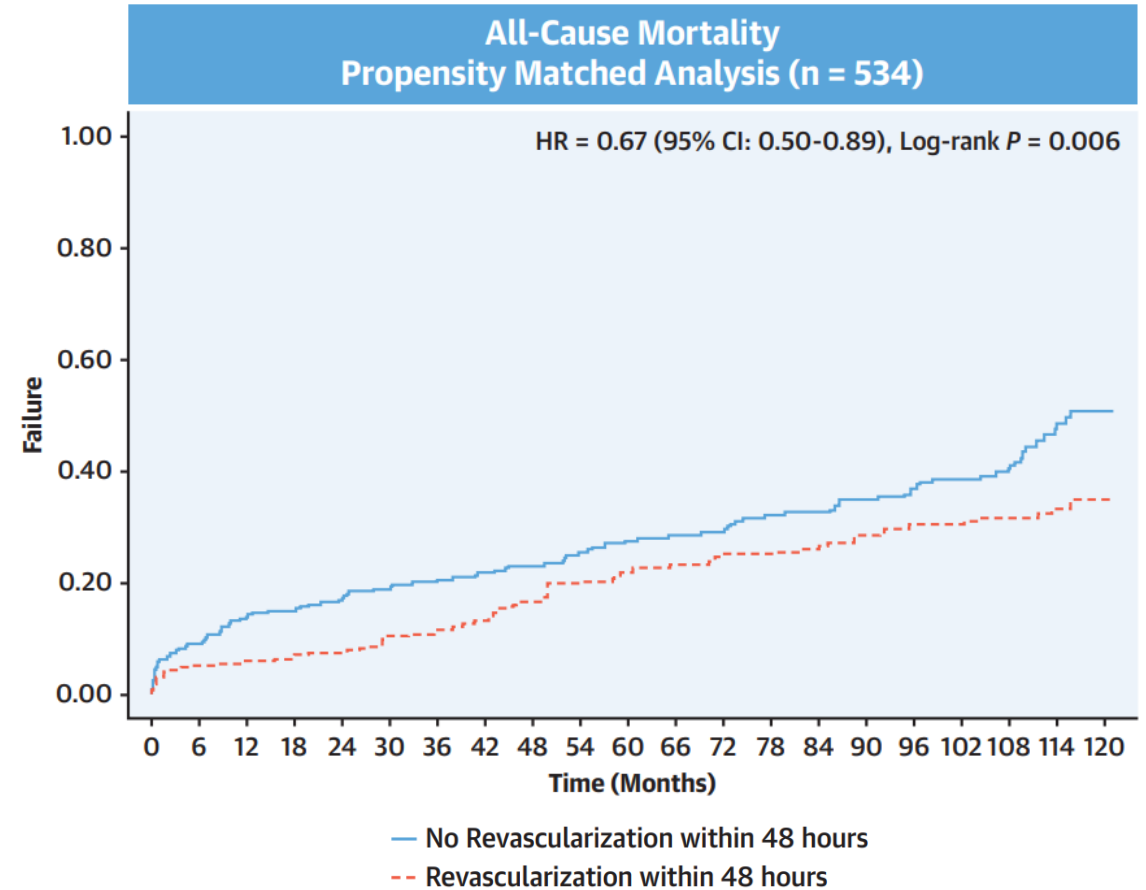
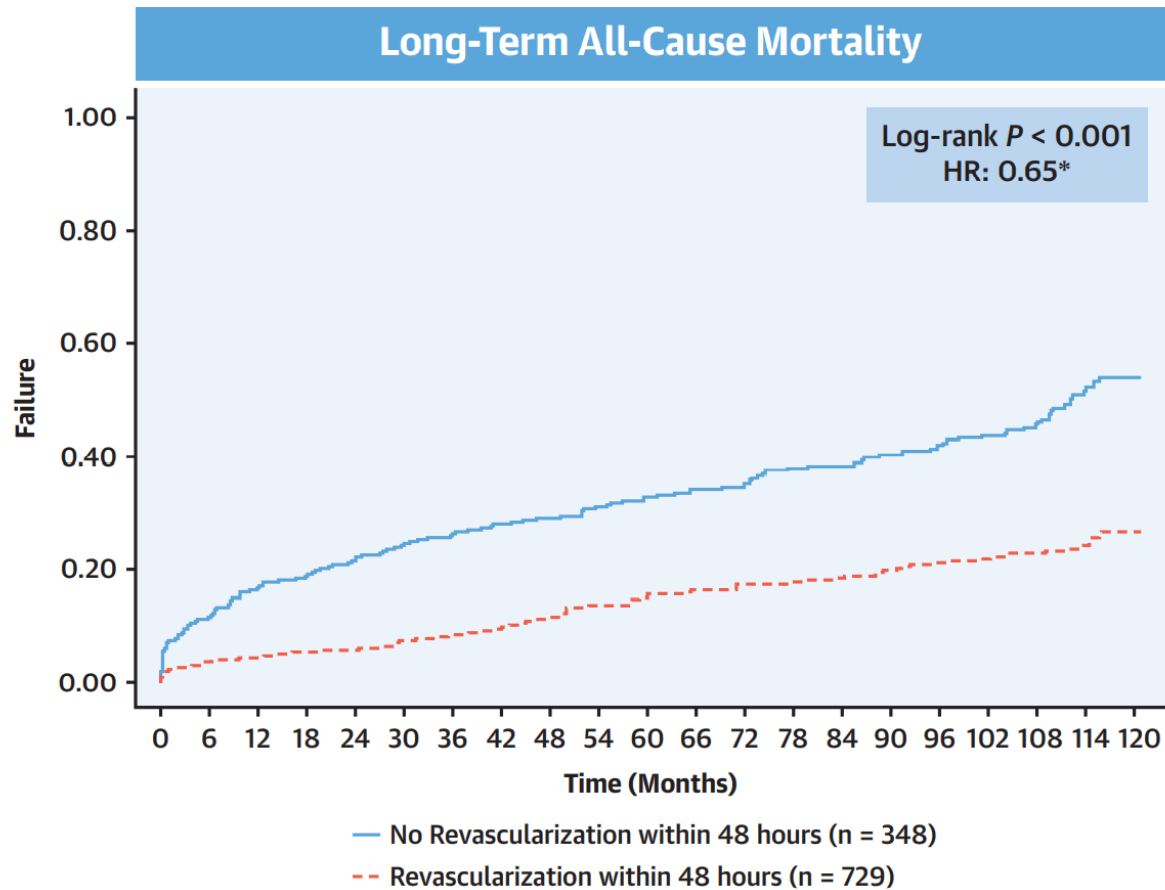
**BRAVE 2:** international, multicenter, open-label, randomized controlled trial conducted on 365 patients without persistent symptoms admitted with the diagnosis of STEMI between 12 and 48 hrs after symptom onset



# Percutaneous Myocardial Revascularization in Late-Presenting Patients With STEMI



3 nationwide studies from the FAST-MI program  
(1-month period in 2005, 2010, 2015)  
6,273 STEMI  $\leq 48$  hrs from symptom onset



# Summary

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- **Patients who present late with an acute MI account for 10-18% of the overall STEMI in contemporary series.**
- **In the treatment of late-comers with STEMI, clinical evaluation and risk stratification represent paramount factors helping in decision-making for the best therapeutic management.**
- **Multiple mechanistic studies, and contemporary registries suggest there is a presumed benefit for a prompt restoration of coronary flow in late-presenters.**
- **A randomized trial comparing PCI with optimal medical therapy is highly warranted in late-comers with STEMI. Italy could make a significant contribution in this field. ANMCO should be the leader in this pivotal trial on the basis of GISSI**

