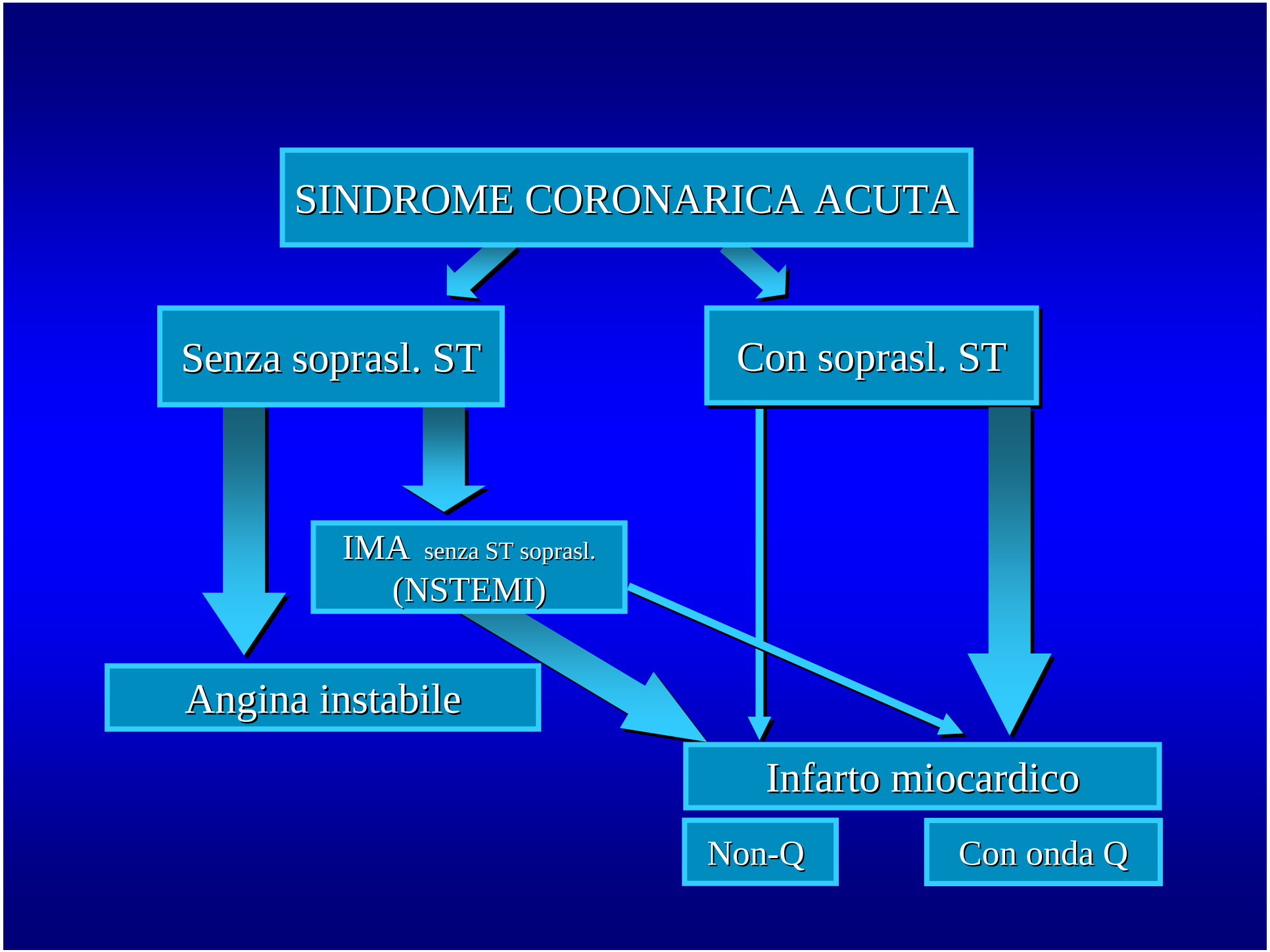
Le Sindromi Coronariche Acute

www.fisiokinesiterapia.biz

Sindromi Coronariche Acute

Classificazione


SINDROME CORONARICA ACUTA
Senza soprasl. ST
Con soprasl. ST
IMA senza ST soprasl.
(NSTEMI)
Angina instabile
Infarto miocardico
Non-Q
Con onda Q

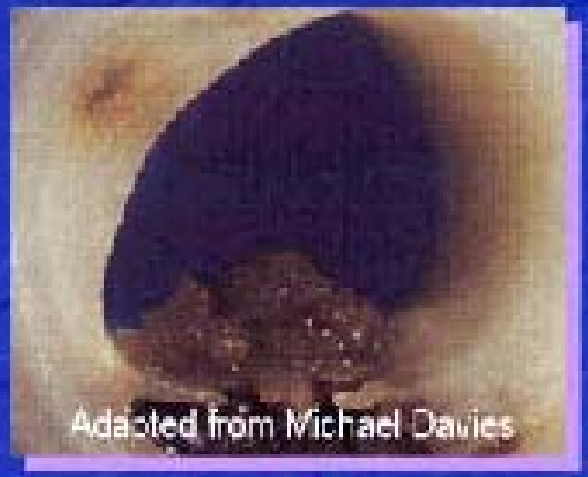
Sindromi Coronariche Acute

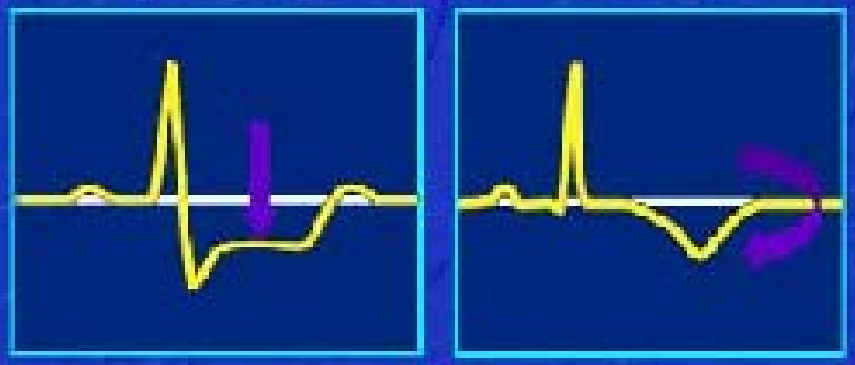
Fisiopatologia

SCA con persistente ST sopraslivellato

CK- MB or Troponin ↑

SCA senza persistente ST sopraslivellato

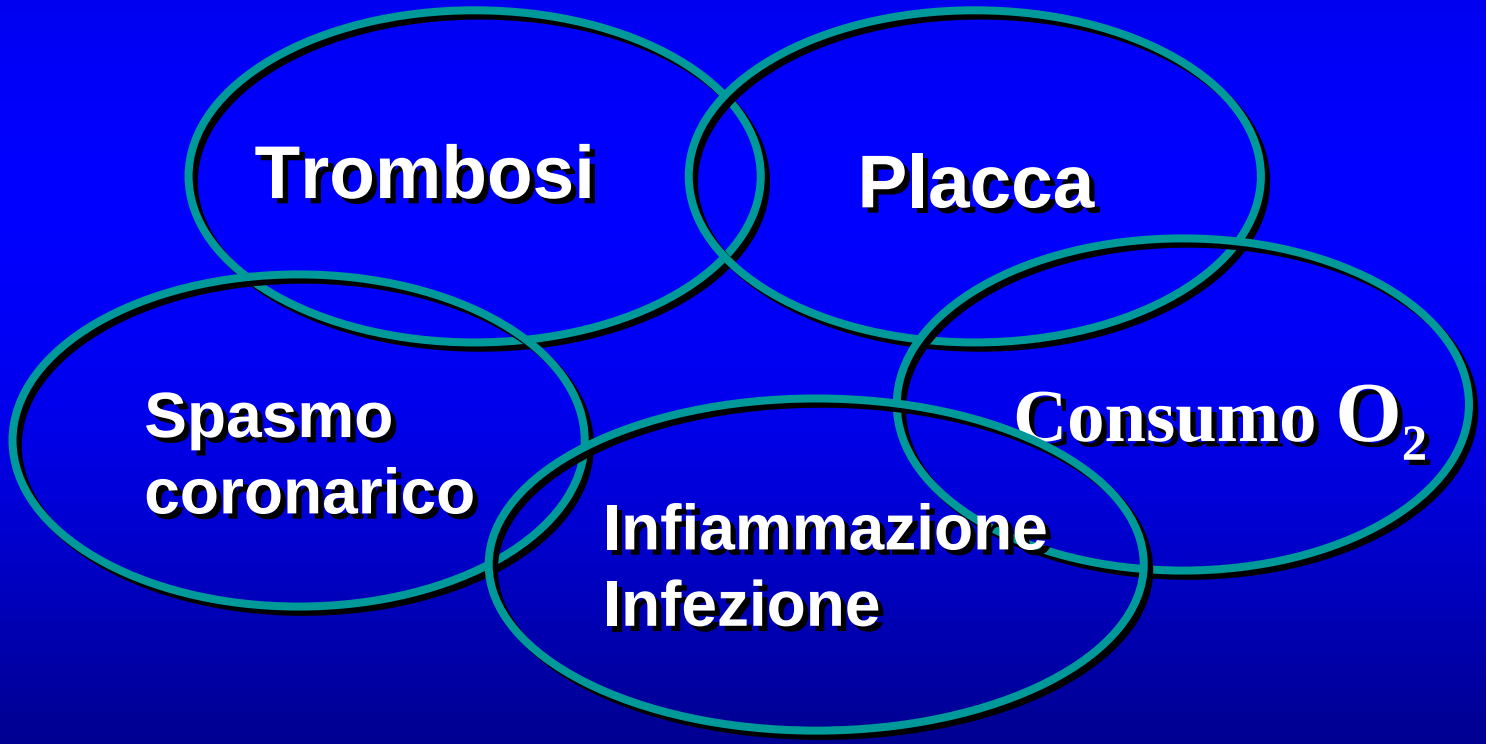




Troponin elevated or not

SINDROMI CORONARICHE ACUTE:

Meccanismi eziopatogenetici comuni per l'angina instabile e l'infarto miocardico acuto



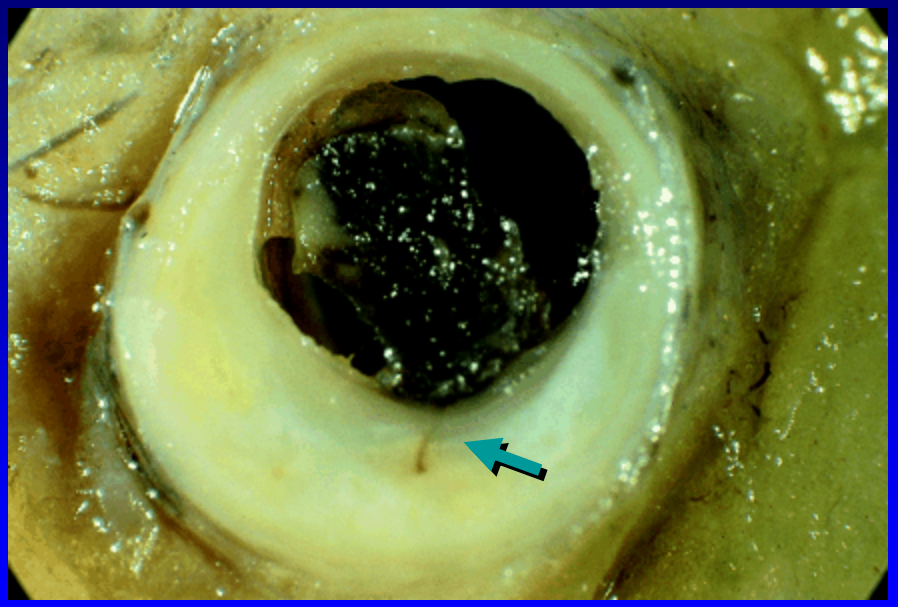
Eventi coronarici acuti

- **sono innescati dalla *trombosi* della placca colpevole**
- **responsabili della trombosi sono 2 meccanismi:**
  - *erosione*: ampia denudazione dell'endotelio che ricopre la placca
  - *rottura*: della capsula fibrosa che racchiude il nucleo lipidico

Eventi coronarici acuti

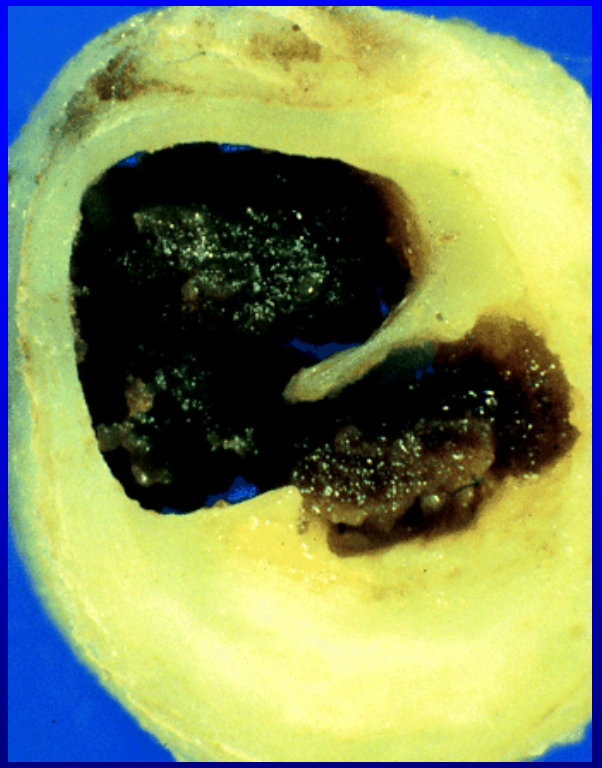
- **Rottura: più frequente in siti senza stenosi o con stenosi lieve**

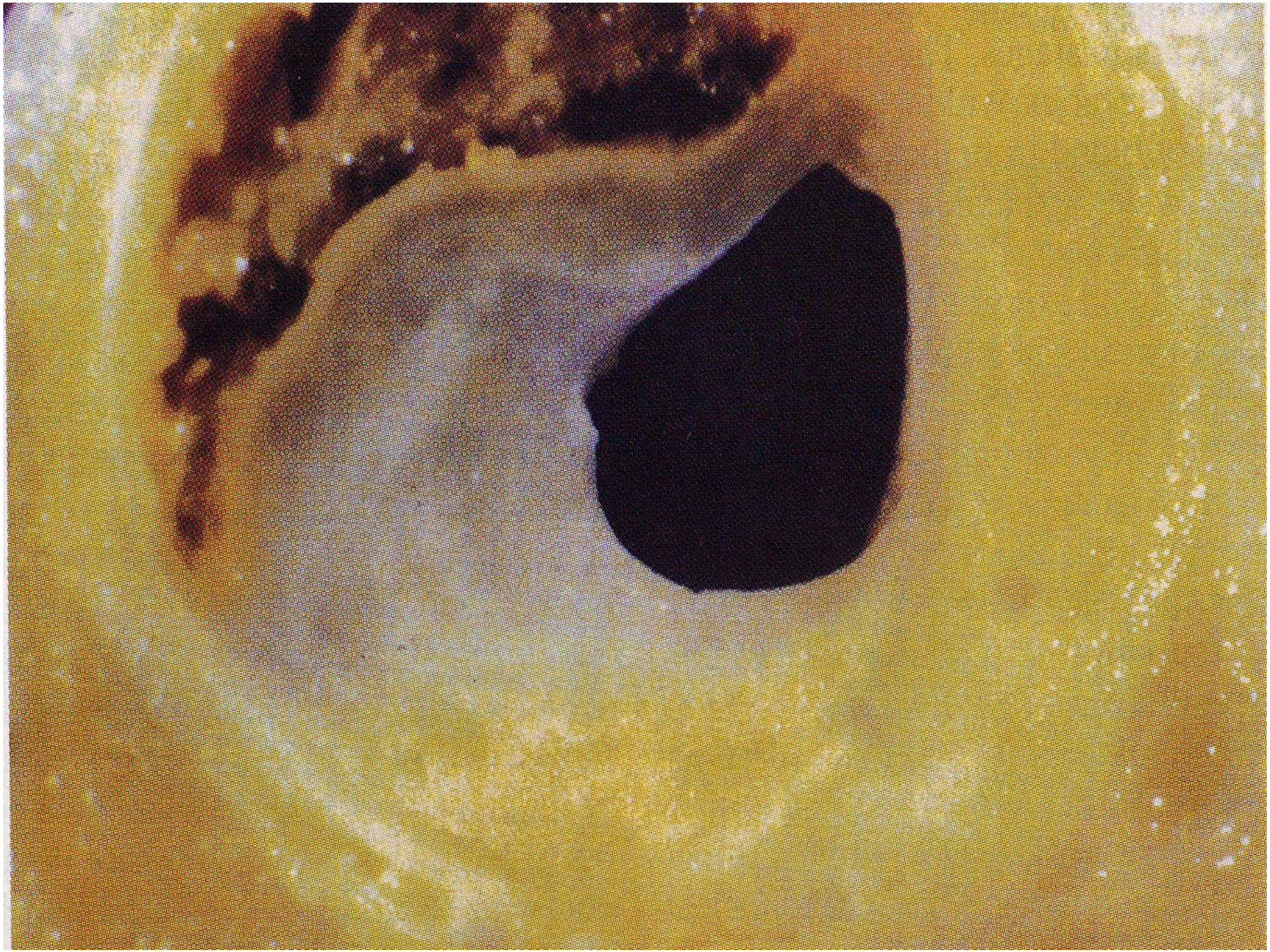
- **Erosione: più frequente se pre-esistente stenosi e in arterie più piccole**

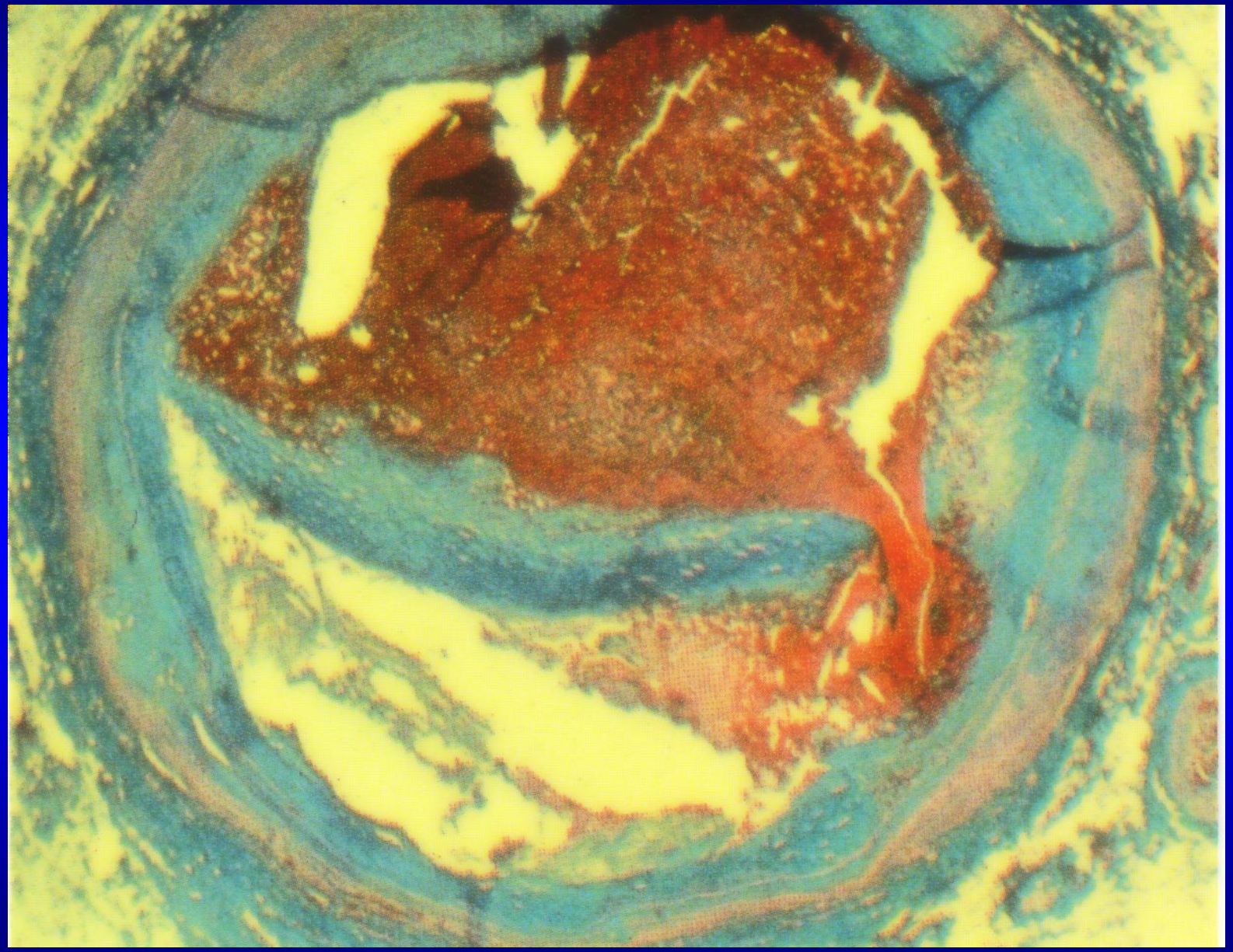


Trombosi causata
da erosione ( )

Trombosi causata da rottura

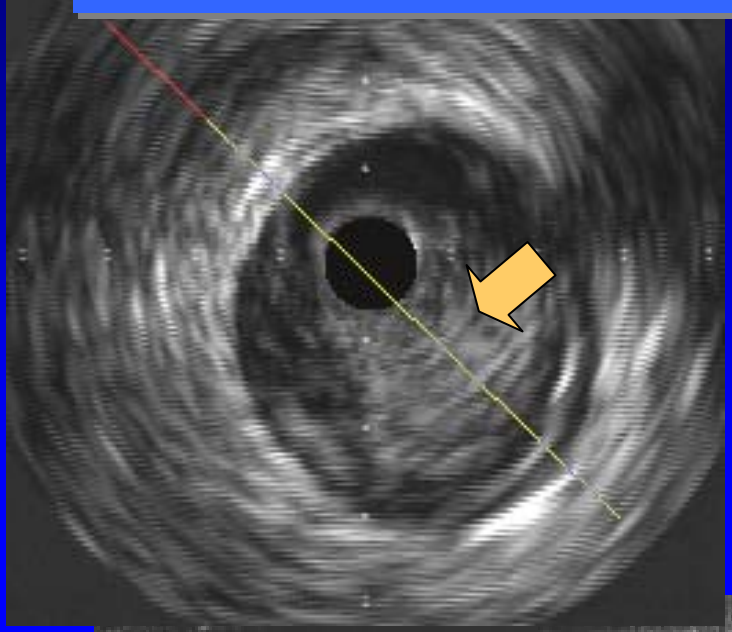


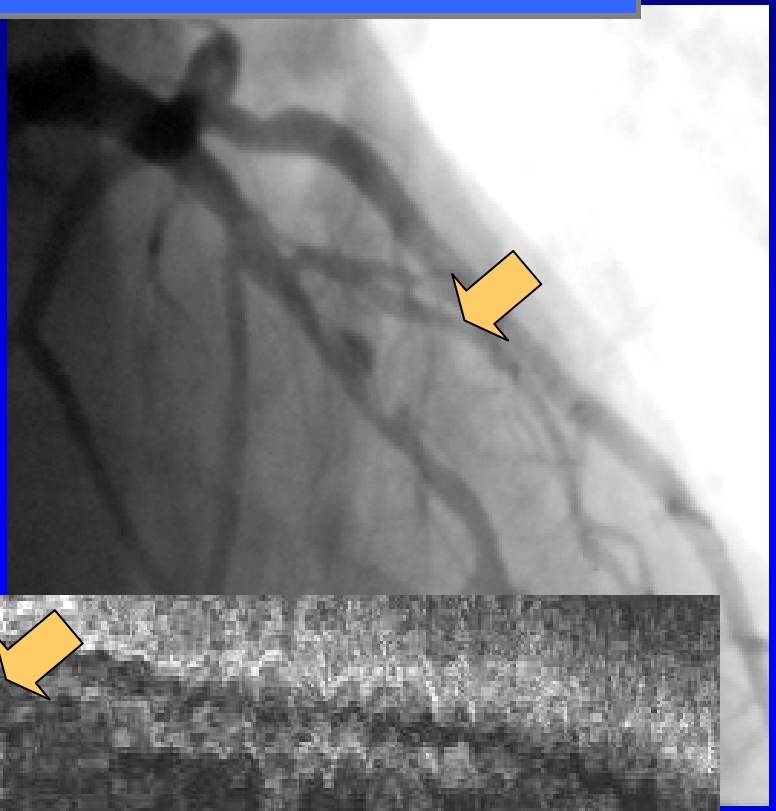


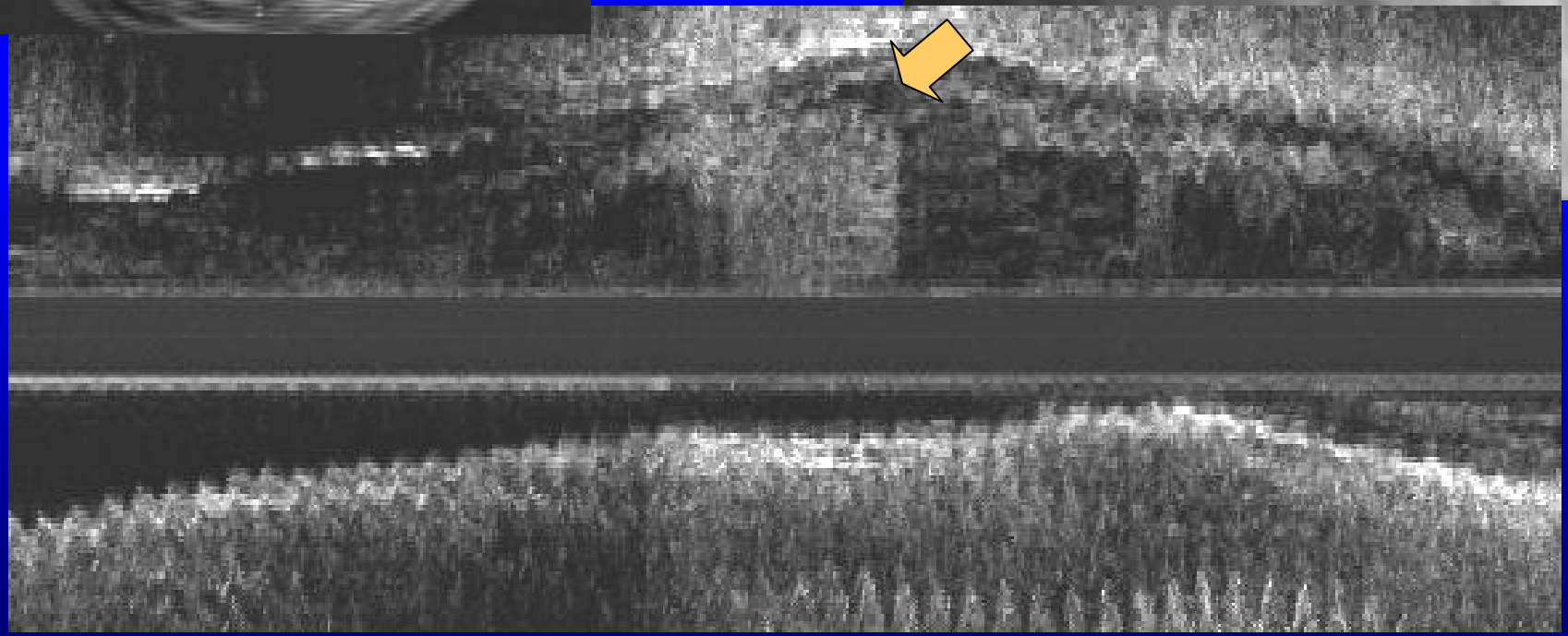


Rottura di placca all'IVUS

Trombo intracoronarico all' IVUS

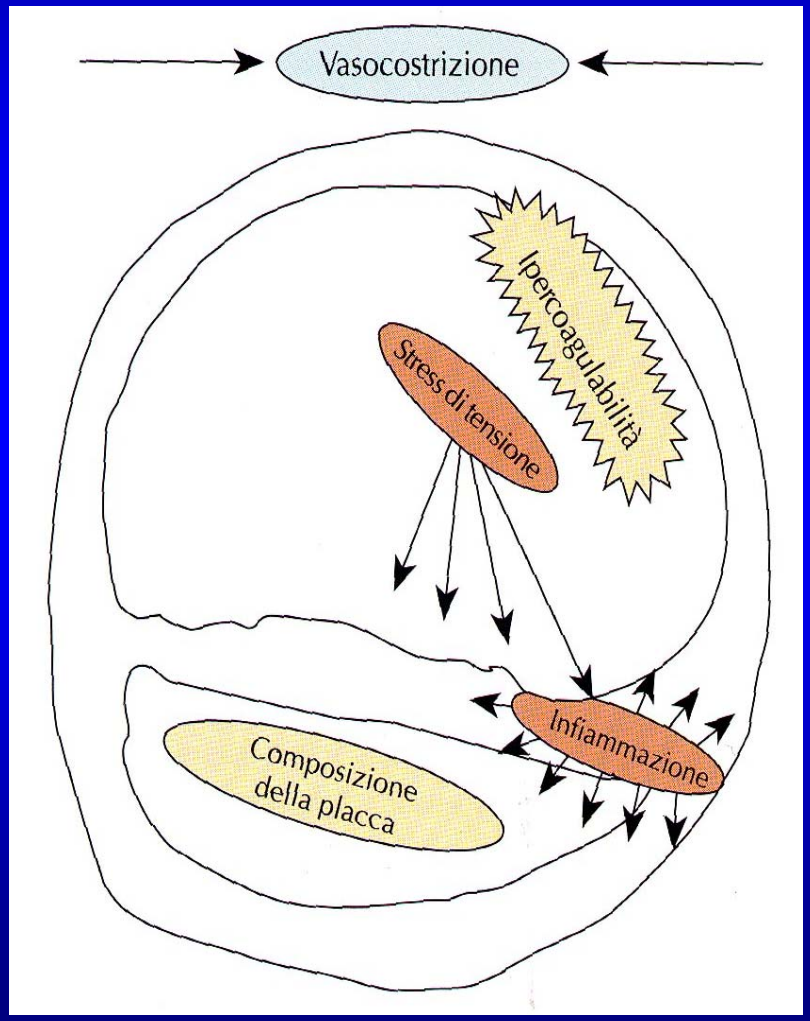


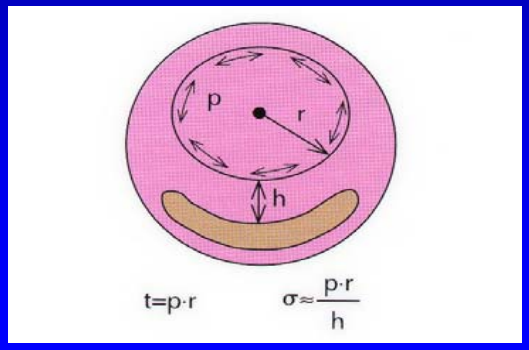


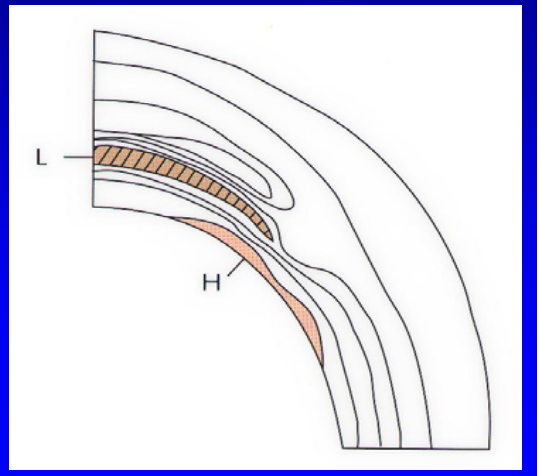


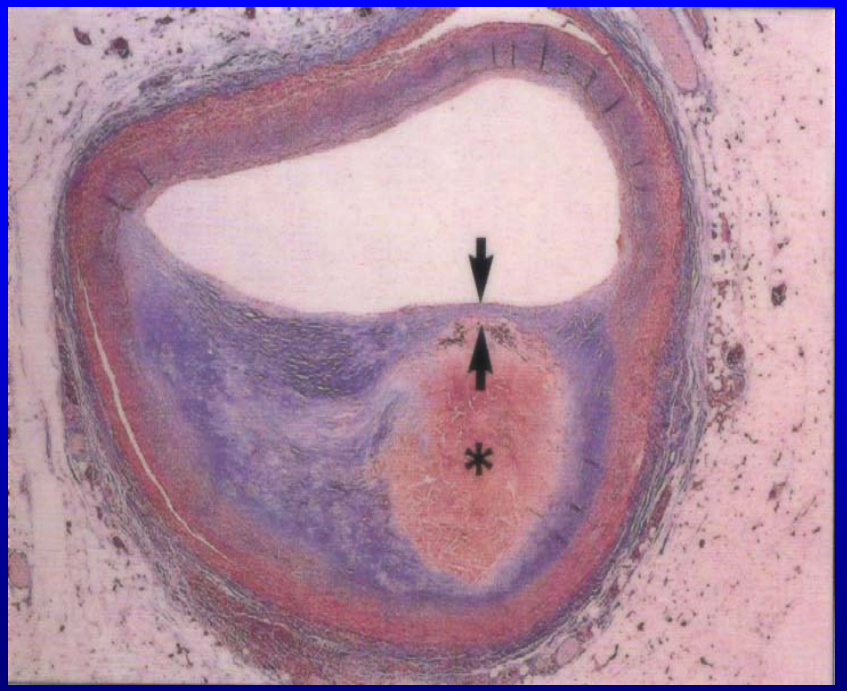
LA PLACCA

Patogenesi della rottura





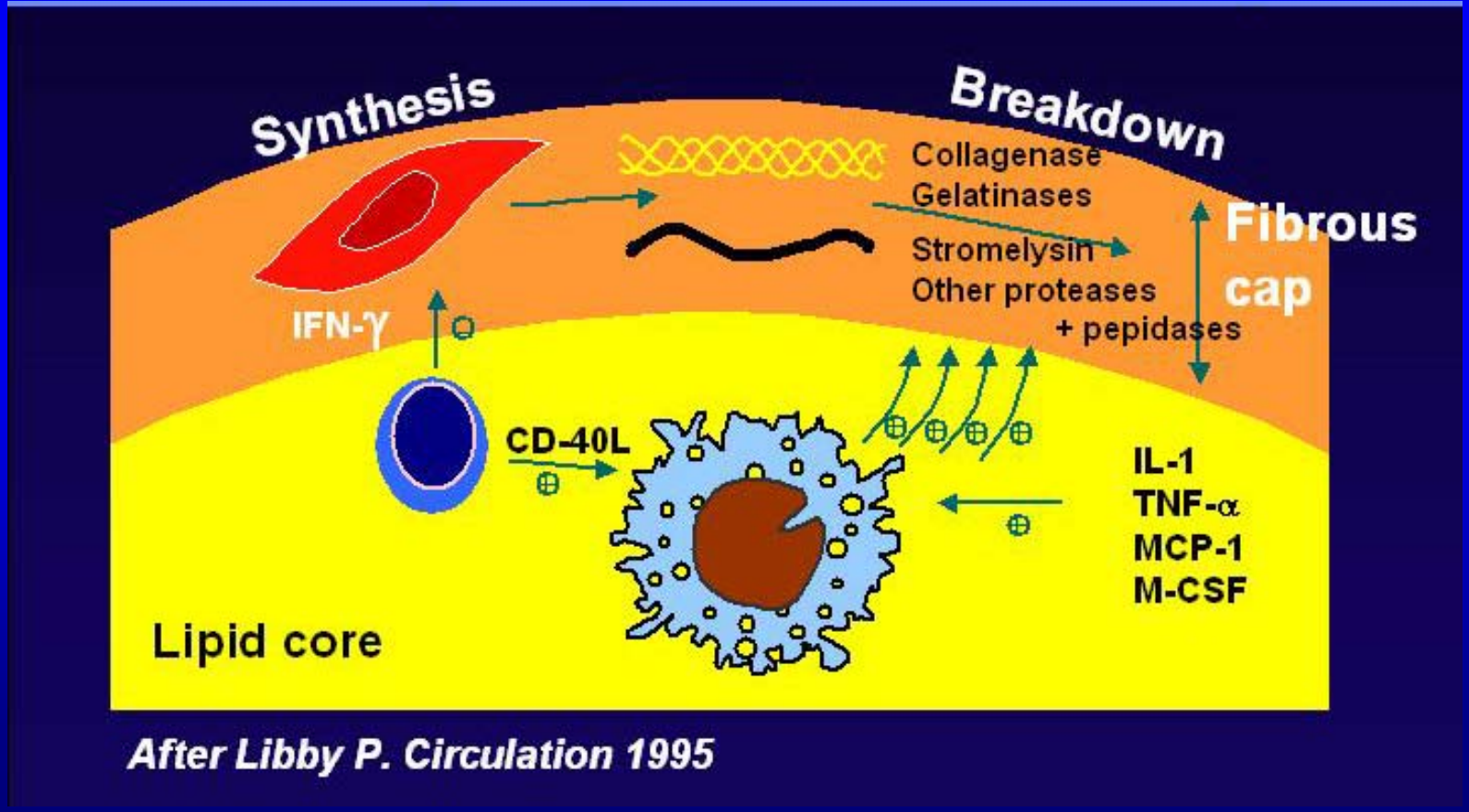




LA PLACCA

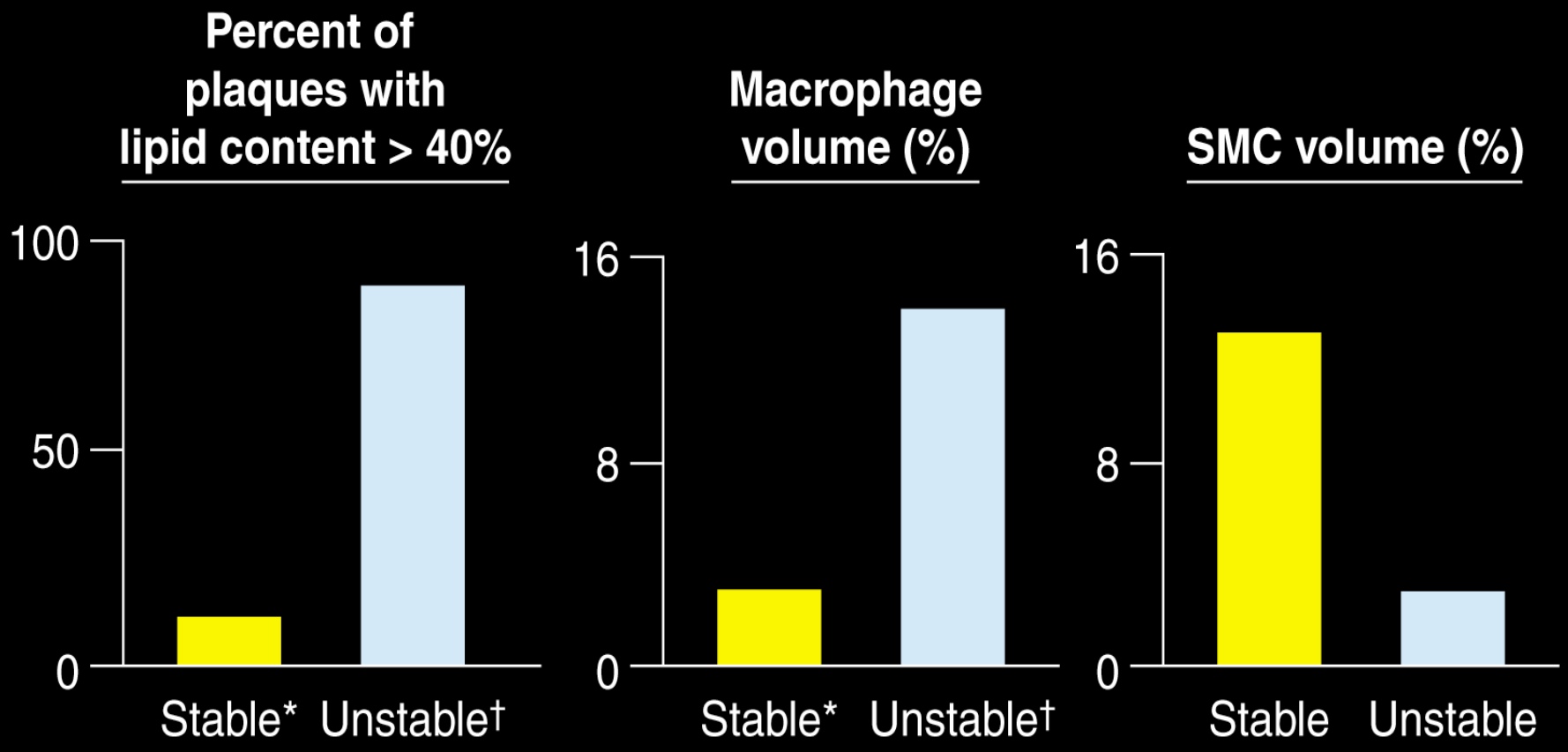
Patogenesi della rottura

Fenomeno autodistruttivo



VBWG

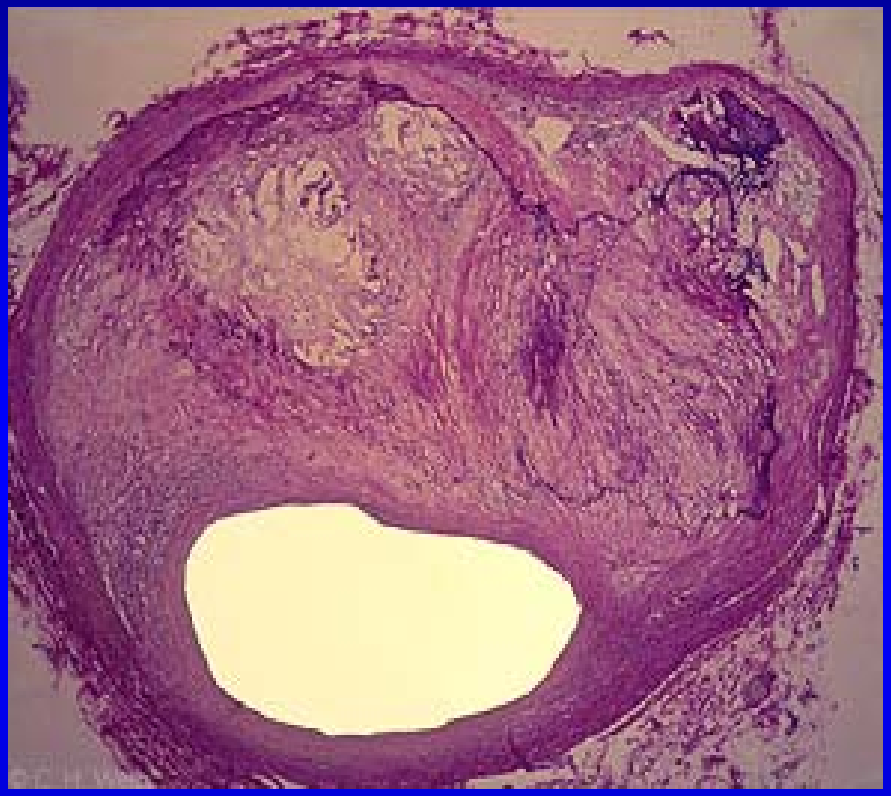
Patients dying from stable vs unstable coronary syndromes: Atheromas have varying composition



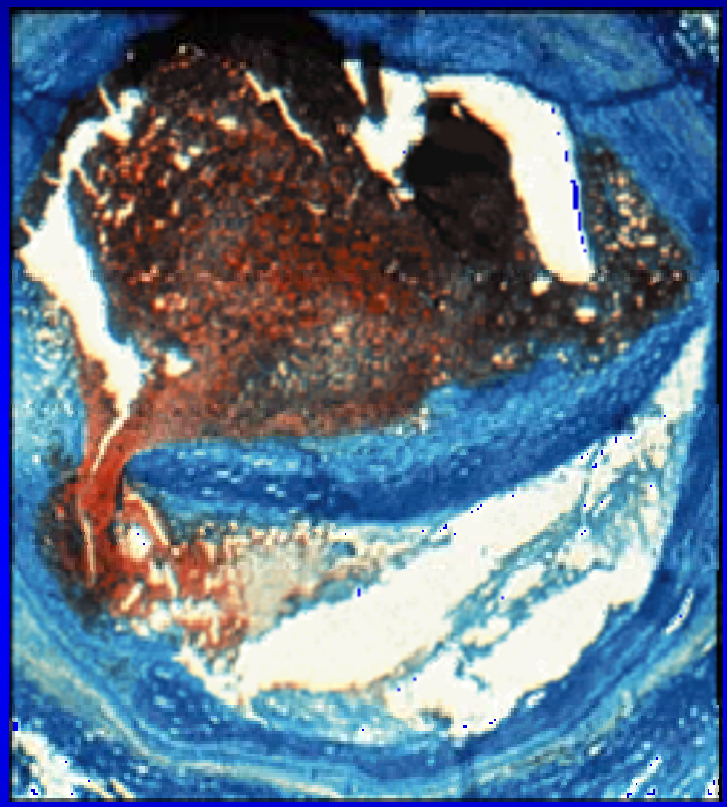
*Stable plaque = smooth surface
†Unstable plaque = fissured

Davies MJ, et al. *Br Heart J.* 1993;69:377-381.

Placca aterosclerotica stabile



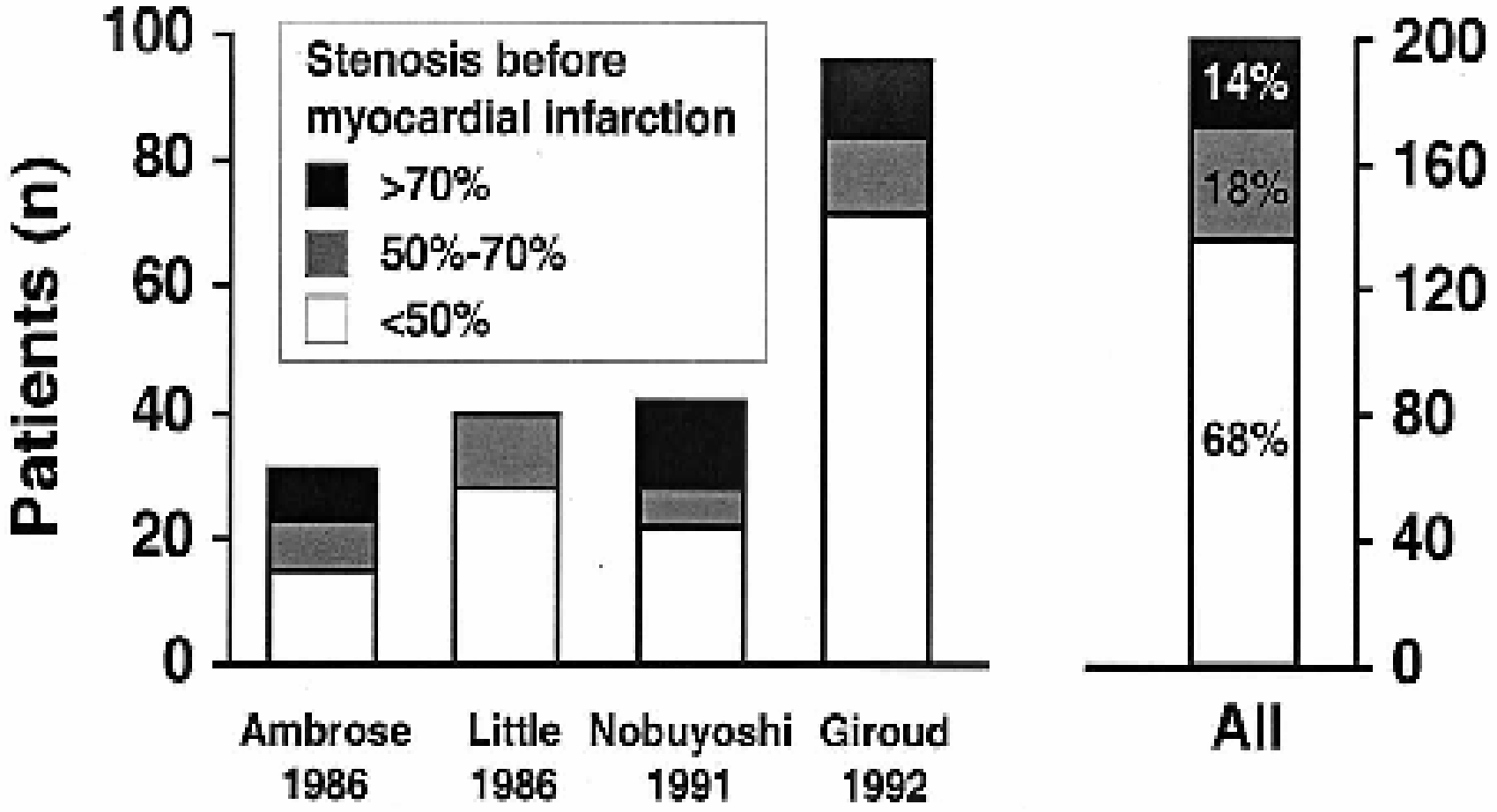
Placca complicata



- Paziente asintomatico
- Angina stabile

Sindrome coronarica acuta

Severity of coronary stenosis detected by angiography before myocardial infarction



R.Corti e al. Am J Med.2002;113:668

Perché stenosi moderate causano sindromi coronariche acute?

Lo stato funzionale dell'ateroma, non soltanto le sue dimensioni o il grado di restringimento del lume, determina la propensione allo sviluppo di sindromi coronariche acute.

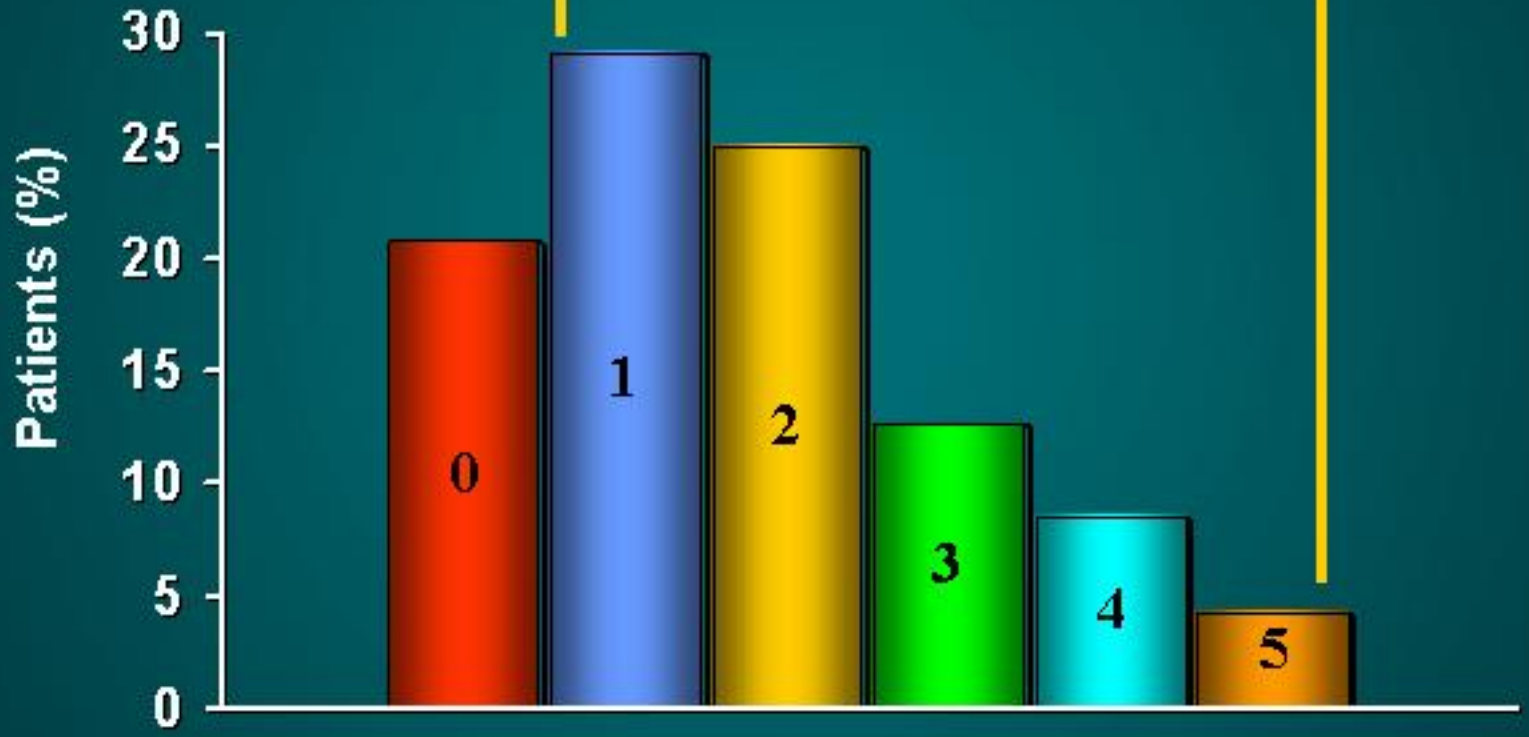
Placca Vulnerabile

Un Concetto Fuori Moda?

- ✓ Arteria vulnerabile
- ✓ Letto vascolare vulnerabile
- ✓ Paziente vulnerabile

Vulnerable Patients

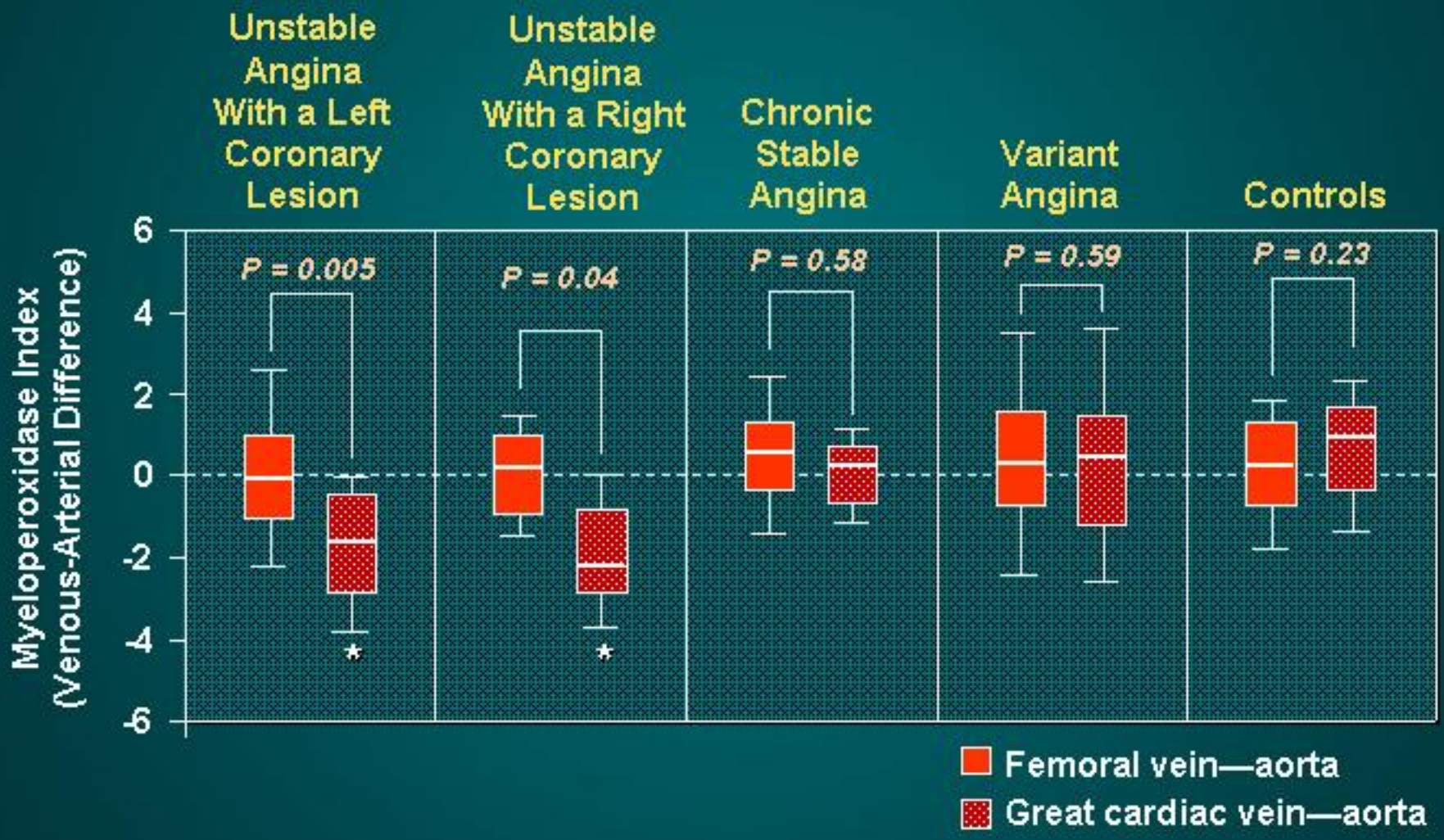
80% of ACS patients have > 1 ruptured plaque



 # ruptured plaques in addition to culprit lesion

Rioufol et al. Circulation 2002; 106:804-808.

Widespread Coronary Inflammation in Unstable Angina



Buffon and Maseri N Engl J Med 2002; 347:5–12

Sindromi Coronariche Acute

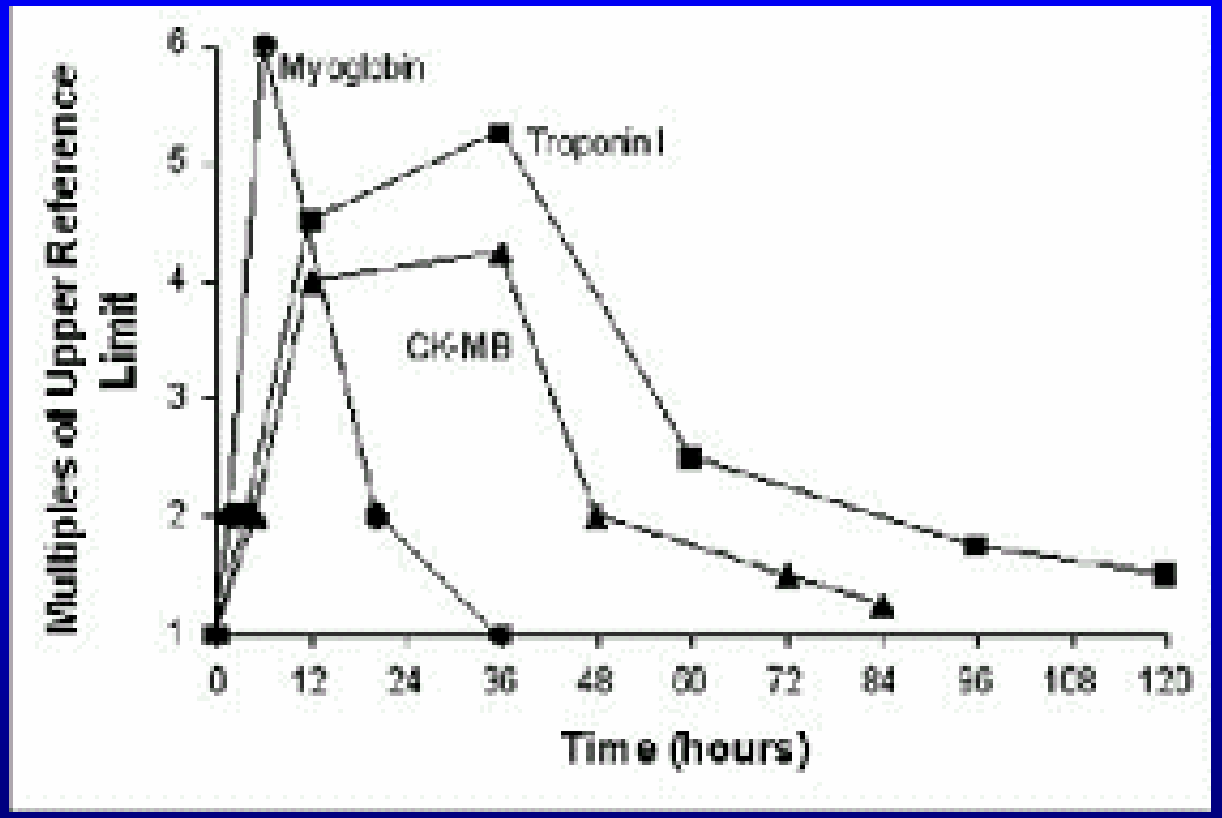
Diagnosi

SCA: quadri clinici

- Dolore toracico “tipico” o “atipico”
- “Equivalenti anginosi”:
  - dispnea-EPA-shock (classificazione di Killip)
  - lipotimia/sincope
  - astenia
  - dolore epigastrico (IMA inferiore)
  - sudorazione algida, nausea, vomito
- SCA asintomatica o paucisintomatica (diabetici, anziani)

SCA: diagnosi di laboratorio

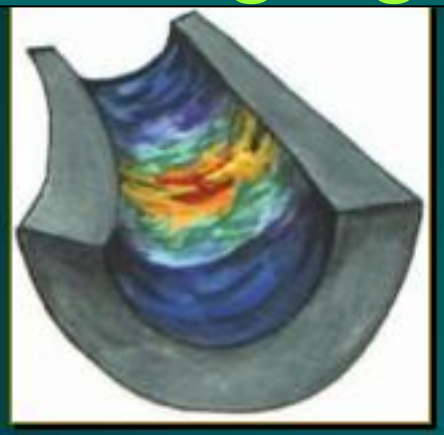
- Enzimi di citonecrosi miocardica:
  - mioglobina, troponine, CK-Mb (SGOT, LDH)



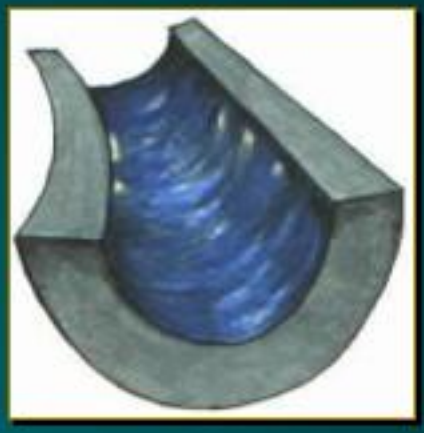
SCA: diagnosi strumentale

- ECG:
  - alteraz. tratto ST e/o onda T;
  - onda Q
- Ecocardiogramma:
  - diagnosi precoce (ECG normale)
  - diagnosi di sede ed estensione
  - valutazione della funzione VS
  - diagnosi delle complicanze meccaniche
- Coronarografia:
  - sede ed estensione della malattia coronarica

Imaging di morfologia vs “attività”



Termografia,
Spettroscopia,
RM con mdc



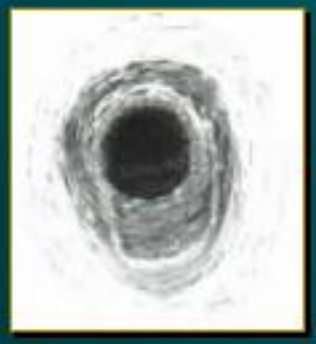
Attività

Placca “attiva” e infiammata

Placca “inattiva” e non infiammata

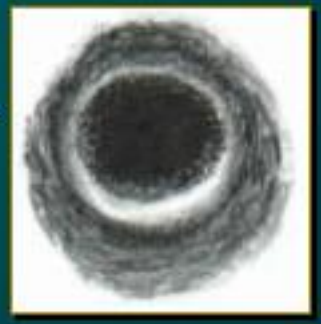
Morfologia

IVUS



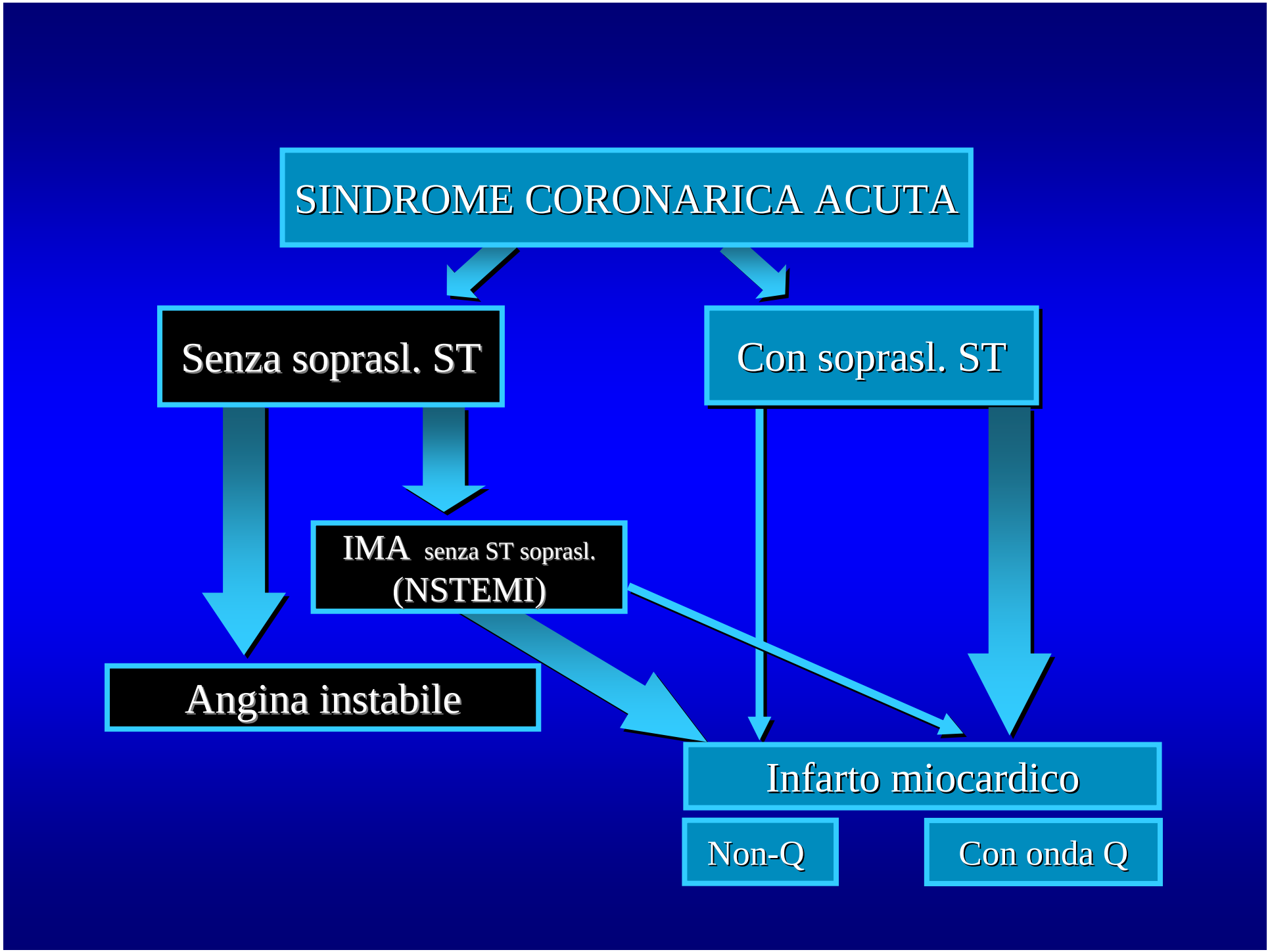
OCT

RM senza mdc



SCA: principi di terapia

- Terapia medica:
  - Antitrombotica:
    - ASA, fibrinolitici, eparina (non frazionata/ a basso PM), inibitori GP IIb/IIIa, clopidogrel
  - Antiischemica:
    - nitroderivati, beta-bloccanti, Ca-antagonisti
  - Prevenzione secondaria:
    - ACE-inibitori, statine
- Terapia interventistica:
  - Angioplastica coronarica
- Terapia chirurgica:
  - By-pass aorto-coronarico


SINDROME CORONARICA ACUTA
Senza soprasl. ST
Con soprasl. ST
IMA senza ST soprasl.
(NSTEMI)
Angina instabile
Infarto miocardico
Non-Q
Con onda Q

SCA senza ST sopraslivellato

Epidemiologia

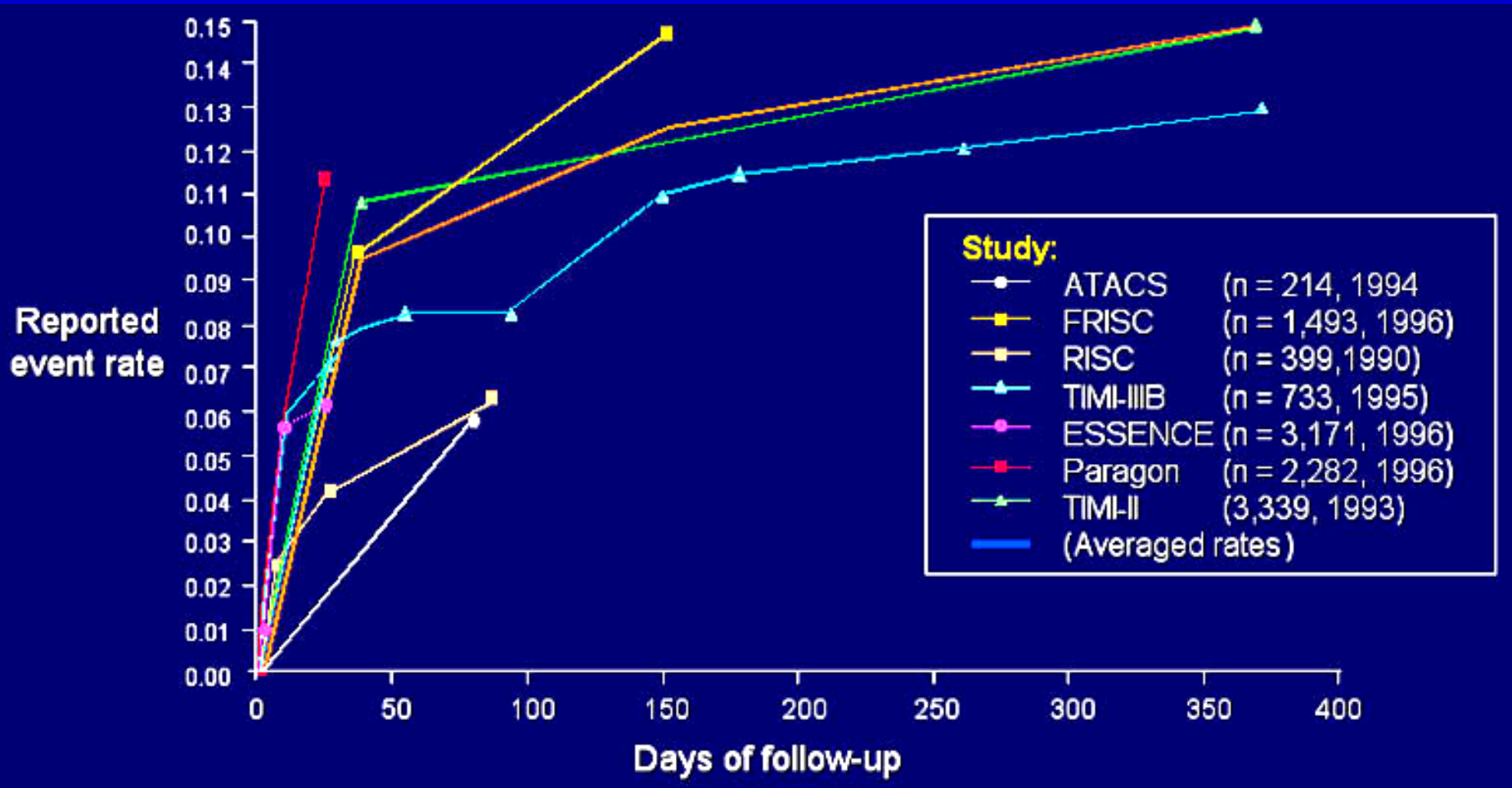
SCA senza persistente ST sopraslivellato

- Uno dei maggiori problemi di salute pubblica
- 1.43 milioni di ospedalizzazioni/anno negli Stati Uniti
- Ancora oggi la prognosi rimane sfavorevole

Rischio di Morte o Infarto Miocardico:
8-16% ad 1 mese di follow-up*

*da recenti trial clinici con antipiastrinici, antitrombotici o di interventistica

Studi sull'Angina Instabile: percentuale di morte e di infarto



ACC/AHA Guidelines Update Ottobre 2002 Sindromi Coronariche Acute NSTE

Nuove direttive “evidence-based”

- **Importanza della stratificazione del rischio**
- **Beneficio del Clopidogrel a breve e a lungo termine**
- **Meglio le LMWH (?)**
- **Inibitori IIb/IIIa e strategia invasiva per pz ad alto rischio**

SCA senza ST sopraslivellato

Stratificazione del rischio

SCA senza persistente ST sopraslivellato

Valutazione del rischio

- Angor/ischemia ricorrente
- Depressione del tratto ST
- Alterazioni dinamiche ST
- Alterazioni troponina
- Diabete
- Instabilità emodinamica
- Aritmie maggiori (TV, FV)

Rischio acuto

- Markers clinici:
  Età
  Storia di IM, BPAC
  Diabete
- Markers biologici:
  CRP
- Markers angiografici:
  EF
  Estensione della malattia

Rischio a lungo termine

Stratificazione del rischio
TIMI Risk Score nelle SCA NSTE

7 Independent Predictors

- Age > 65
- Multiple risk factors
- Known CAD (>50% stenosis)
- Aspirin therapy
- Recurrent angina < 24 hours
- ST-segment deviation
- Elevated CK-MB or troponin

Antman. JAMA 2000: 284: 835

SCA senza ST sopraslivellato

Terapia:
beneficio del clopidogrel

The New York Times

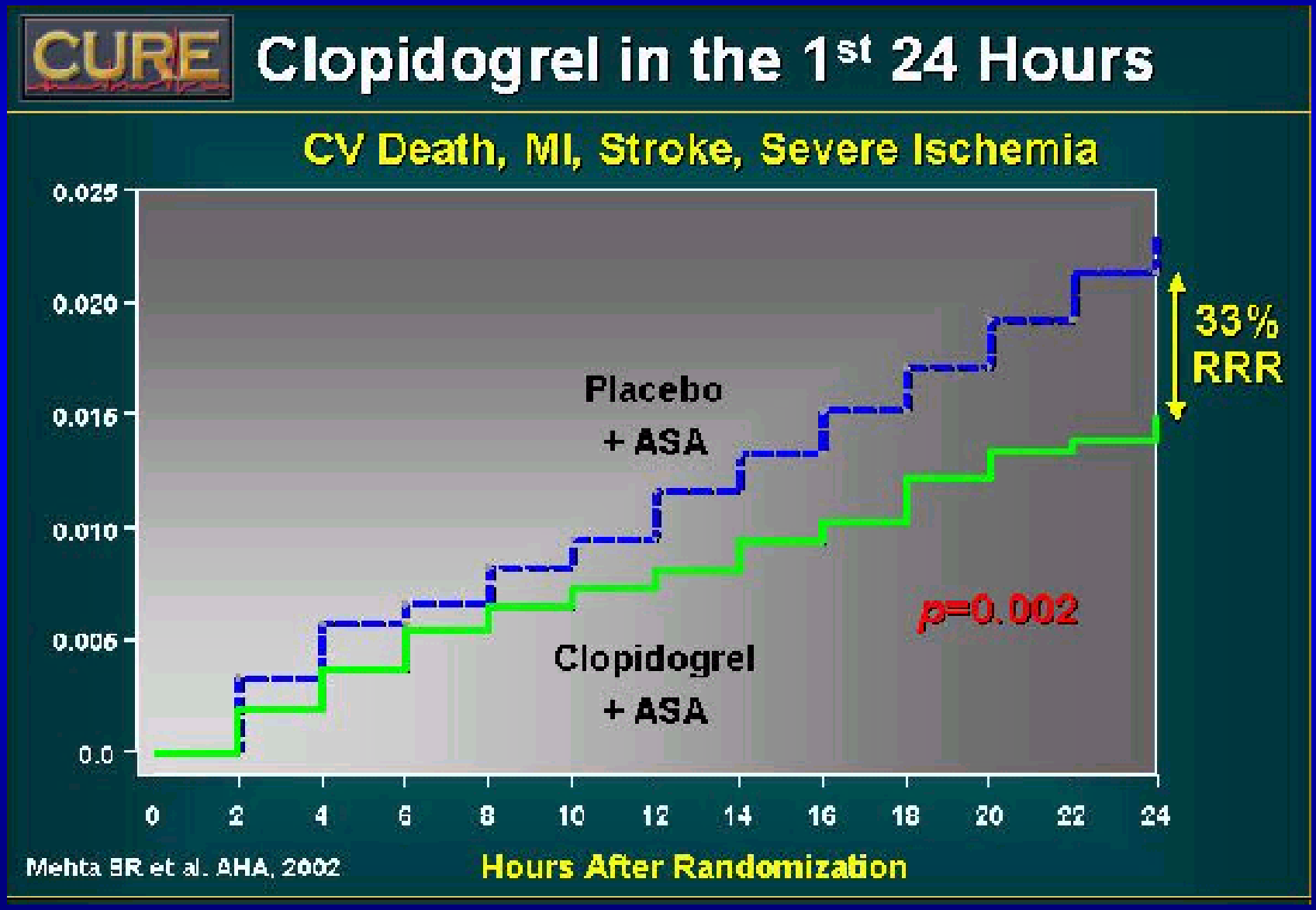
TUESDAY, MARCH 20, 2001

Drug Hailed As a Heart And Stroke Protector

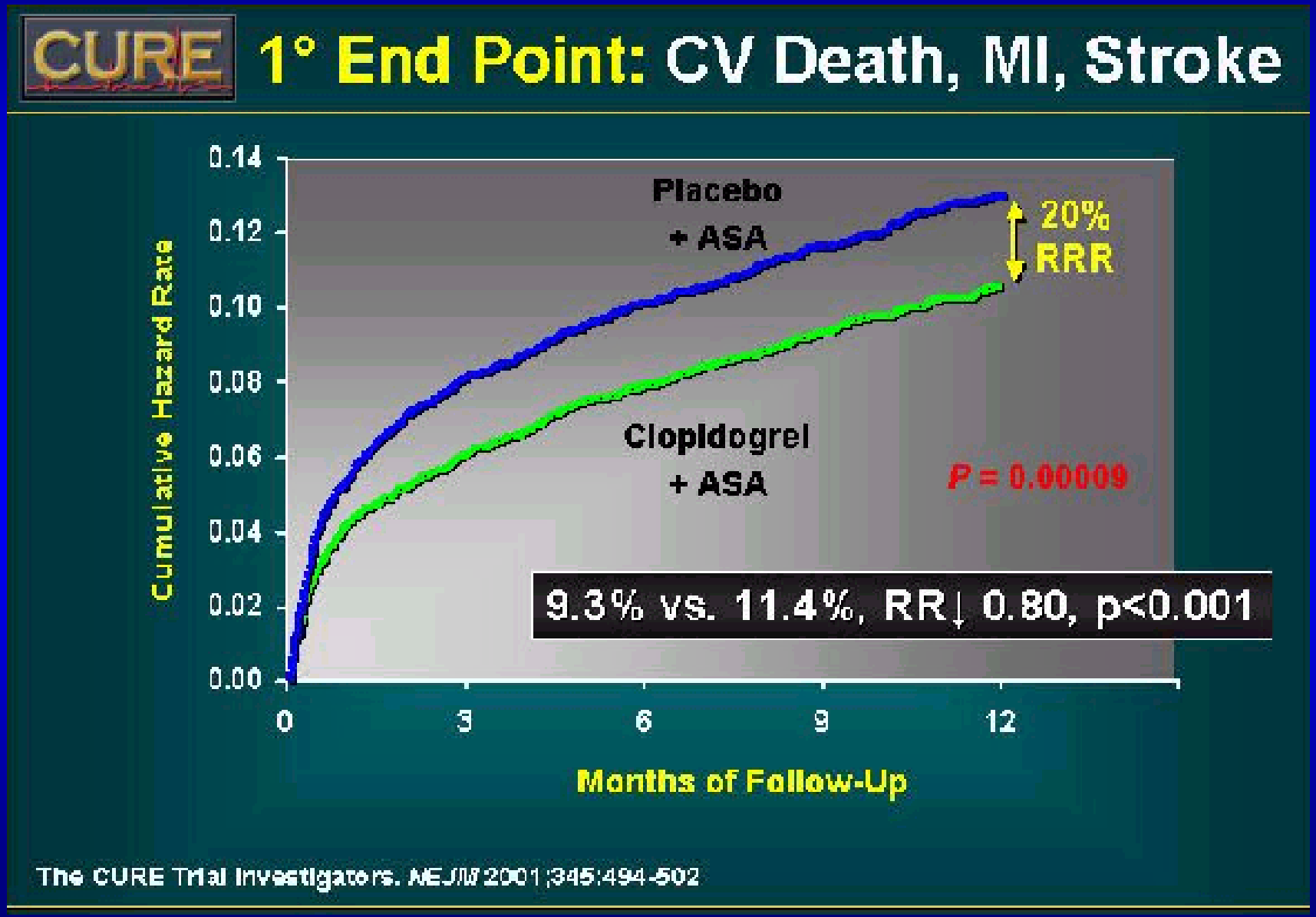
The drug is clopidogrel ...

The drug's benefits began within two hours of taking it and continued long term ...

Clopidogrel: beneficio a breve..



.. e a lungo termine

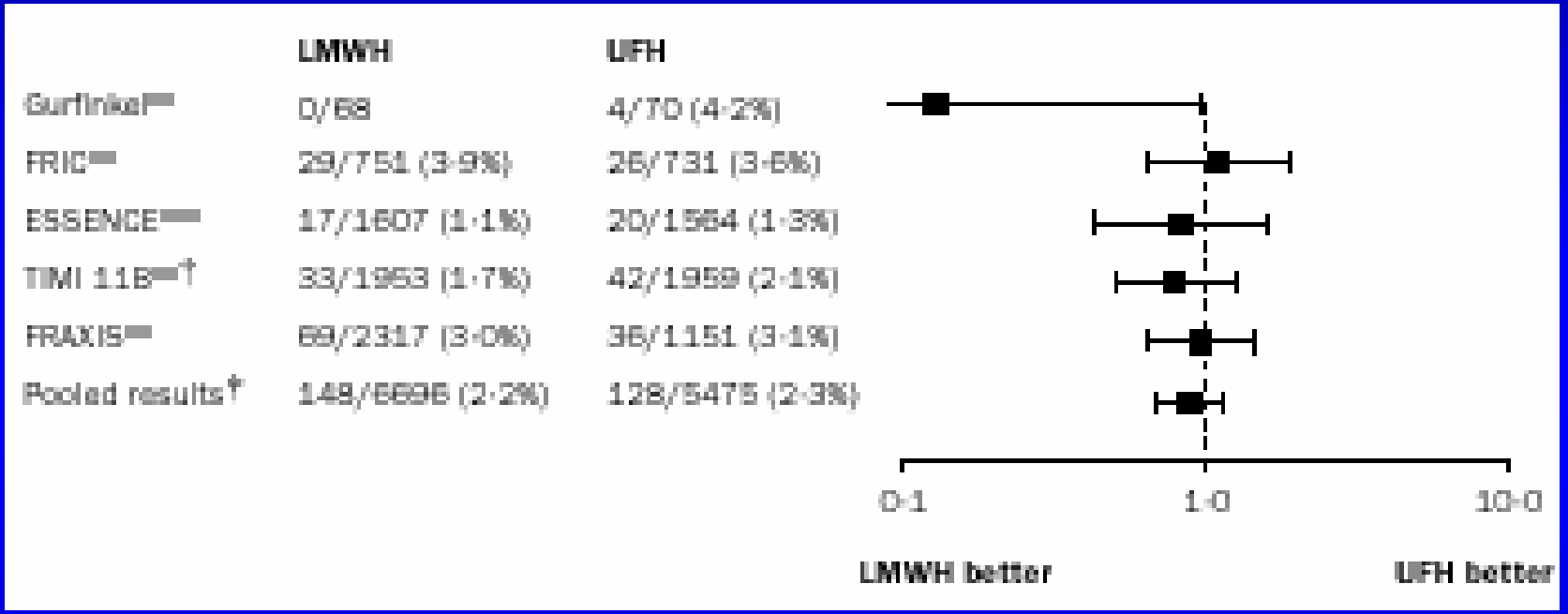


SCA senza ST sopraslivellato

Eparina non frazionata o a basso peso molecolare?

Metanalisi delle LWMH nelle SCA

(17.157 pz)



“There is no convincing difference in efficacy between LMWH and unfractionated heparin”

Yusuf et al, Lancet 2000

SCA senza ST sopraslivellato

Inibitori GP IIb/IIIa

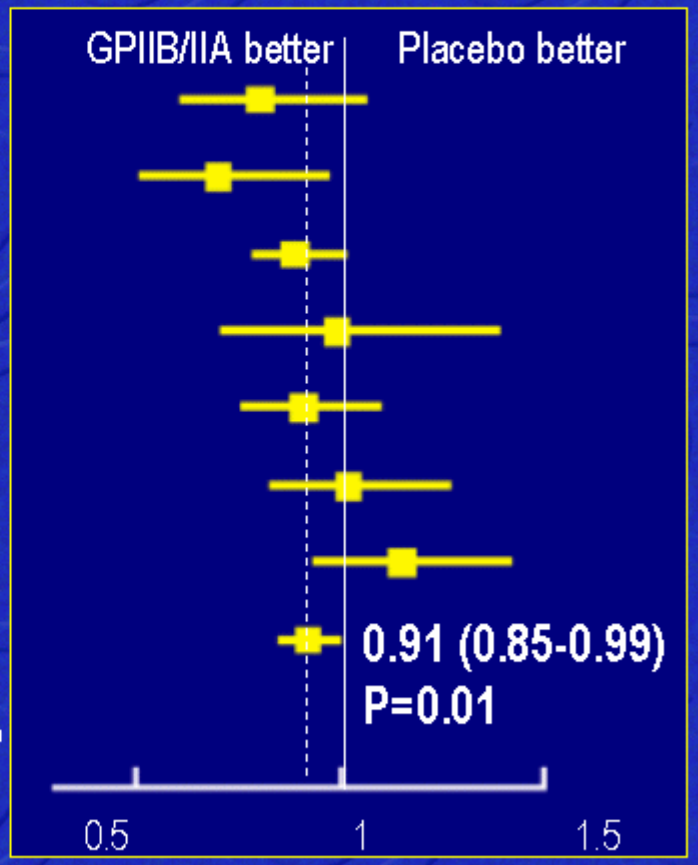
Inibitori IIb/IIIa nelle SCA

Seven Trials comparing GPIIb/IIIa vs Placebo in ACS

Both groups received Heparin +ASA

31,402 patients

	Death and MI at 30-day FU	
	Drug	Placebo
PRISM	5.8%	7.1%
PRISM-PLUS	8.7%	11.9%
PURSUIT	14.2%	15.7%
PARAGON A	11.6%	11.7%
PARAGON B	10.6%	11.5%
GUSTO IV 24h 8.2%	8.2%	8%
GUSTO IV 48h 9.1%	9.1%	8%
Total	10.3%	11.9%
Major bleedings	2.5%	1.4% (0.001)
ICH	0.08%	0.05% (NS)

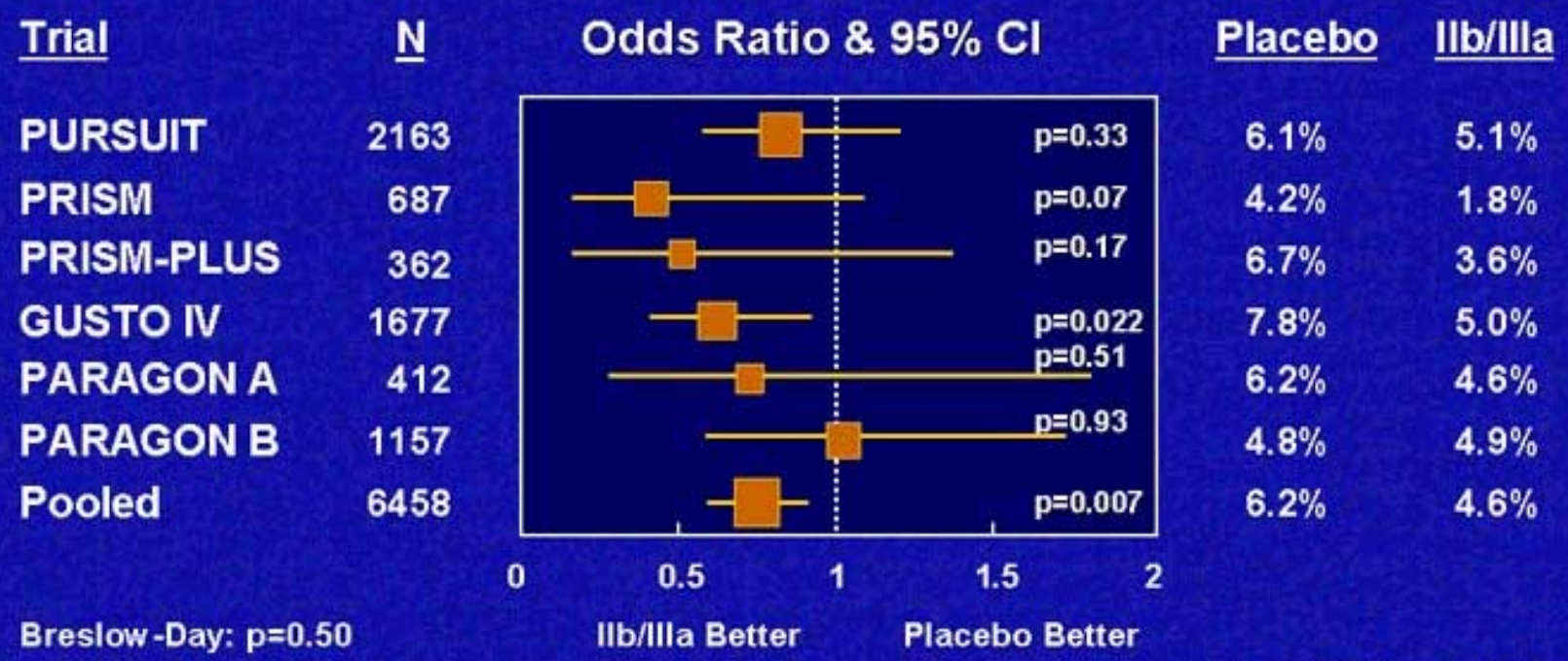


Boersma & al Lancet 2002

Inibitori IIb/IIIa nei pz diabetici

GP IIb/IIIa Inhibitors Reduce Mortality in Diabetic Patients with non-ST Segment Elevation Acute Coronary Syndromes

30-Day Mortality Diabetic Patients



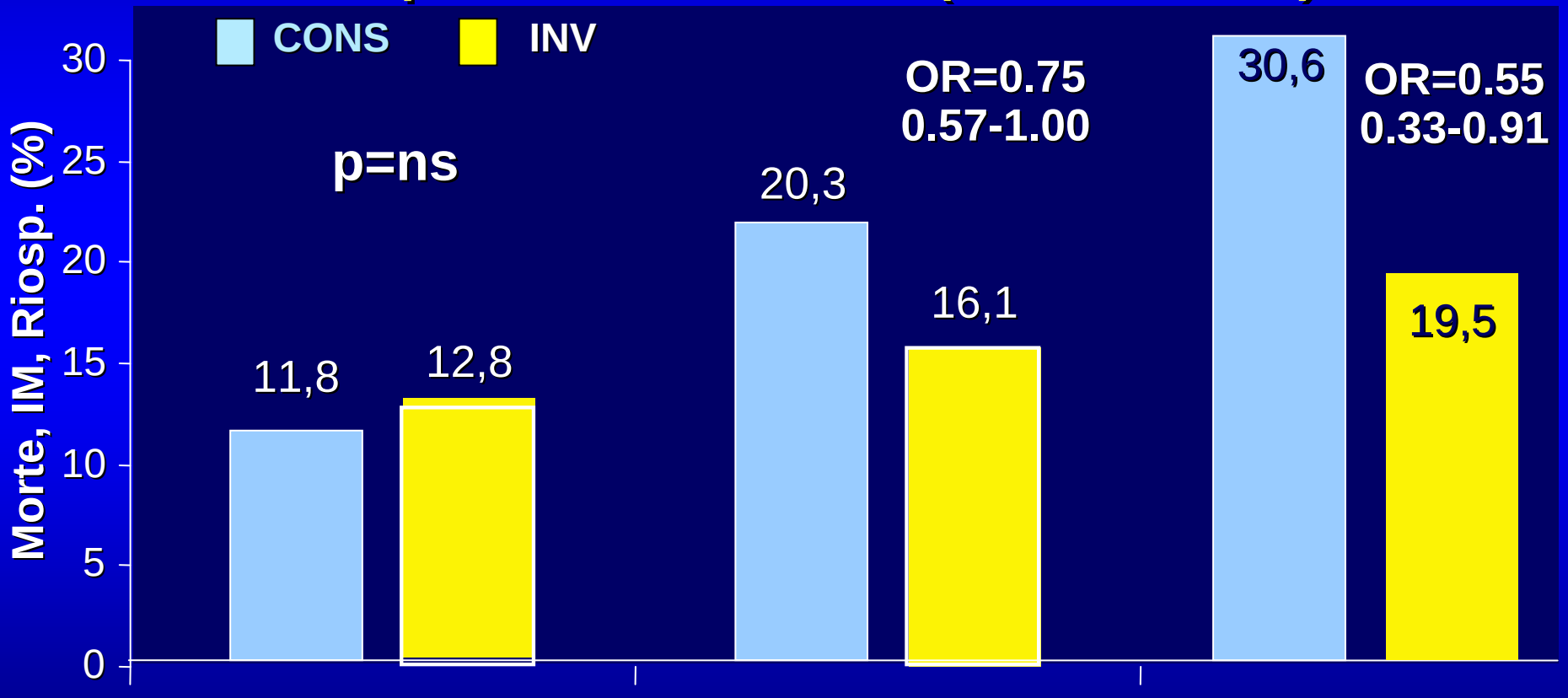
Roffi. Circulation 2001;104:2767

SCA senza ST sopraslivellato

Strategia invasiva o conservativa?

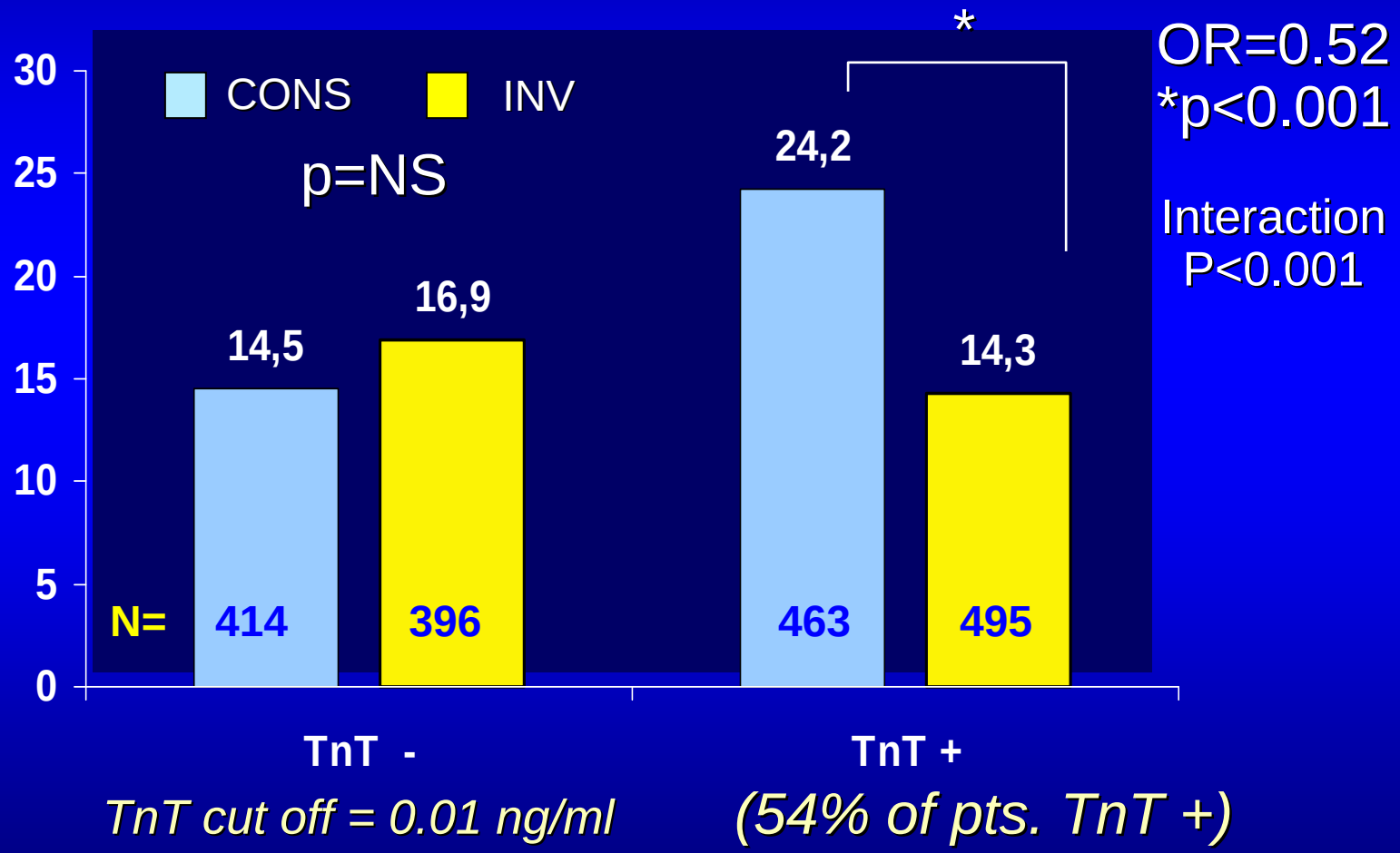
Strategia invasiva per pz. ad alto rischio

Stratificazione del rischio: Endpoint a 6 Mesi (TACTICS)



Pazienti ad alto rischio (TACTICS): Primary Endpoint a 6 Mesi

morte, IM, riospedalizzazione per SCA

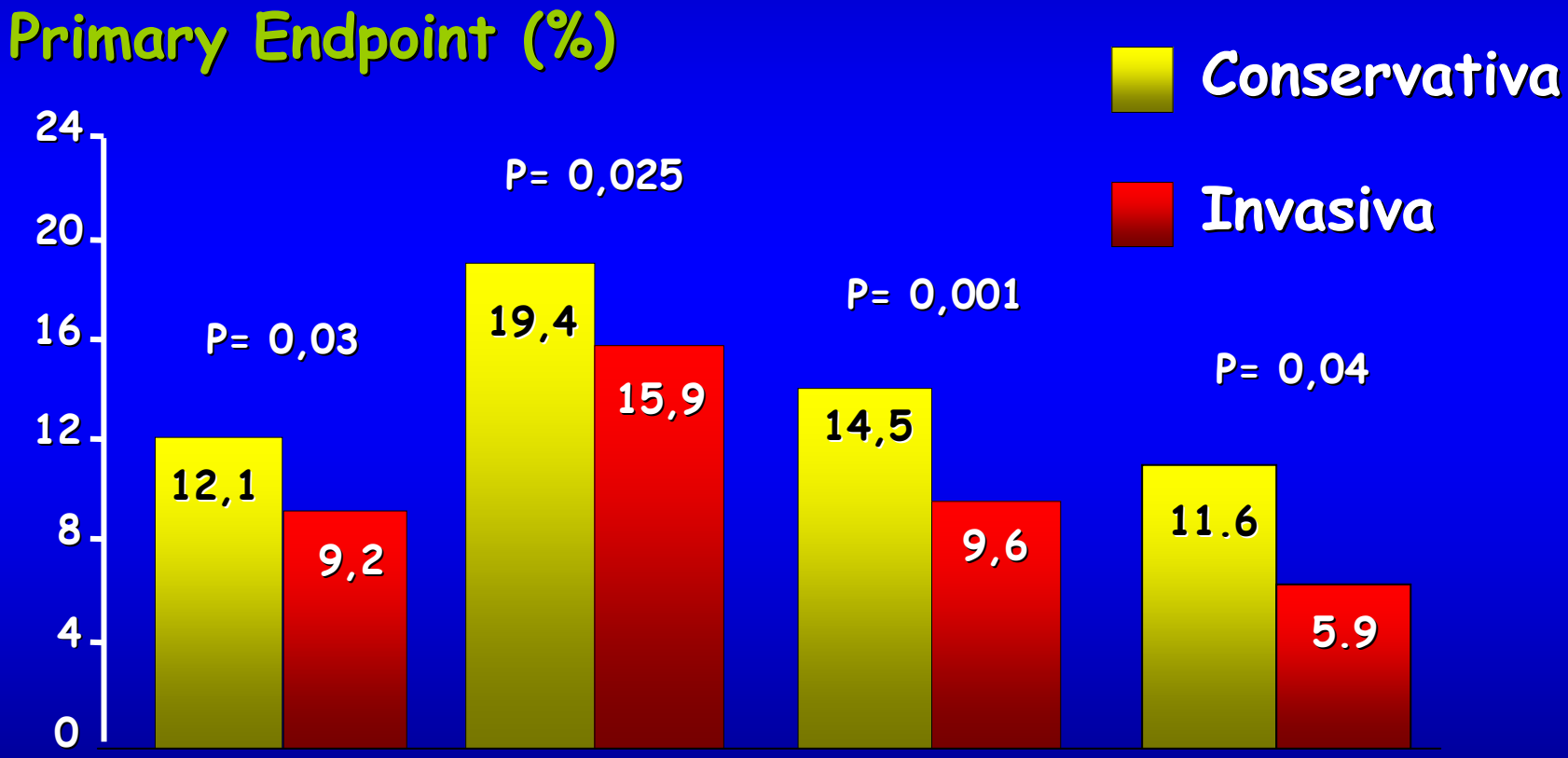


OR=0.52
*p<0.001

Interaction
P<0.001

Cannon, NEJM 2001

SCA “NSTE“ 2003: Evidenze per una Strategia Invasiva



rischio pz	alto	medio	medio	alto
t.m. alla PCI	5 gg	1 g	3 gg	2 h

SCA senza ST sopraslivellato

Linee Guida

European Heart Journal (2002) **23,** 1809–1840
doi:10.1053/euhj.2002.3385, available online at http://www.idealibrary.com on IDEAL®

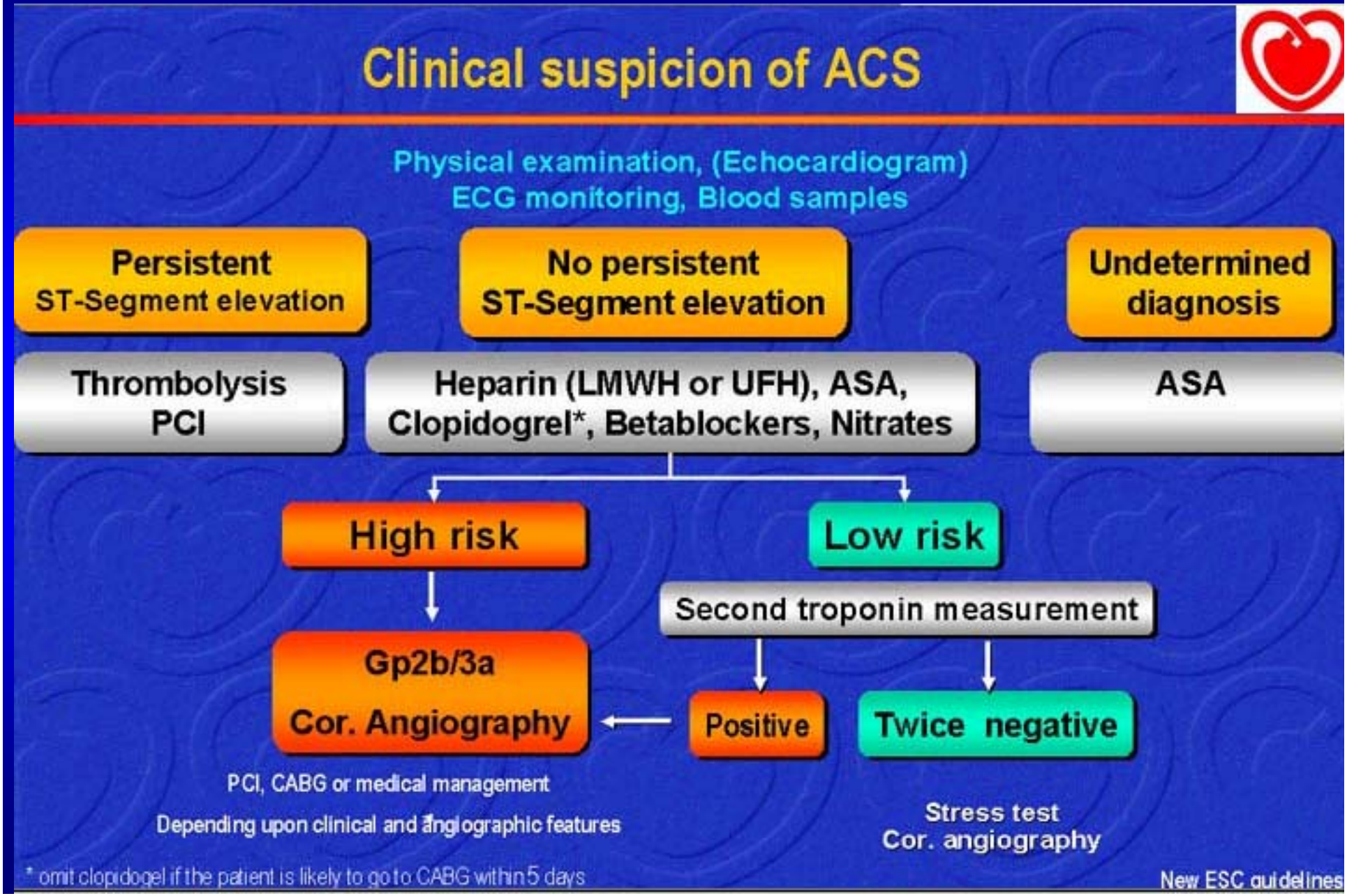
Task Force Report

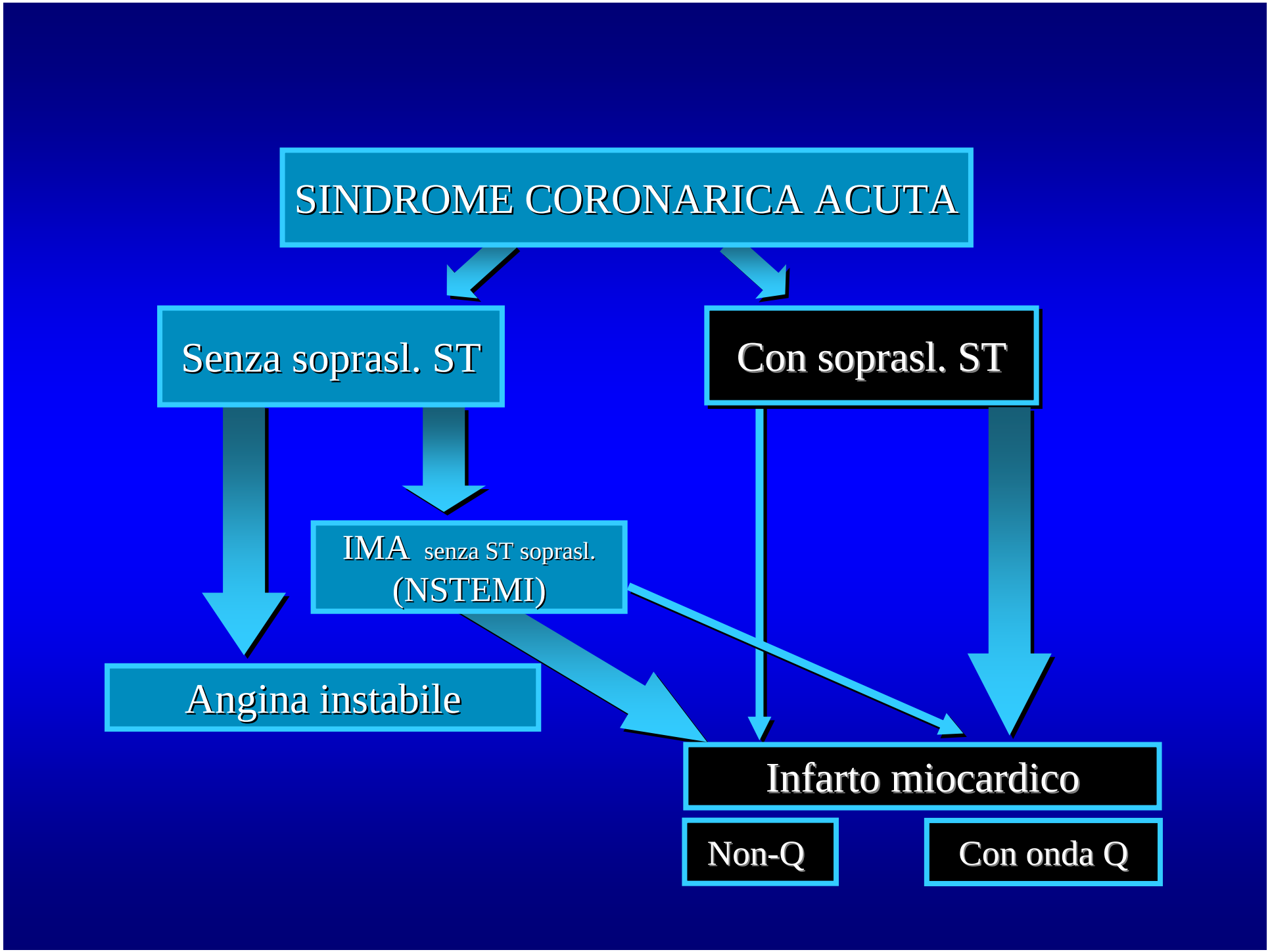
Management of acute coronary syndromes in patients presenting *without* persistent ST-segment elevation

The Task Force on the Management of Acute Coronary Syndromes of the European Society of Cardiology*

Michel E. Bertrand, Chair, Maarten L. Simoons, Keith A. A. Fox, Lars C. Wallentin, Christian W. Hamm, Eugene McFadden, Pim J. De Feyter, Giuseppe Specchia, Witold Ruzyllo

ACS ESC guidelines

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IMA senza ST soprasl.
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Angina instabile
Infarto miocardico
Non-Q
Con onda Q

SCA con ST sopraslivellato

Epidemiologia

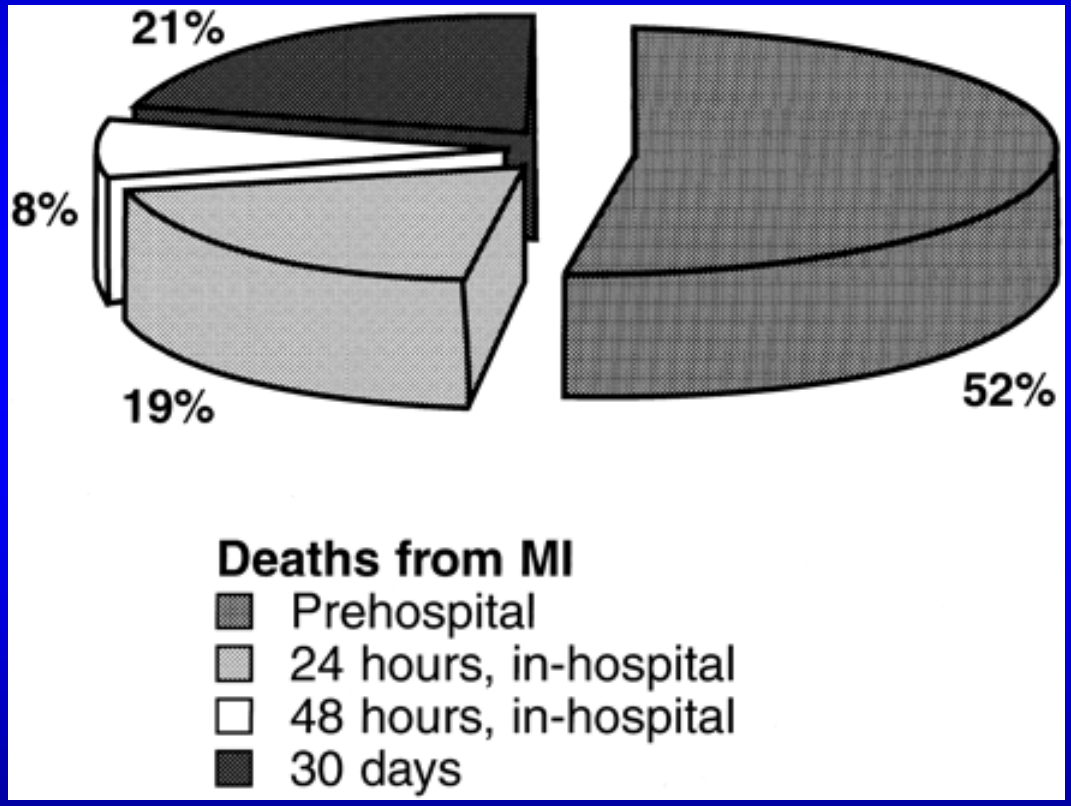
Incidenza: 1.1 milione persone/anno negli Stati Uniti; di questi:

- circa la metà muore entro 1 ora dall'esordio dei sintomi o prima di raggiungere l'ospedale;
- 24% degli uomini e il 42% delle donne muore entro 1 anno;
- 21% degli uomini e il 30% delle donne sviluppa CHF entro 6 anni.

L'1% di riduzione della mortalità salverebbe 3.400 vite/anno.

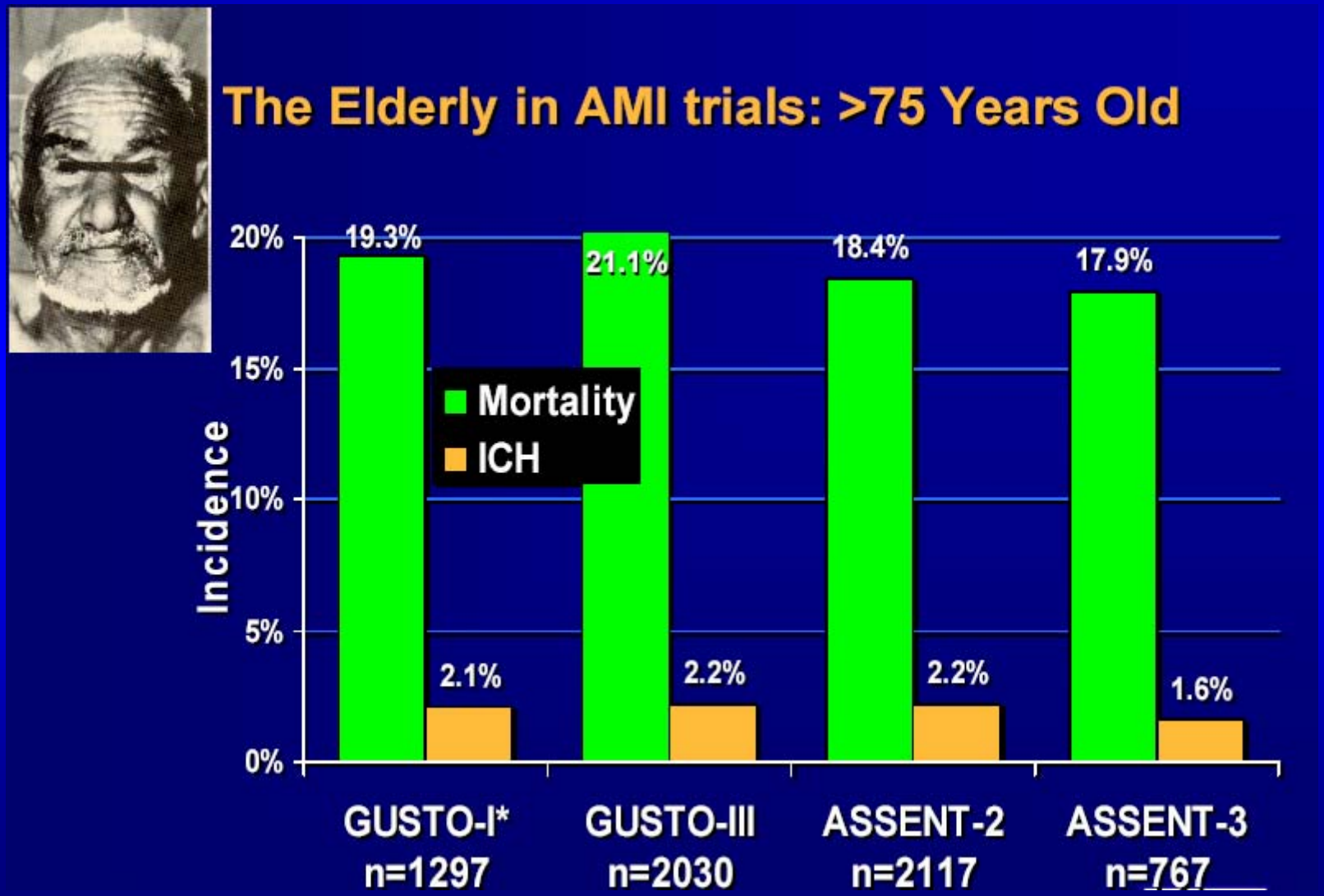
American Heart Association 2000

Distribuzione della mortalità in pazienti con IMA nei primi 30 gg



Circulation. 2000;102:I-172

Gli ultra75enni: una popolazione ad alto rischio nell'IMA



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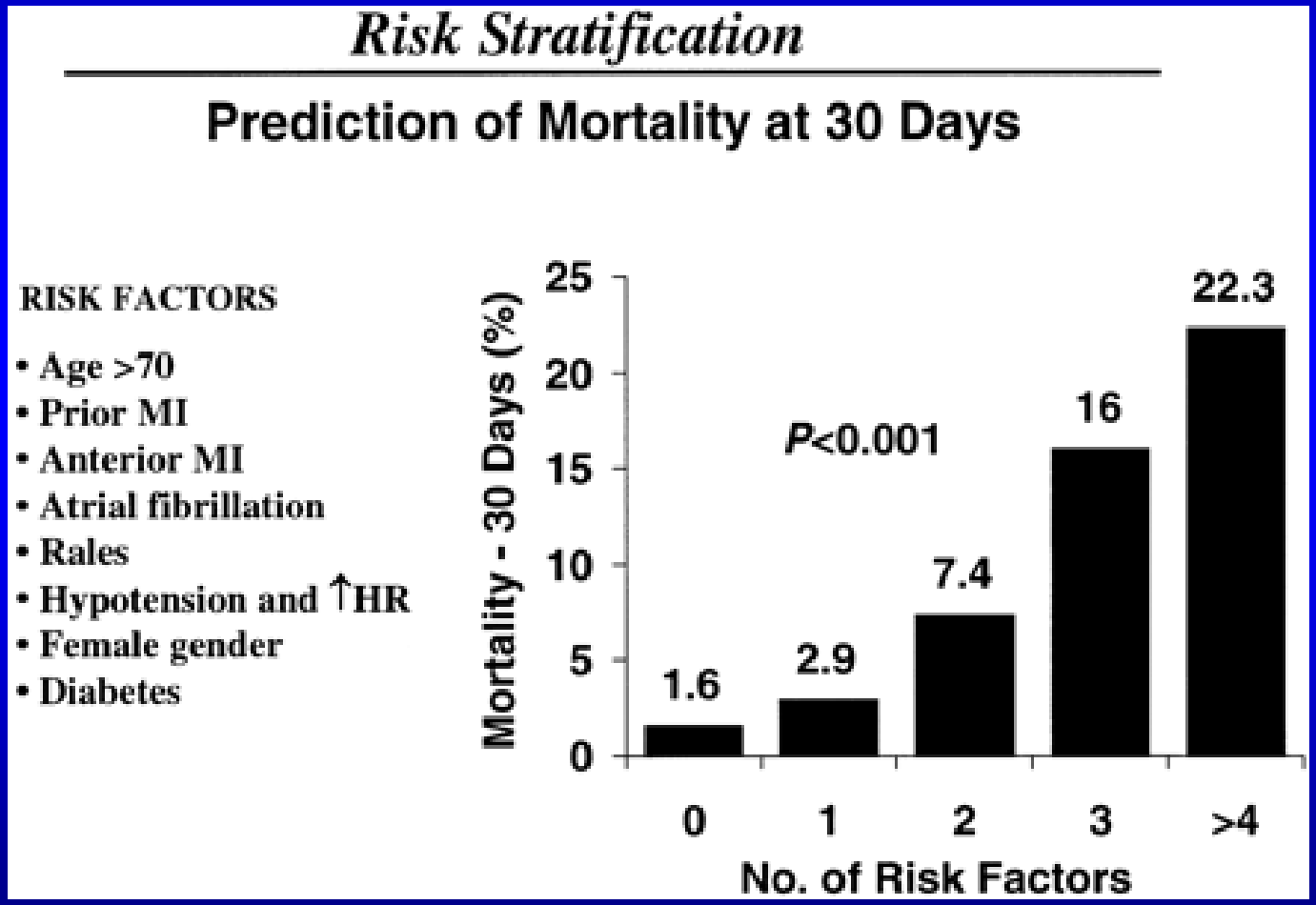
Stratificazione del rischio

Predittori di mortalità a 30 giorni in pazienti con IMA (indipendentemente dai valori di troponina)



J Am Coll Cardiol. 1999;33(suppl A):396A

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Terapia:
rapida riperfusione

Vantaggi della riperfusione precoce

RIPERFUSIONE PRECOCE

↓

SALVATAGGIO DEL MIOCARDIO

↓

PRESERVAZIONE DELLA FUNZIONE VS

↓

AUMENTO SOPRAVVIVENZA

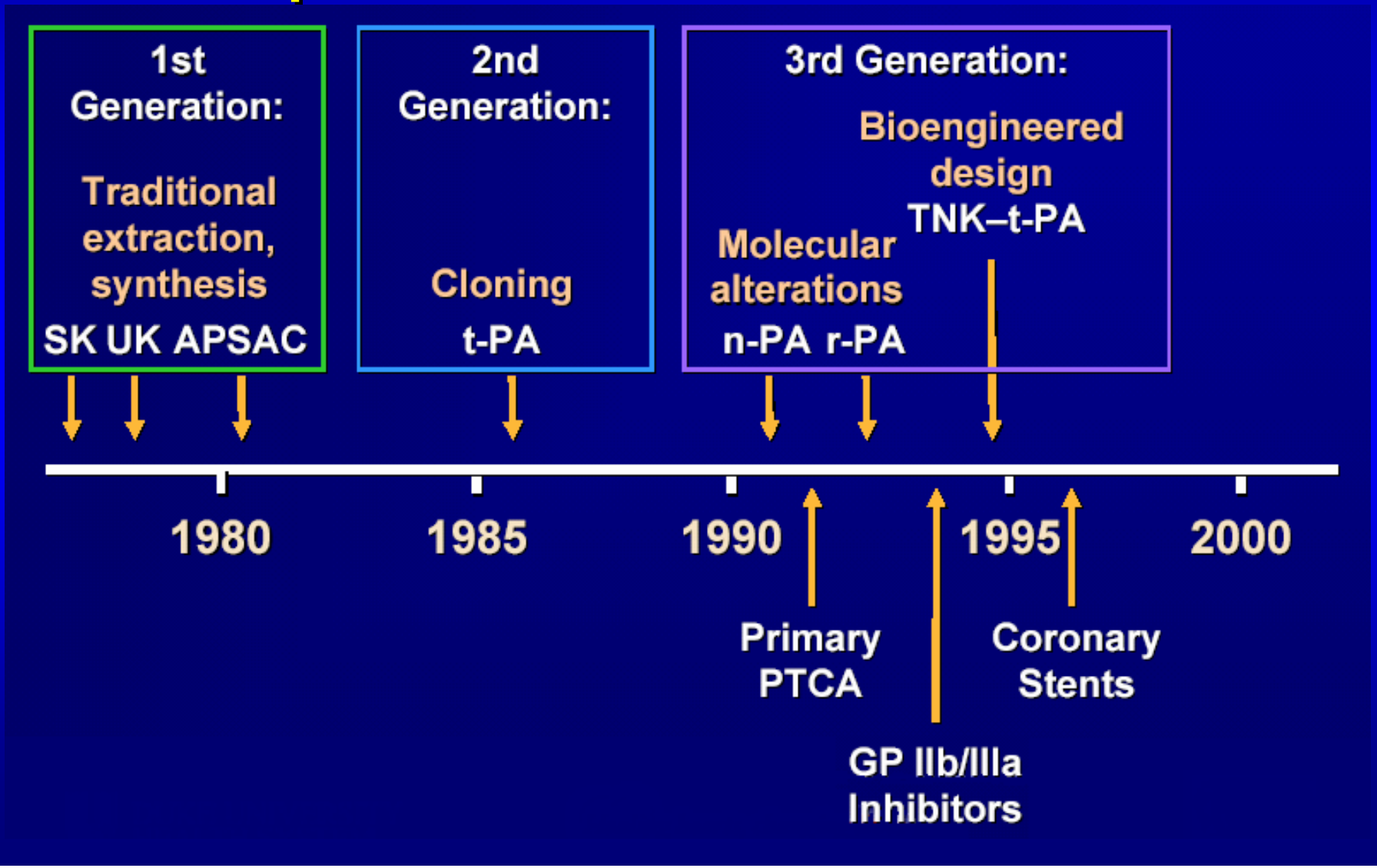
Terapia riperfusiva

Fibrinolisi: - streptochinasi - reteplase (rPA)
- urochinasi - lanoteplase (nPA)
- alteplase (rtPA) - tenecteplase (TNK)

PTCA: - primaria (di prima intenzione)
- rescue (dopo fibrinolisi inefficace)
- facilitata (dopo pretrattamento con mezza dose di fibrinolitico e/o inib. GP IIb/IIIa)

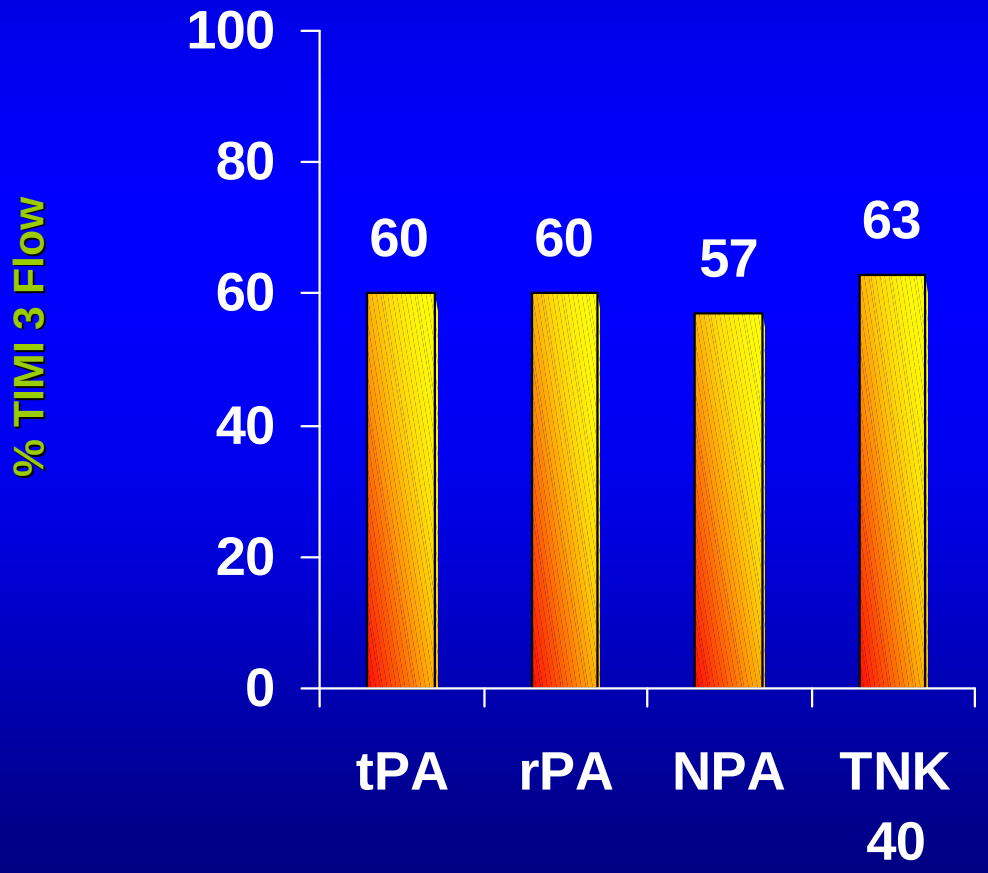
BPAC d'emergenza: - stenosi TC (?)
- PTCA inefficace o complicata
- complicanze meccaniche

L’evoluzione della terapia per la riperfusione coronarica

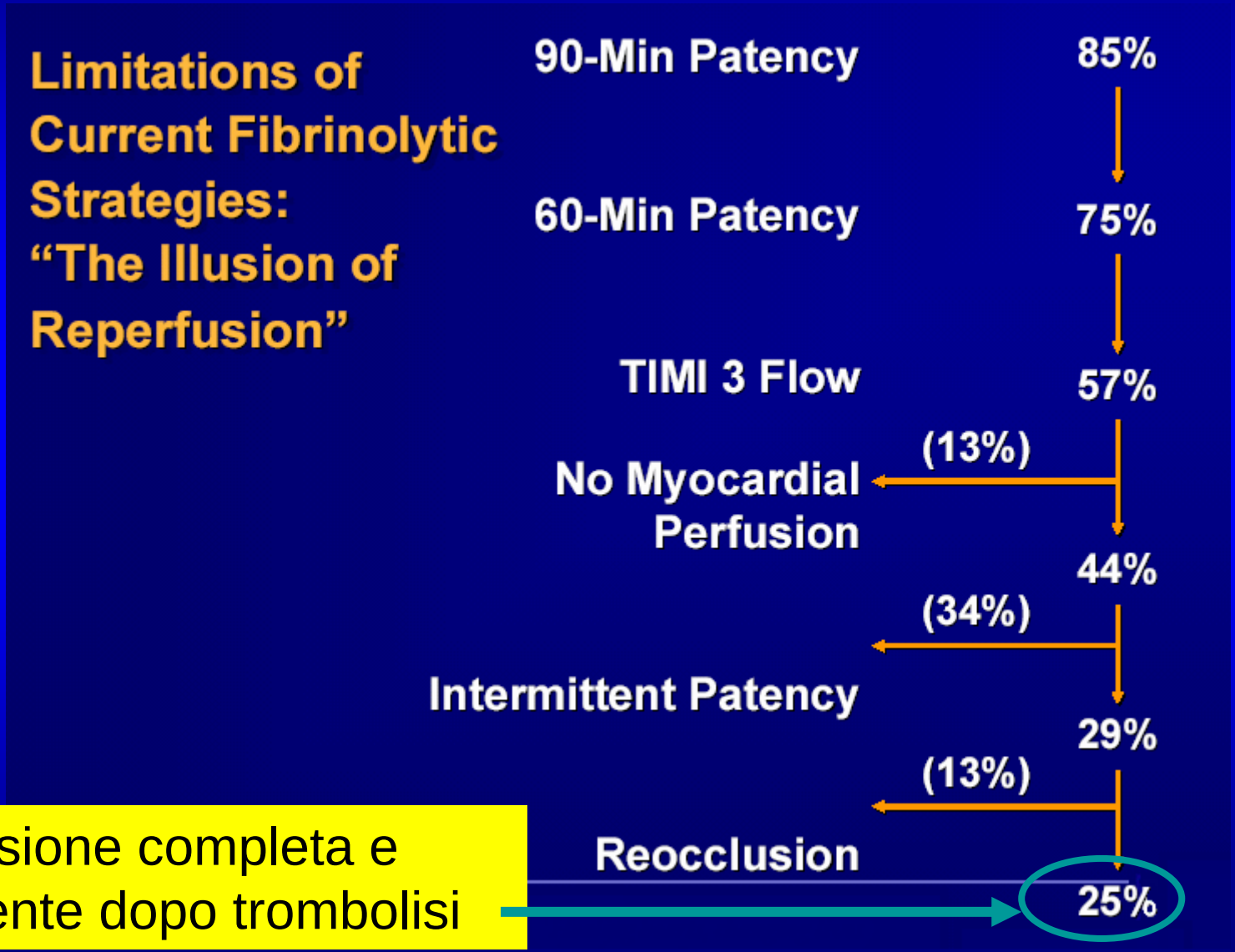


La trombolisi ha i suoi limiti

Nessun trombolitico riesce a superare il muro del 60% di flusso TIMI 3 a 90 minuti



La trombolisi ha i suoi limiti

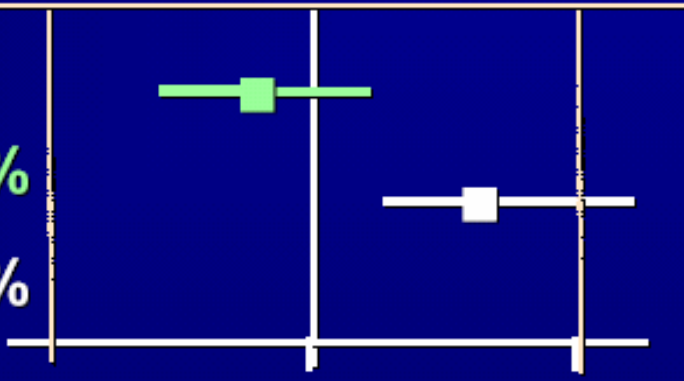


Riperfusione completa e persistente dopo trombolisi

Gli ultra75enni: la trombolisi è meno efficace

Cooperative Cardiovascular Project Database

Age	n	30-d death	RRR	p
65-75 y	5,113	8%	12%*	NS
76-86 y	2,634	17%	+38%	.003

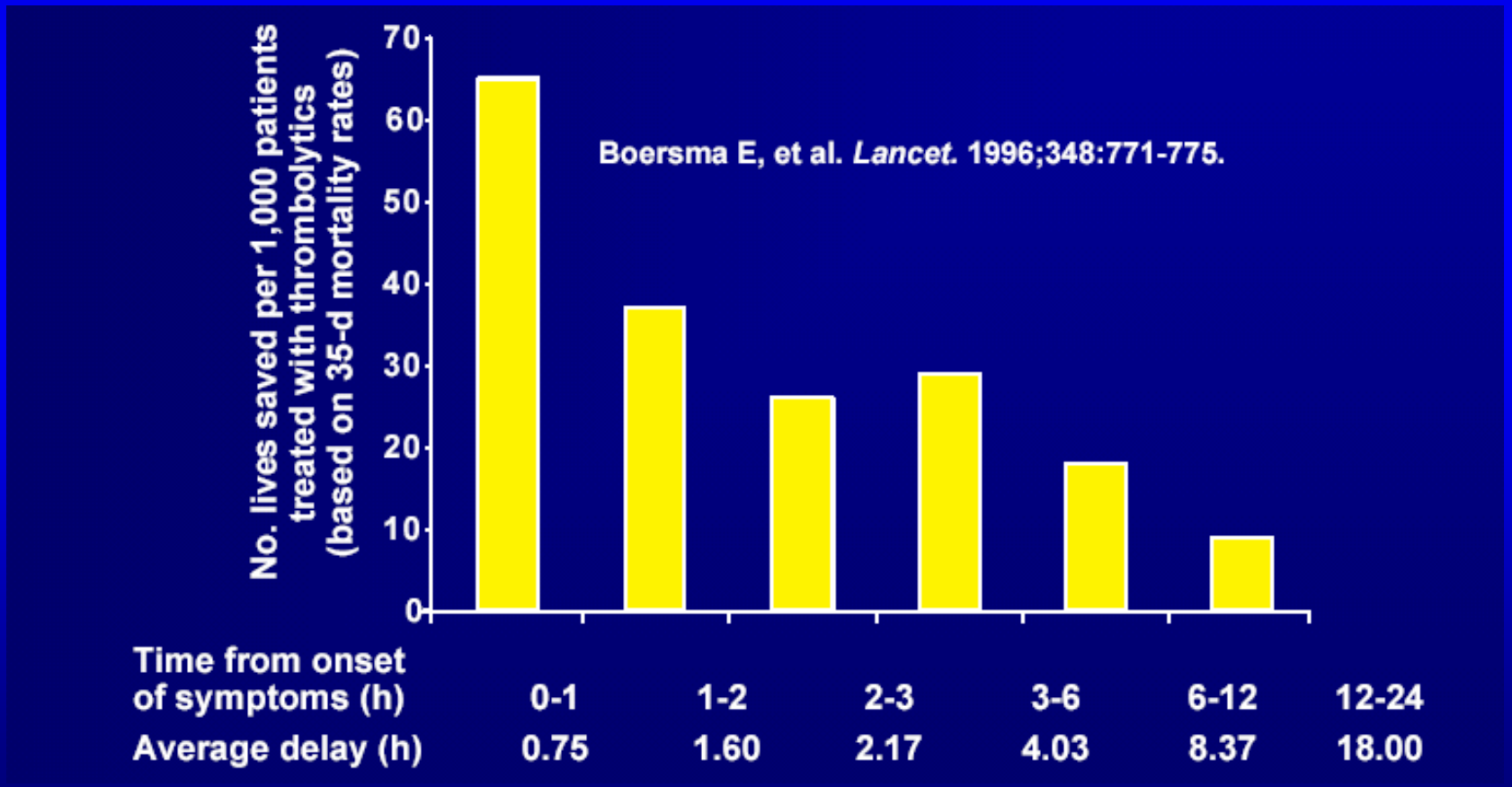


*no benefit for first 4 days

-- *Thiemann, Circulation, 2000*

Trombolisi: “time is muscle” (and survival)

Tempo precoronarico e mortalità



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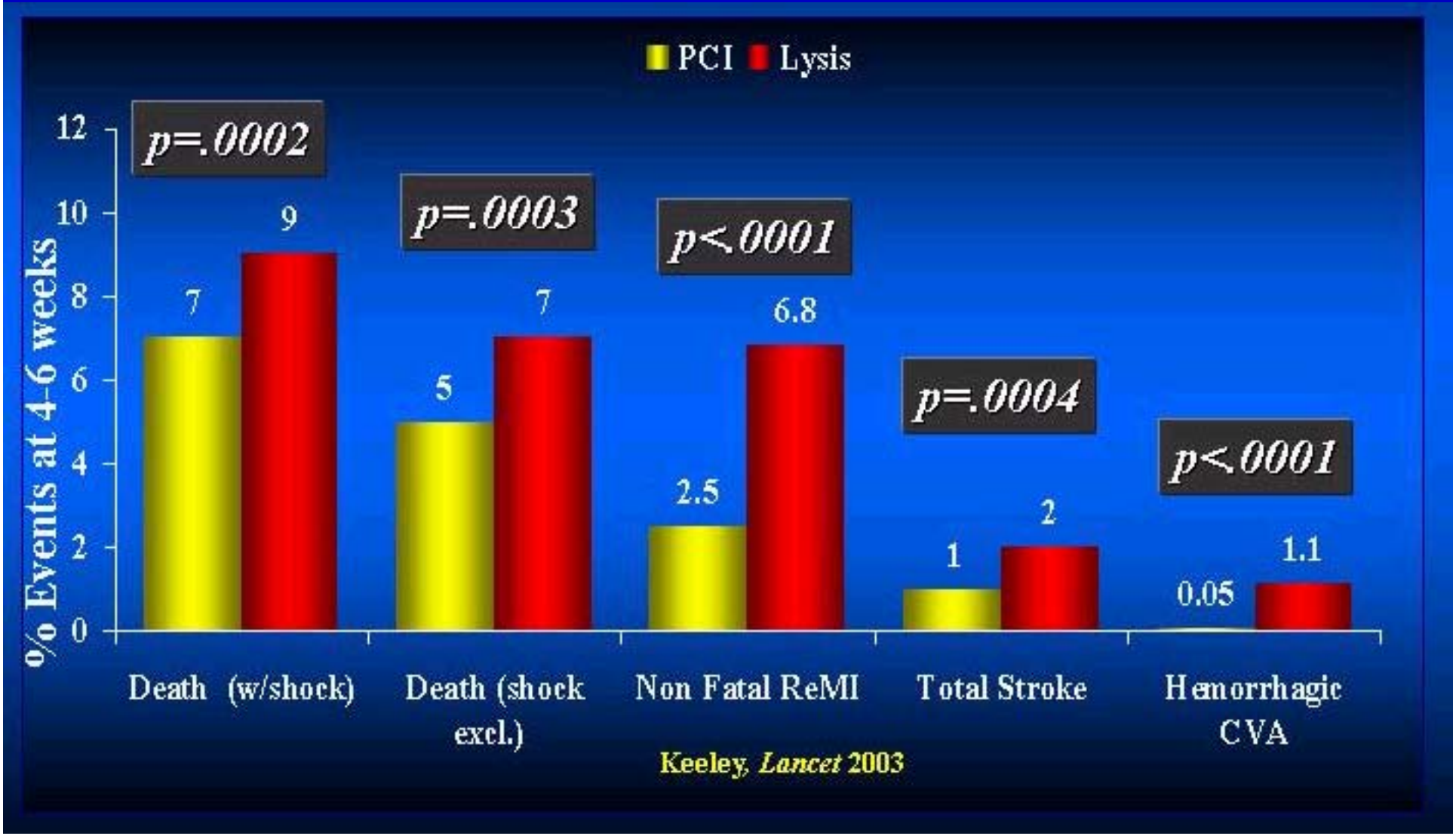
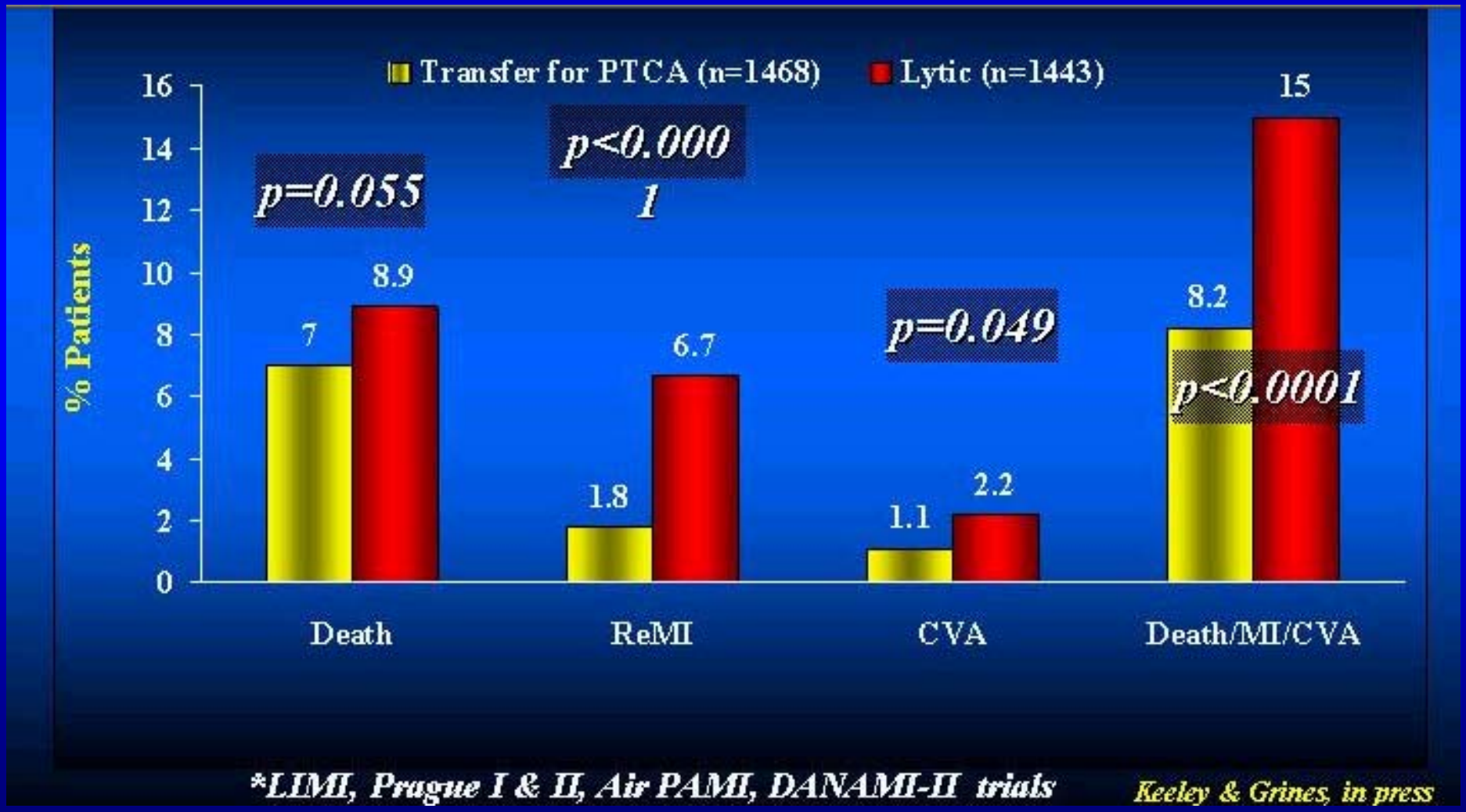
Fibrinolisi o angioplastica?

PCI vs Lysis: metanalisi di 23 trial randomizzati (7739 pz)



Trasferimento per pPTCA vs lisi "on-site" (dati ricavati da 5 RCT*)



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Linee Guida

2003 ESC Guidelines for STEMI

Task Force Report

Management of acute myocardial infarction in patients presenting with ST-segment elevation

The Task Force on the Management of Acute Myocardial Infarction of the European Society of Cardiology,

Frans Van de Werf, Chair, Diego Ardissino, Amadeo Betriu, Dennis V. Cokkinos, Erling Falk, Keith A.A. Fox, Desmond Julian, Maria Lengyel, Franz-Josef Neumann, Witold Ruzyllo, Christian Thygesen, S. Richard Underwood, Alec Vahanian, Freek W.A. Verheugt, William Wijns

Received 6 August 2002; accepted 7 August 2002

2003 Updated ESC Guidelines

PCI should be considered the treatment of choice

when it can be performed by an experienced team within 90min from the first medical contact