

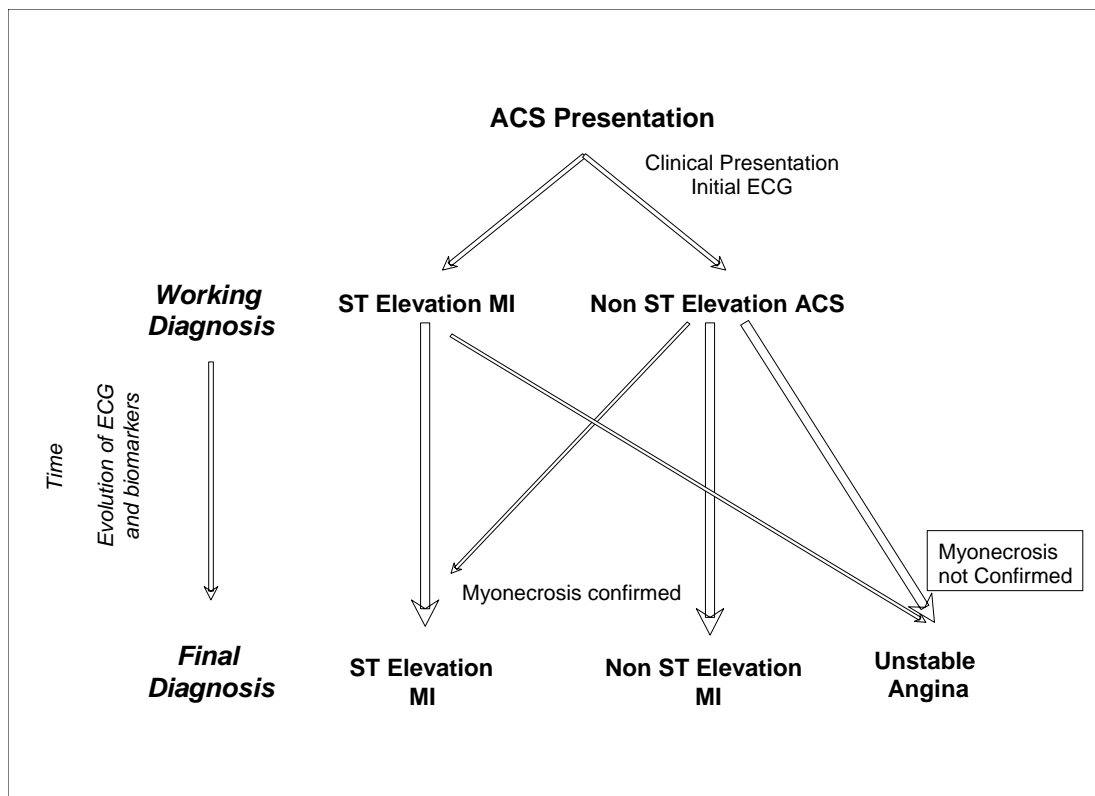
ACUTE CORONARY SYNDROMES

WHO NEEDS AN INVASIVE APPROACH AND WHEN?

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ACS: WORK IN PROGRESS

- STEMI usually due to ruptured plaque with superadded thrombus causing acute coronary occlusion
- ACO only becomes AMI when the obstruction is unrelieved
- Is a nonSTEMI sometimes a STEMI which hasn't happened yet??

IDEAL OBJECTIVES

- Every patient with salvagable myocardium, or myocardium at risk should have immediate/urgent catheter and revascularisation
- All patients with STEMI should have access within 90 minutes of time of first medical contact to a balloon and stent.

THE REAL WORLD

- Tyranny of distance
- Time to presentation
- Individual patient characteristics
- Long door to balloon time
- How definite is the data?

Let's elaborate.....

TYRANNY OF DISTANCE FOR PRIMARY PCI

- Diagnosis where, by whom and how accurately made
- Ambulance availability and type
- Extraction time: double and add some
- Weather
- Stability on transfer
- Opportunity cost of missing lysis

INDIVIDUAL PATIENT CHARACTERISTICS

- Time since pain onset
- Intercurrent disease
- Patient preference
- Has the horse bolted
- Uncertainty about the diagnosis

DOOR TO BALLOON TIME OFTEN GREATER THAN 90 MINUTES

- Initial assessment and diagnosis, usually by a doctor
- Transfer arrangements made
- Ambulance availability
- Travel conditions
- Travel time
- Patient stable for transfer ?escort
- Bed availability
- Patient received, clerked, consented and transported quickly to cath lab.
- Cath lab ready, open and staffed
- Anatomy suitable for stenting
- Once TIMI3 flow, achieved, no microvascular obstruction

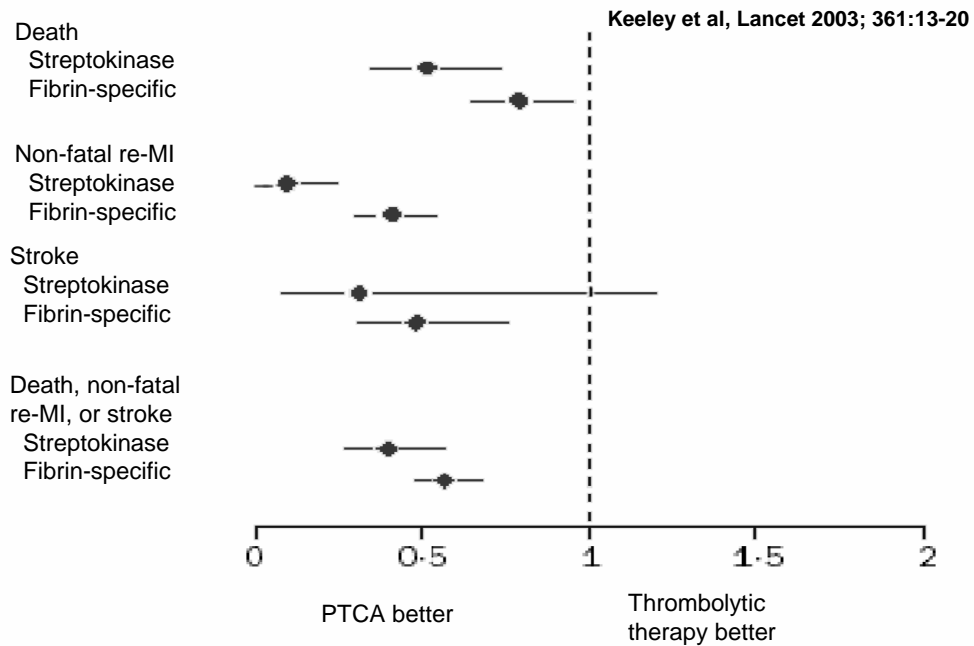
THE EVIDENCE :

PCI V LYSIS

DANAMI-2 (Andersen et al,
NEJM 2003; 349: 733-746)

- Compared acute lysis to rapid extraction and invasive treatment in five PCI centres in Denmark
- Composite endpoint of death, stroke and reinfarction at 30 days significantly in favour of the acute intervention for STEMI
- SUBSEQUENT META ANALYSIS largely affected by substantial contribution from inclusion of DANAMI-2 data

Short term clinical outcomes - PCI vs Lytics



DANAMI DECODED

- Only 37% randomised; 4% too sick to be included
- Reinfarction during PCI was excluded from analysis
- 96% arrived in cath lab within 2 hours

In the thrombolysis group:

-no ticlopidine or clopidogrel

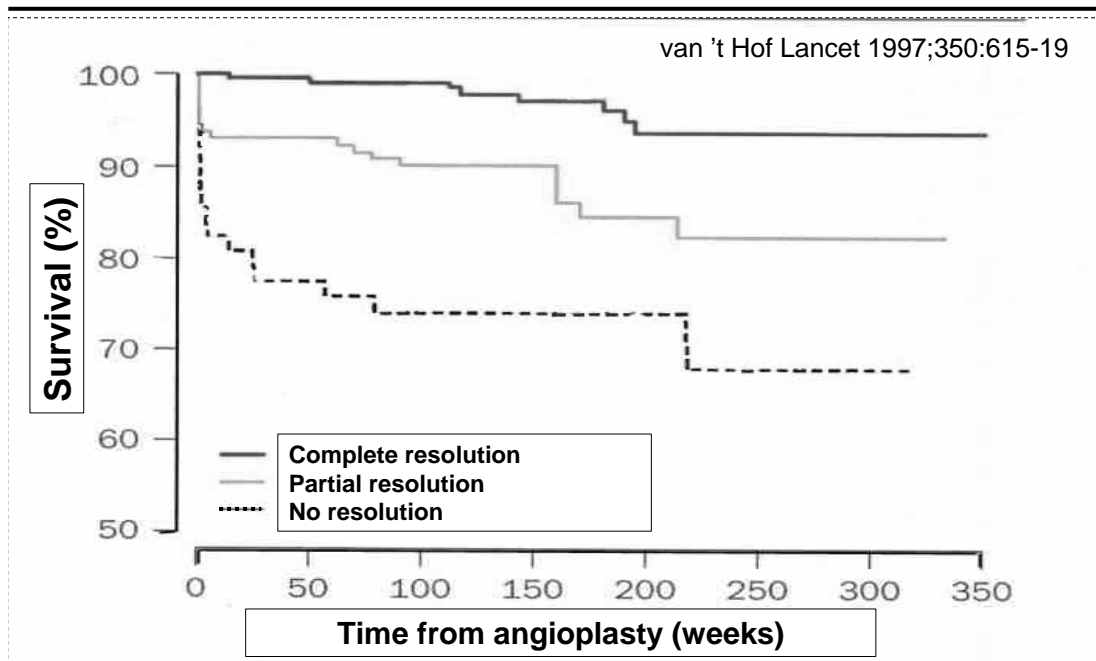
-rate of 'mechanical revascularisation' only 20% at 30 days ie low cardiac catheterisation rate after thrombolysis

-protocol for failure of thrombolysis was repeat thrombolysis at 12 hours

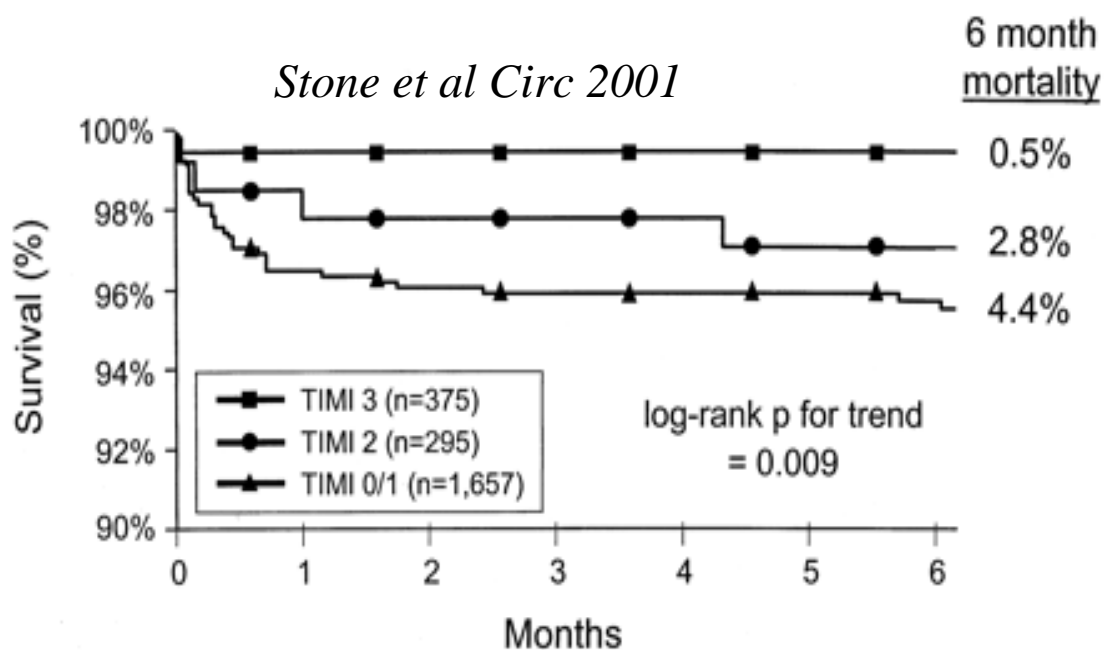
COMPOSITE ENDPOINT DRIVEN ENTIRELY BY TREATMENT GROUP
DIFFERENCE IN RATE OF REINFARCTION

THEREFORE UNJUSTIFIED CONCLUSIONS, AND NOT
APPLICABLE TO AUSTRALIA

ST recovery after primary PCI

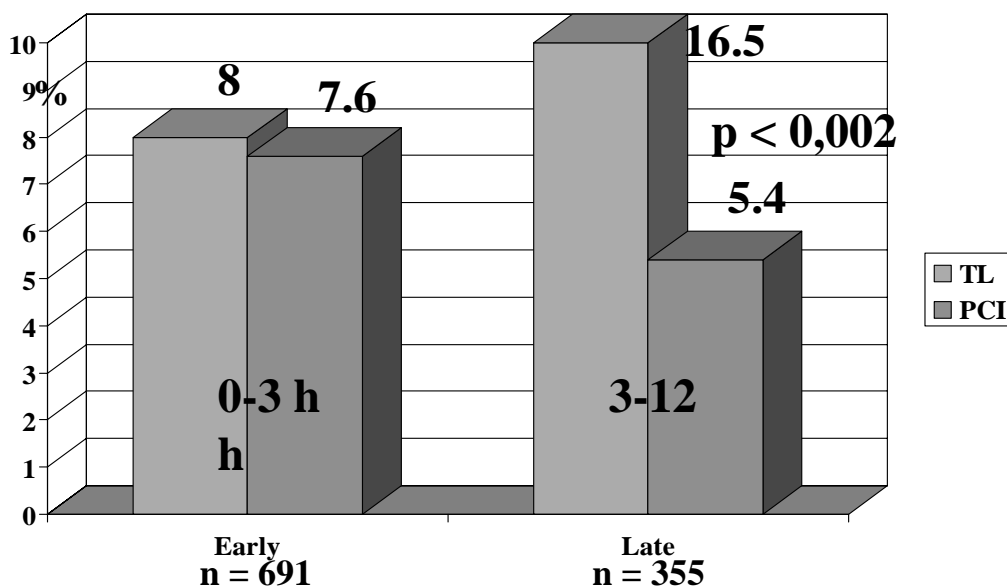


TIMI flow prior to primary PCI



mortality and time to presentation

PRAGUE 1&2- *Widimsky et al EHJ 2000 & 2003*

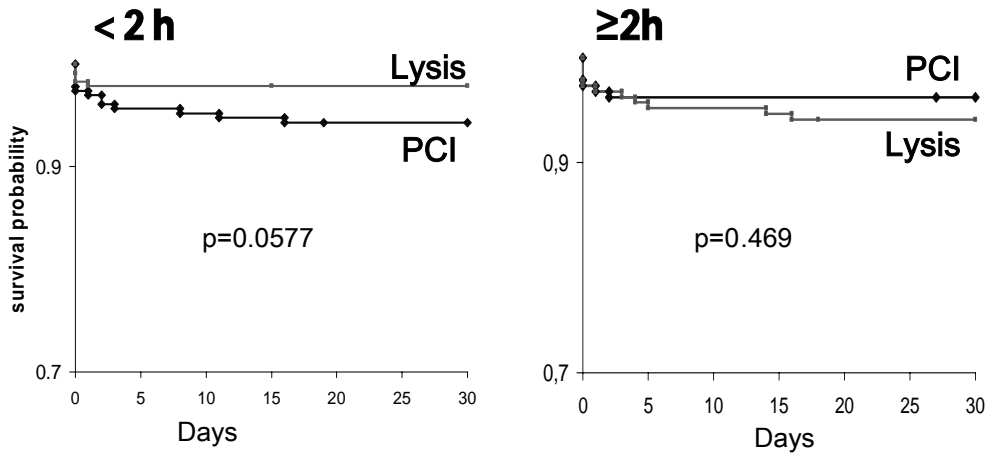


Results – CAPTIM primary endpoint

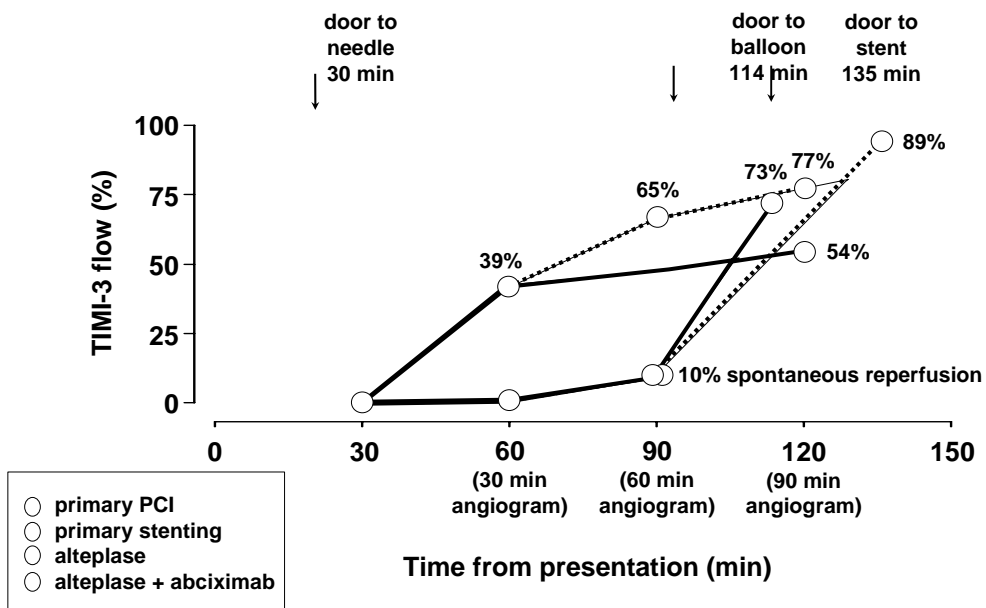
	Prehospital Thrombolysis n = 419	Primary PCI n = 421	P Value
Primary endpoint (%)	8.2	6.2	0.29
	RR = 0.76 95% CI = 0.46 - 1.24		
Death (%)	3.8	4.8	0.60
Reinfarction (%)	3.7	1.7	0.13
Disabling stroke (%)	1.0	0.0	0.12

For the primary composite end point overall event rates were 6.2 percent in the primary angioplasty group and 8.2 percent in the prehospital thrombolysis group (P=0.29). There was a slightly higher mortality rate in the angioplasty group (4.8 vs 3.8 percent; P=0.61) but this group evidenced less stroke (0.0 vs 1.0 percent; P=0.12) and less recurrent infarction (1.7 vs 3.7 percent; P=0.13) (Table 3).

Mortality



TIMI-3 flow rates with different reperfusion strategies



What we MIGHT be able to say

- If door to needle is < 30 minutes, and door to balloon is >90min, LYSE.
- If door to needle is >30 minutes and door to balloon is < 90 minutes, EXTRACT
- Given both options available, PCI only better than lysis if EXTRA delay is < ONE HOUR
- With increasing duration of time from onset of pain to presentation with STEMI, the reduction in benefit of lysis is relatively greater than that of primary PCI

THE IMPORTANT PRINCIPLE

Open the culprit artery quickly

Thrombolysis is effective in at least 70% , when administered within 2 hours of ACO.

Thrombolysis may be better than PCI for these early presenters, regardless of site of presentation.

THE MAJORITY OF STEMIs in AUSTRALIA and OS ARE TREATED WITH THROMBOLYTICS.

The reperfusion benefit of successful thrombolysis requires an aggressive interventional approach to prevent reocclusion and reinfarction.

CATHETERISING NON STEACS

Risk stratify on arrival

- troponin rise
- prolonged pain at rest
- dynamic ECG changes with pain
- diabetic
- associated CCF
- recurrent pain on treatment

APPROACH TO NONSTEACS

- Try to catheterise those with raised troponins and HIGH risk UAP.
- ?Observe in hospital.
- ?Stress test

BUT MOST IMPORTANTLY.....

USE CLINICAL ACUMEN

- Not every CP needs a catheter

- Unstable coronary syndromes do still occur with normal troponins

- Individualise treatment according to location, facilities and the patient: using EBM is noble but sometimes not possible, if the patient doesn't fit the evidence base!