III CONGRESSO NAZIONALE DI

ECOCARDIO

CHIRURGIA

Vitalità miocardica con RM: il metodo, le indicazioni, l'utilizzo nella pratica clinica 2009

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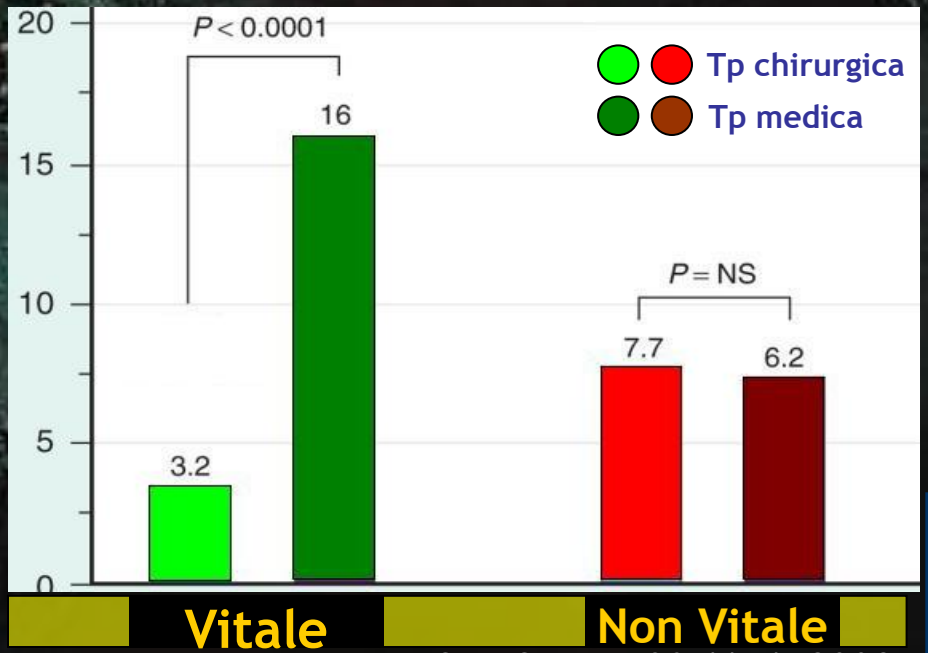
Niguarda Ca' Granda - Milano

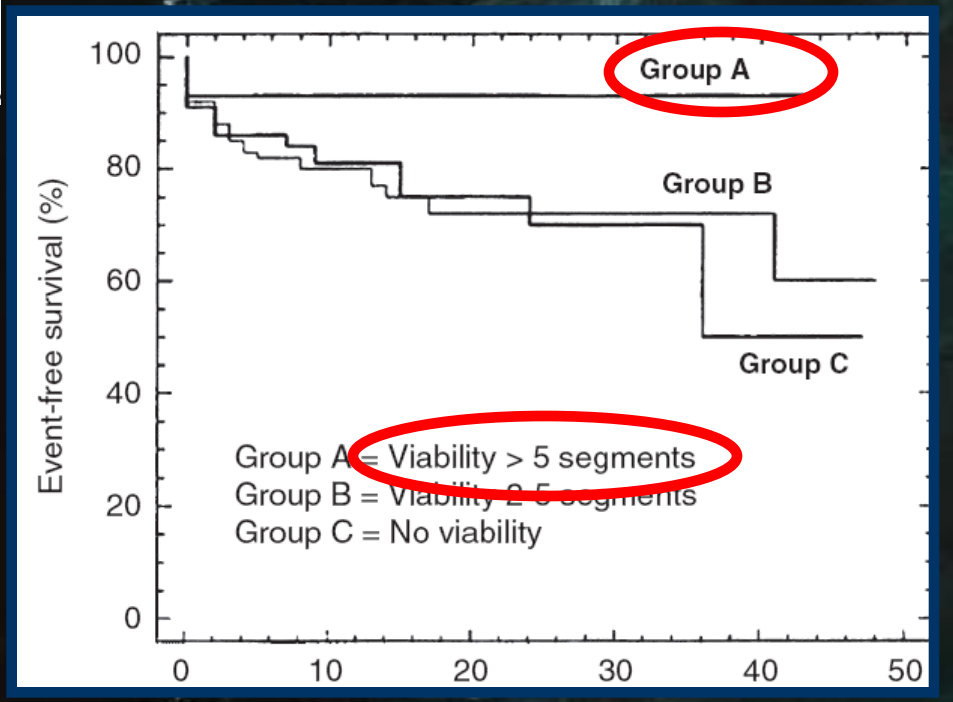
MIOCARDIO VITALE: IMPATTO CLINICO



Allman K et al. - J Am Coll Cardiol 39:1151, 2002

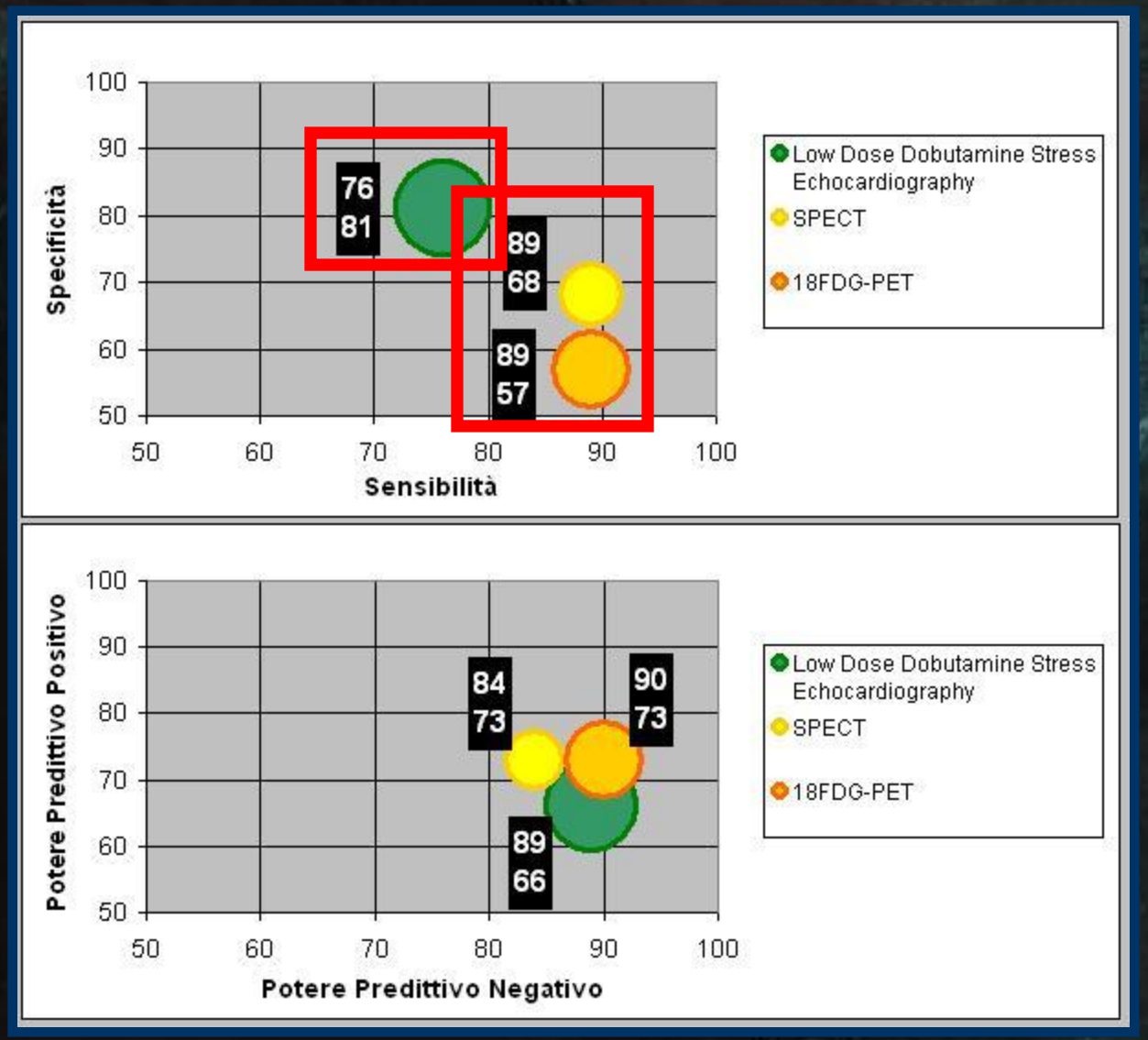
STRATEGIA TERAPEUTICA

PROGNOSI



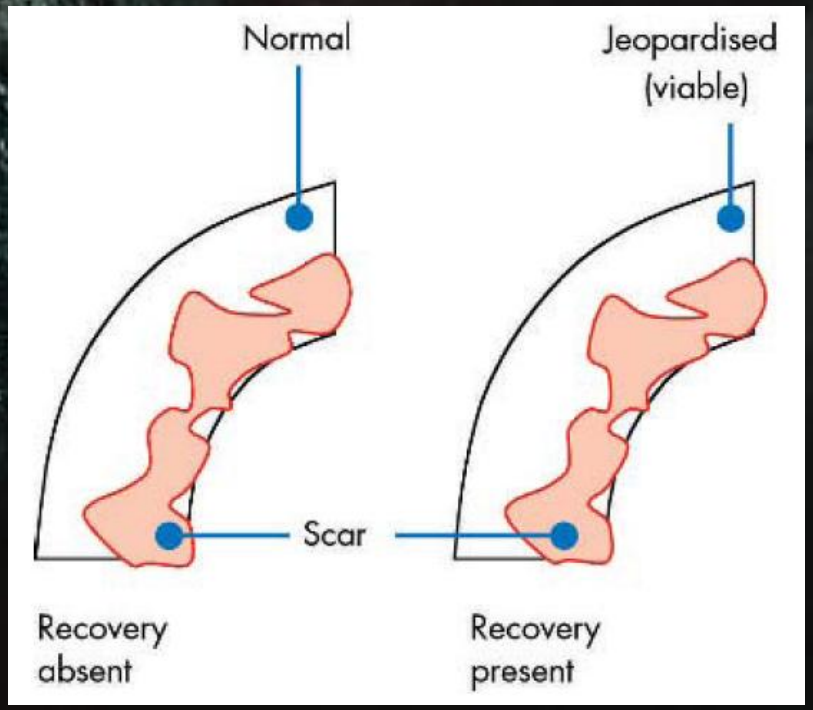
Picano E et al. – Circulation, 1998; 98: 1078-1084

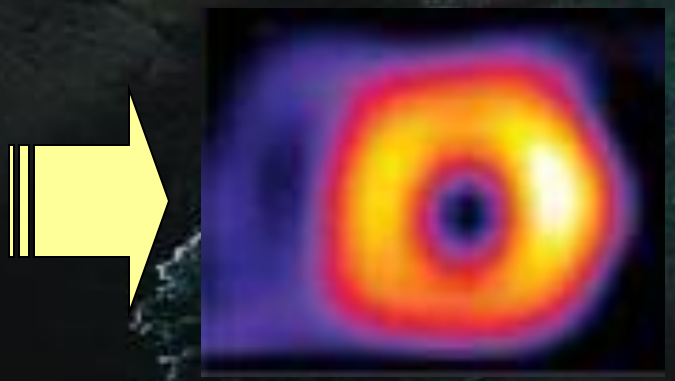
Performance delle differenti metodiche



Adatt. da: P. G. Camici et al – Circulation, 2008; 117: 103-114.

SPECT/PET: FALSI POSITIVI



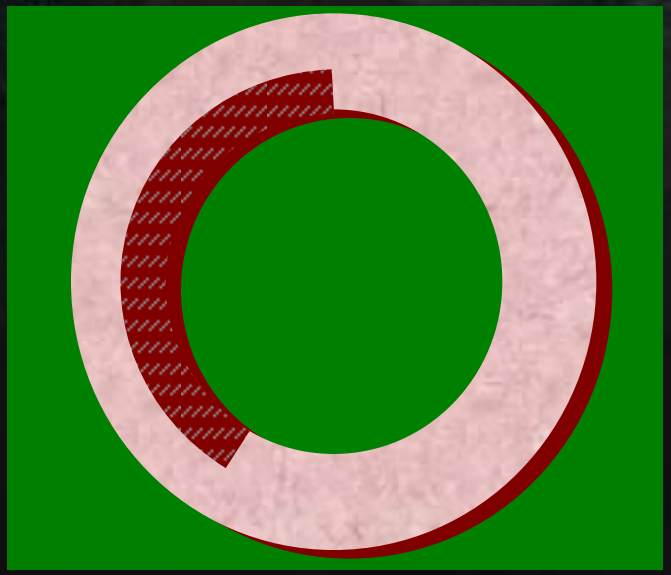


Kaandorp TAM et al. – Heart, 2005; 91: 1359-1365.

Test + per vitalità anche con quote di miocardio integro residuo < 50% (istol.)

Baumgartner H et al. – JACC, 1998; 32:1701–1708

ECO-DOB: FALSI NEGATIVI



- Ischemia a bassa dose di dobutamina

  La Canna G et al. – JACC, 1994; 23:617–626

- Terapia β-bloccante

  Zaglavara T et al. – Heart, 2002; 87:329-335

Test + per vitalità con almeno il 50% di miocardio integro residuo (istol.)

Baumgartner H et al. – JACC, 1998; 32:1701–1708

RMC NELLO STUDIO DELLA VITALITA' MIOCARDICA:

IL METODO

MODALITA’

- RM-dobutamina a bassa dose
- Delayed-enhancement
- Spessore parietale

RMC – DOBUTAMINA A BASSA DOSE

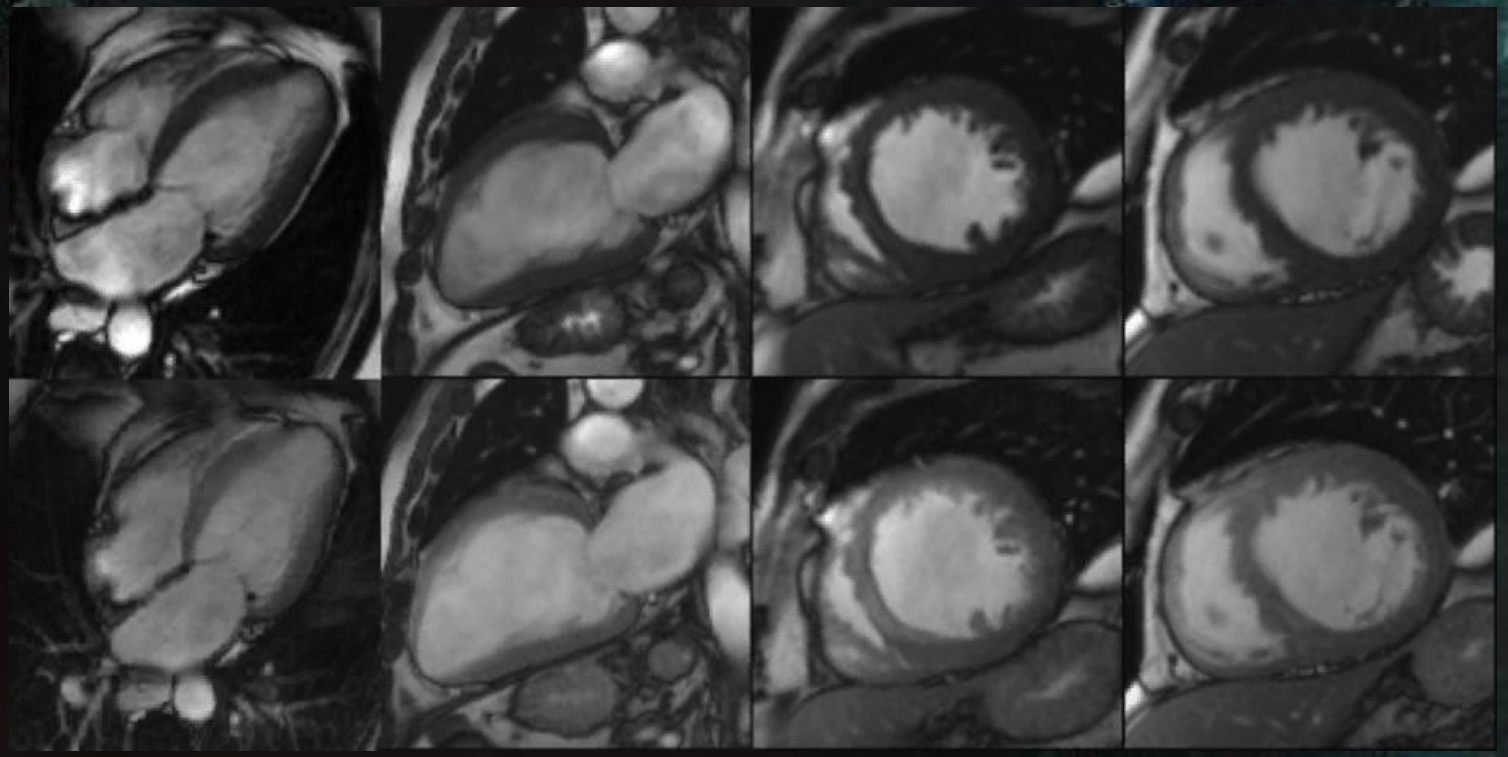
-Stessi presupposti teorici dell'eco-DBT

→Infusione 5-15 mcg/Kg.min

-Acquisizioni Cine assi lunghi e assi corti

→Sequenze "bilanciate": alto R segnale/rumore, alta definizione spaziale

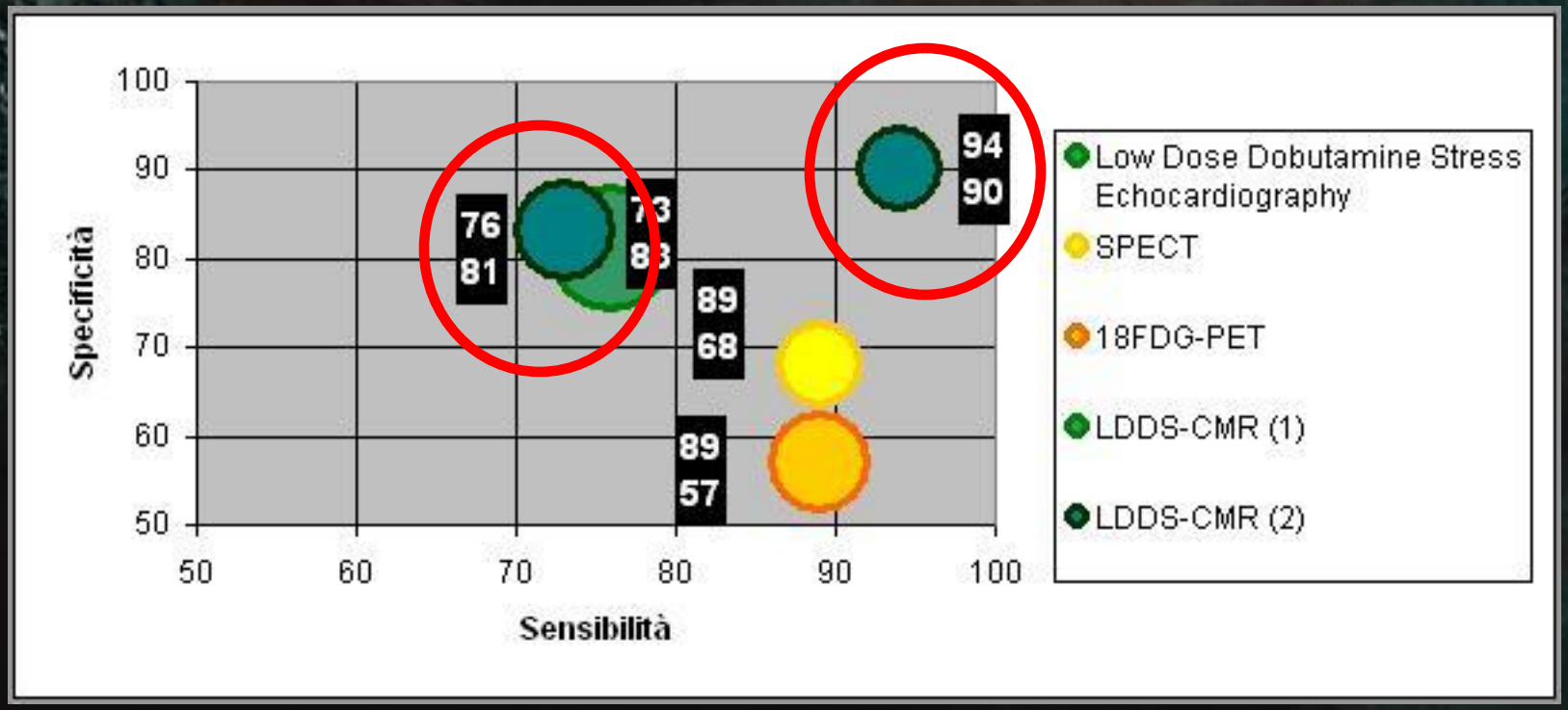
-Mezzo di contrasto non necessario



Basale

DBT

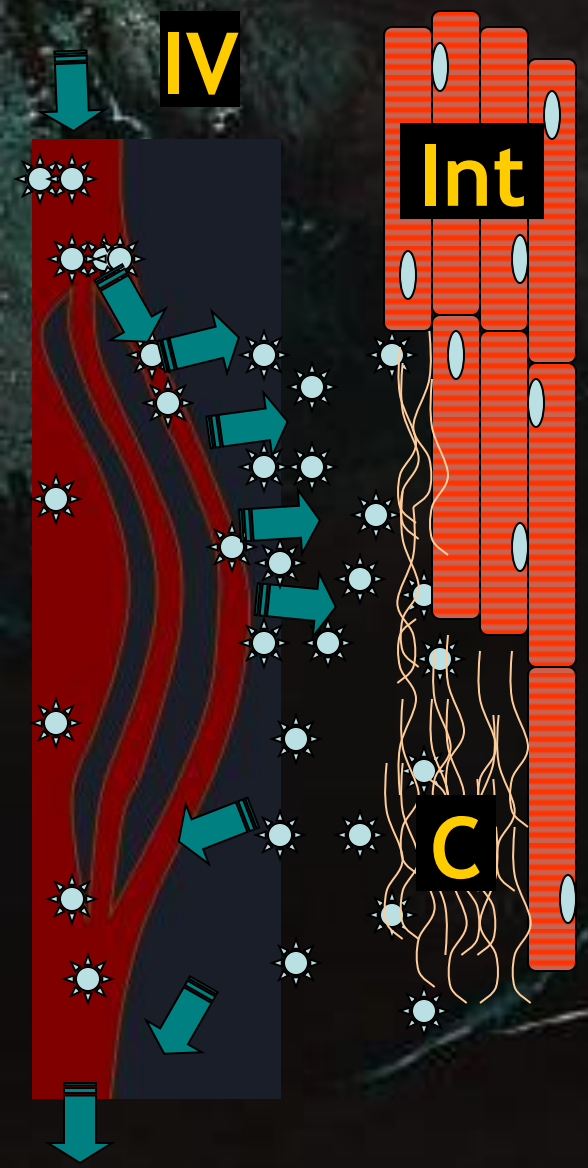
RM-Dobutamina: PERFORMANCE

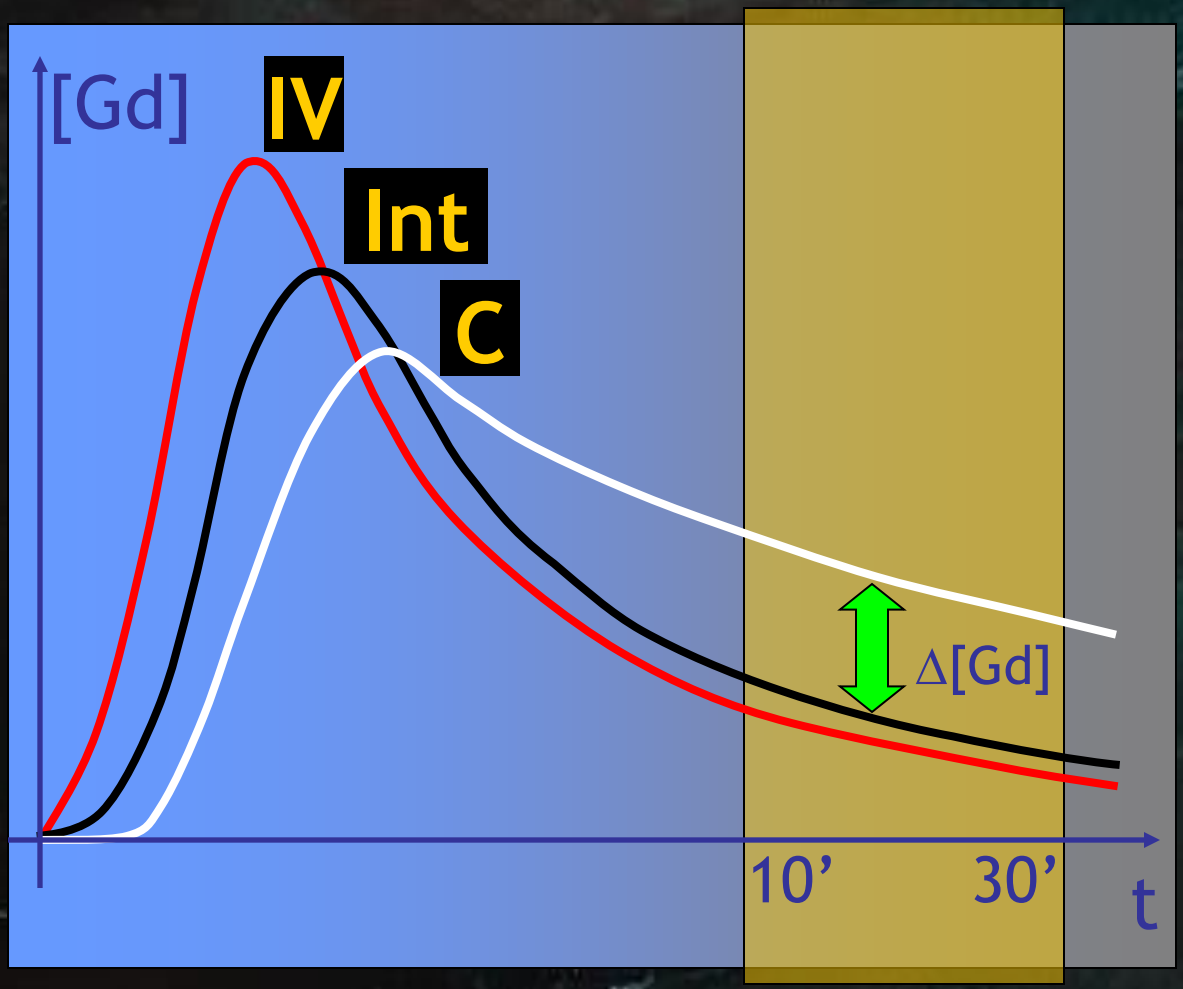


Adatt. da: Kaandorp TAM et al. – Heart, 2005; 91: 1359-1365.

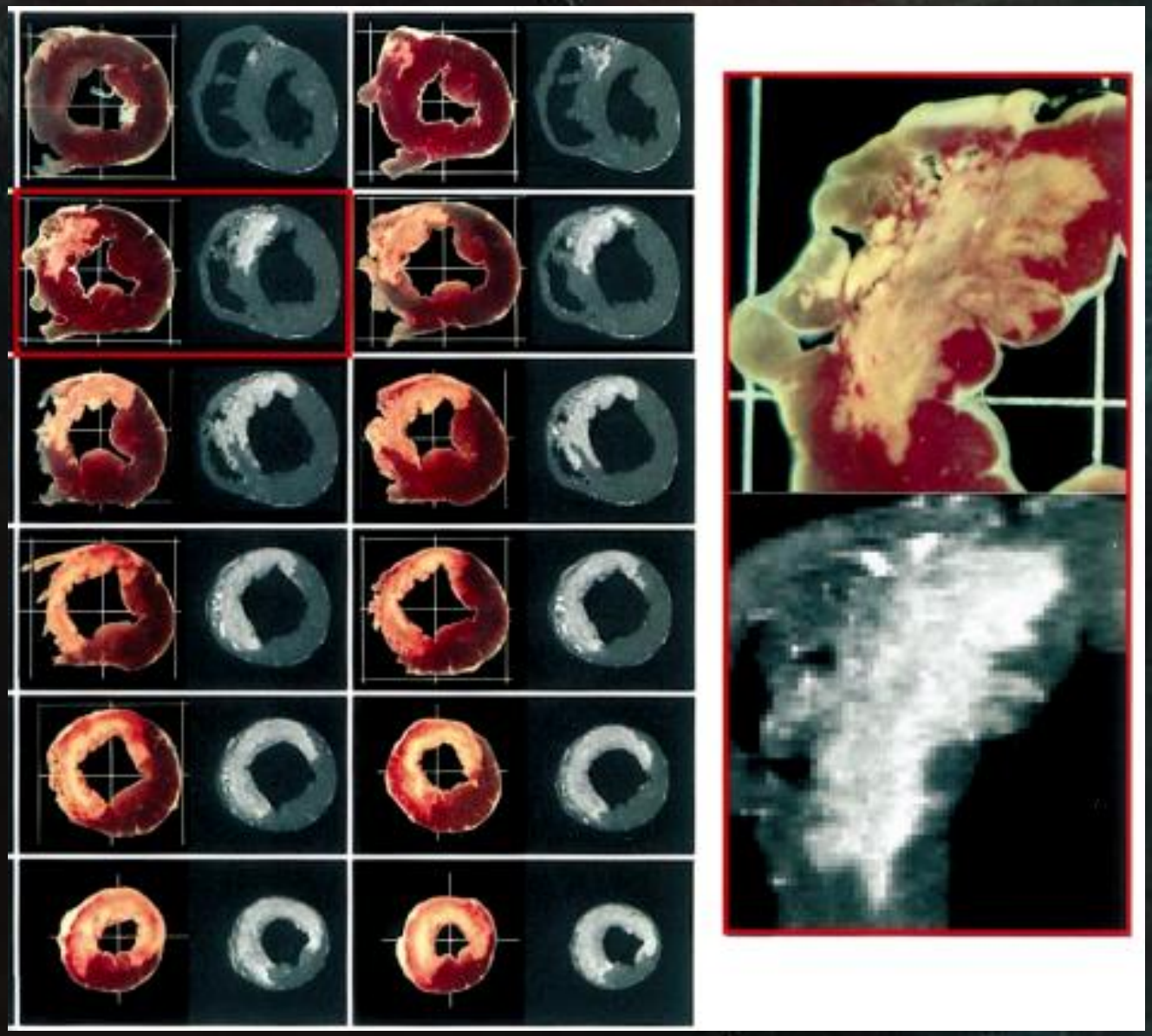
Adatt. da: P. G. Camici et al – Circulation, 2008; 117: 103-114.

Delayed-enhancement - Dinamica del gadolinio





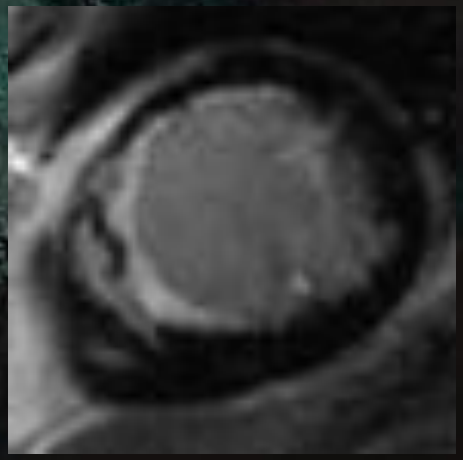
DELAYED ENHANCEMENT – CORRELAZIONI PATOLOGICHE

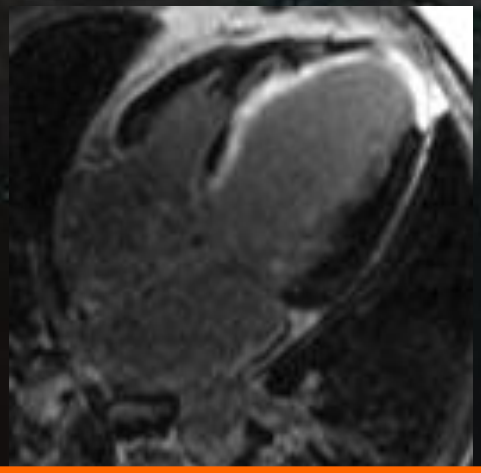


Kim R et al, Circulation 1999

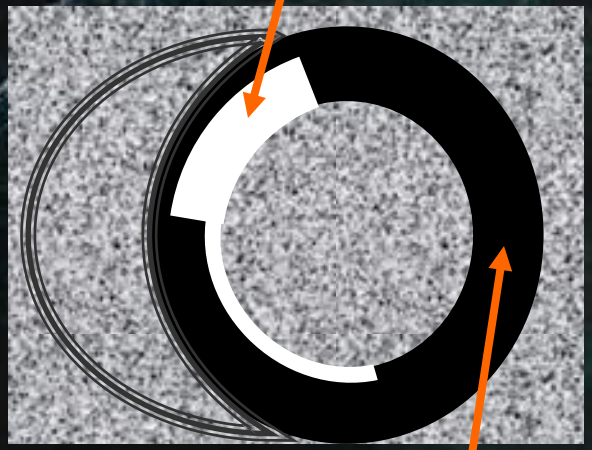
TECNICA DI ACQUISIZIONE: IMMAGINI T1-PESATE

Inversion-Recovery fast gradient-echo (TURBOFlash)"TI-adapted"



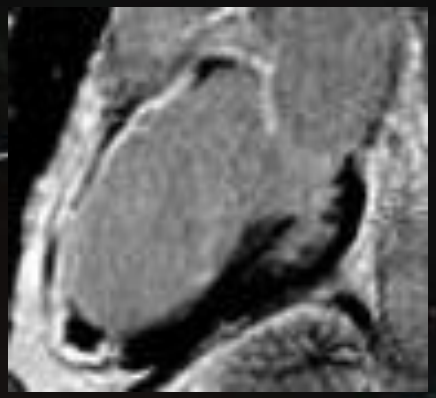


- "**WHITE** IS
- DEAD"



Phase-Sensitive Inversion-Recovery gradient-echo (PSIR)

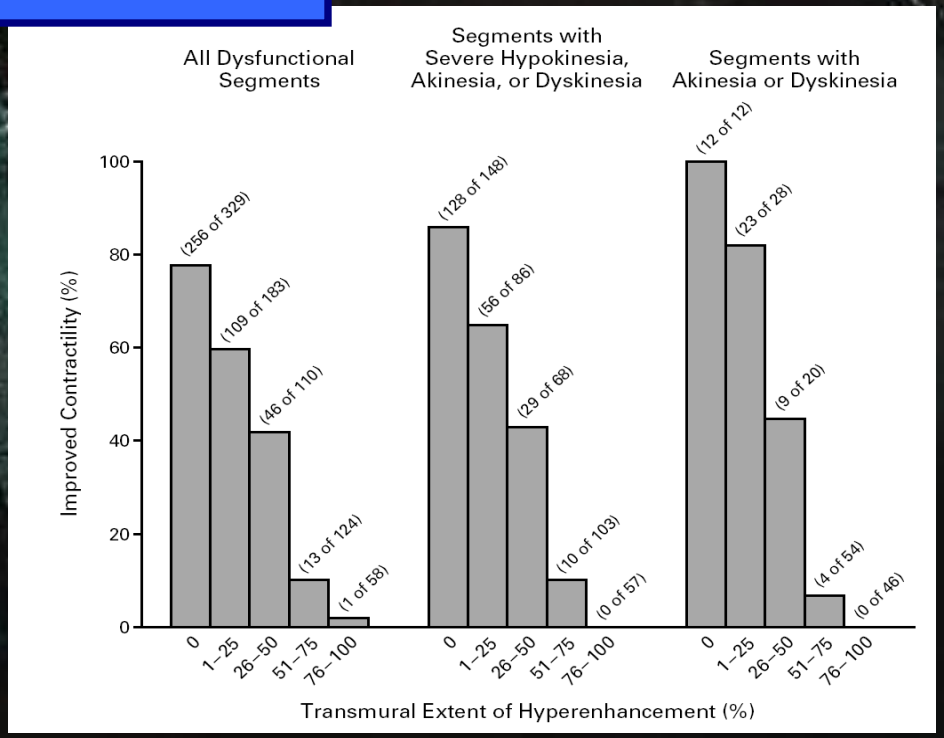
- Relativa indipendenza da TI
- Possibile "Fat Saturation"



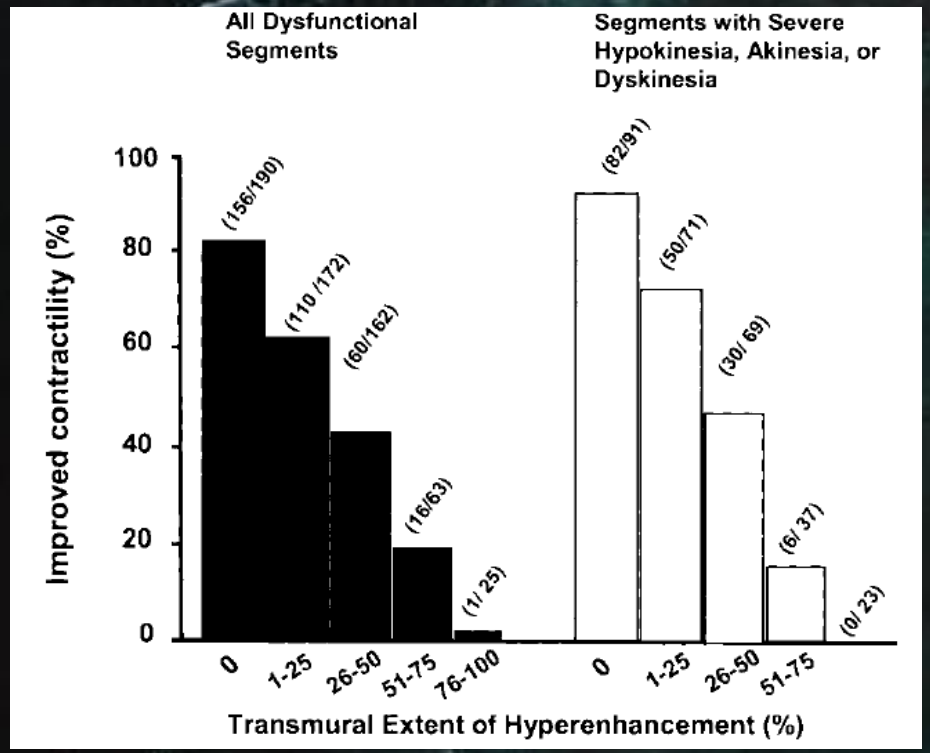
- **BLACK:**
- -Normale
- -Ibernato
- -"Stunned"

50 pts
FE = 43%

EVIDENZE CLINICHE

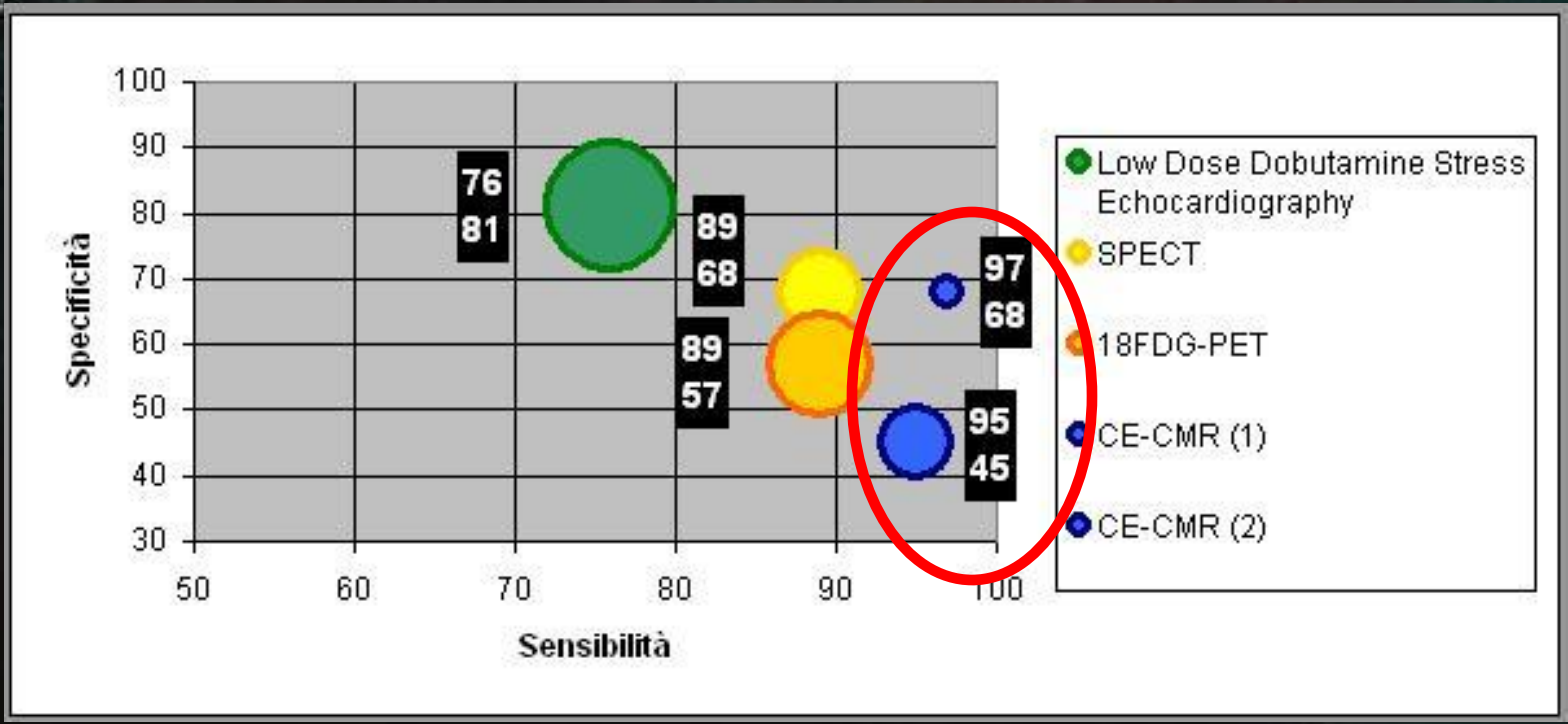


Kim et l. - N Engl J Med 2000;343: 1445-53.



Selvanayagam et al. - *Circulation*. 2004;110:1535-1541.

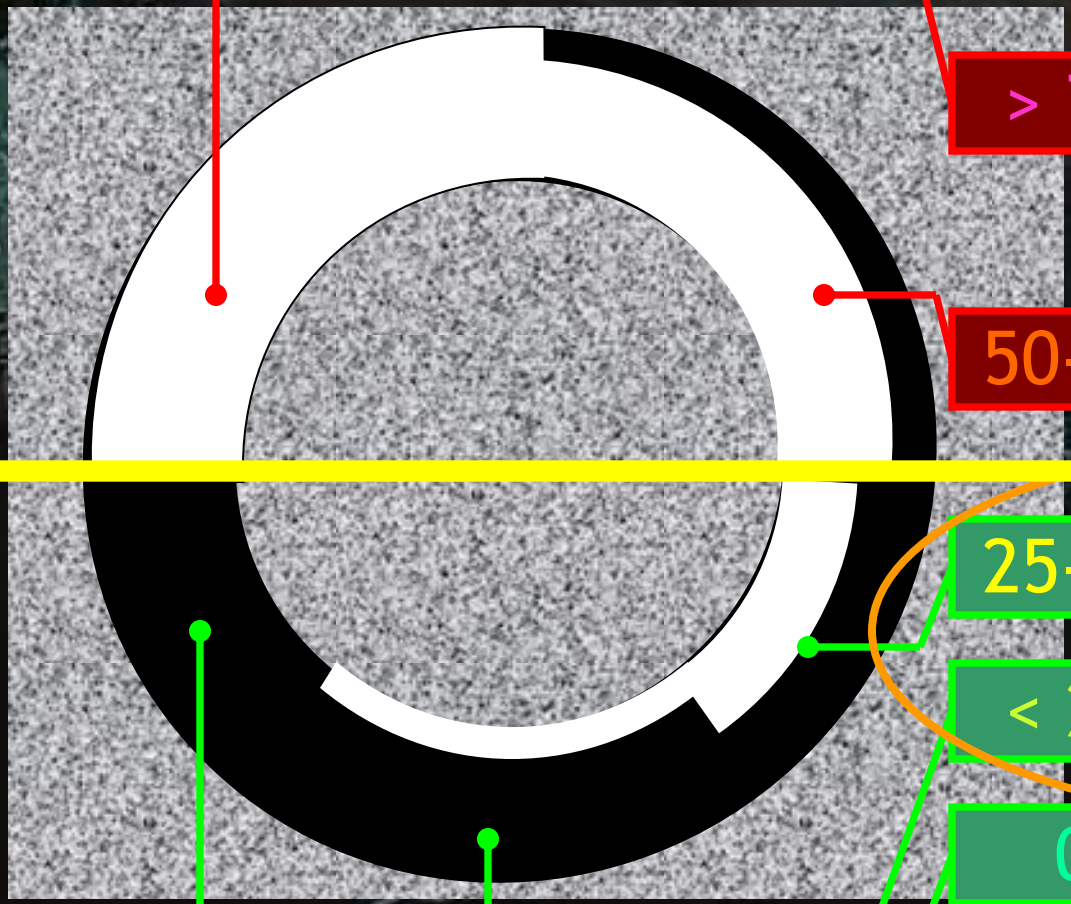
PERFORMANCE



Adatt. da: Kaandorp TAM et al. – Heart, 2005; 91: 1359-1365.

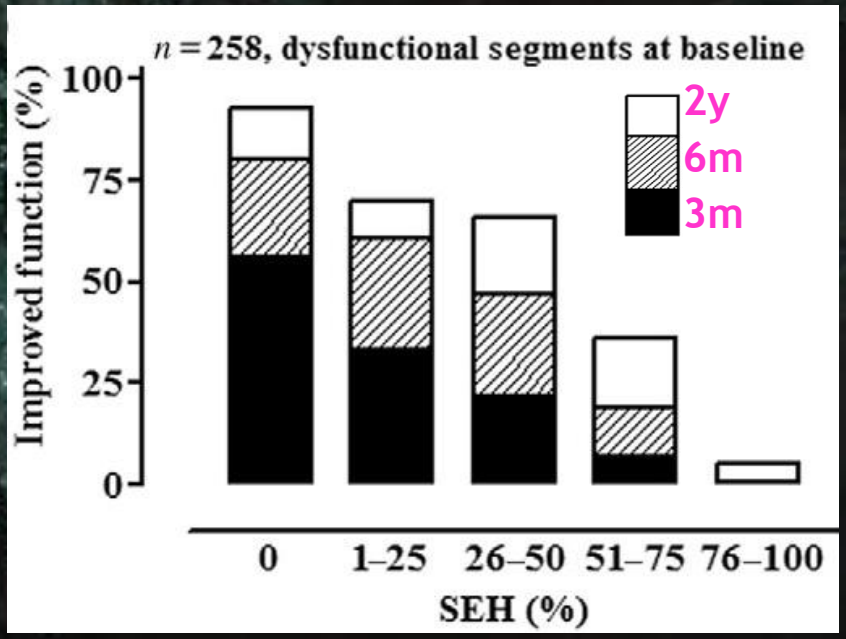
Adatt. da: P. G. Camici et al – Circulation, 2008; 117: 103-114.

APPLICAZIONE CLINICA



	Prob. recupero	Vitalità
> 75%	2%	
50-75%	10%	
25-50%	42%	
< 25%	60%	
0%	78%	

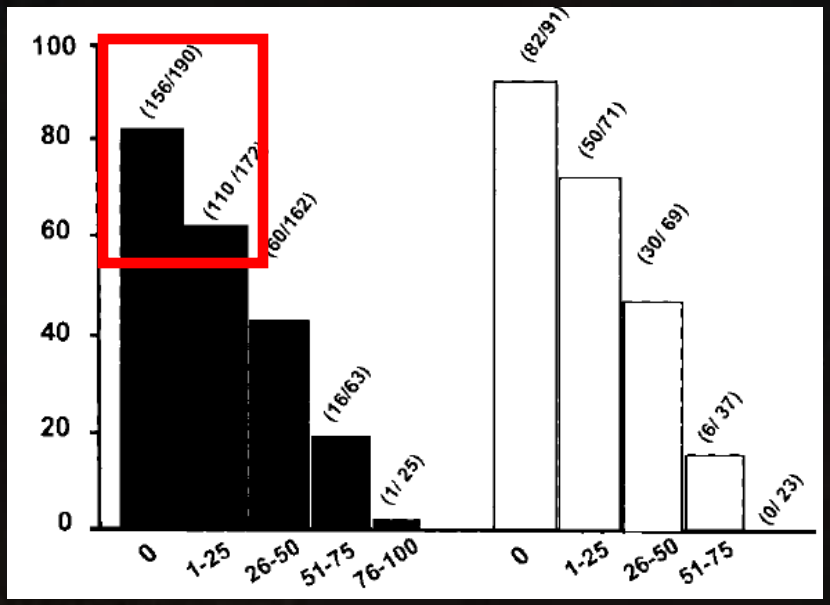
SPECIFICITA': PRECISAZIONI



Il recupero è tempo-dipendente

Dopo 2 anni il 93% segm. Senza LGE recupera

Bondarenko O. et al. – EHJ, 2008; 29: 2000-2005.

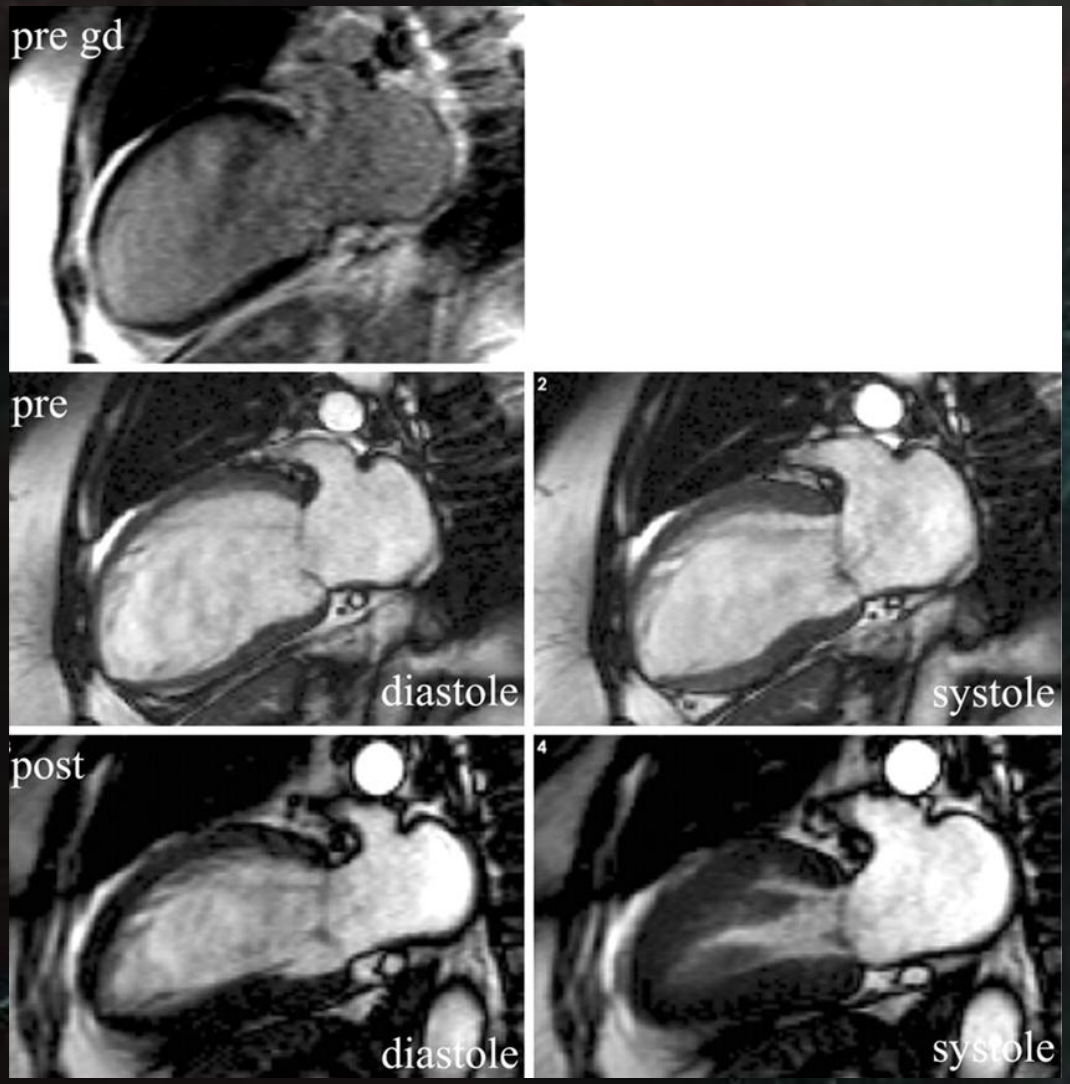


Effeto dell'IMA perioperatorio

Nel 36% dei casi i segmenti che non recuperano hanno subito un danno perioperatorio

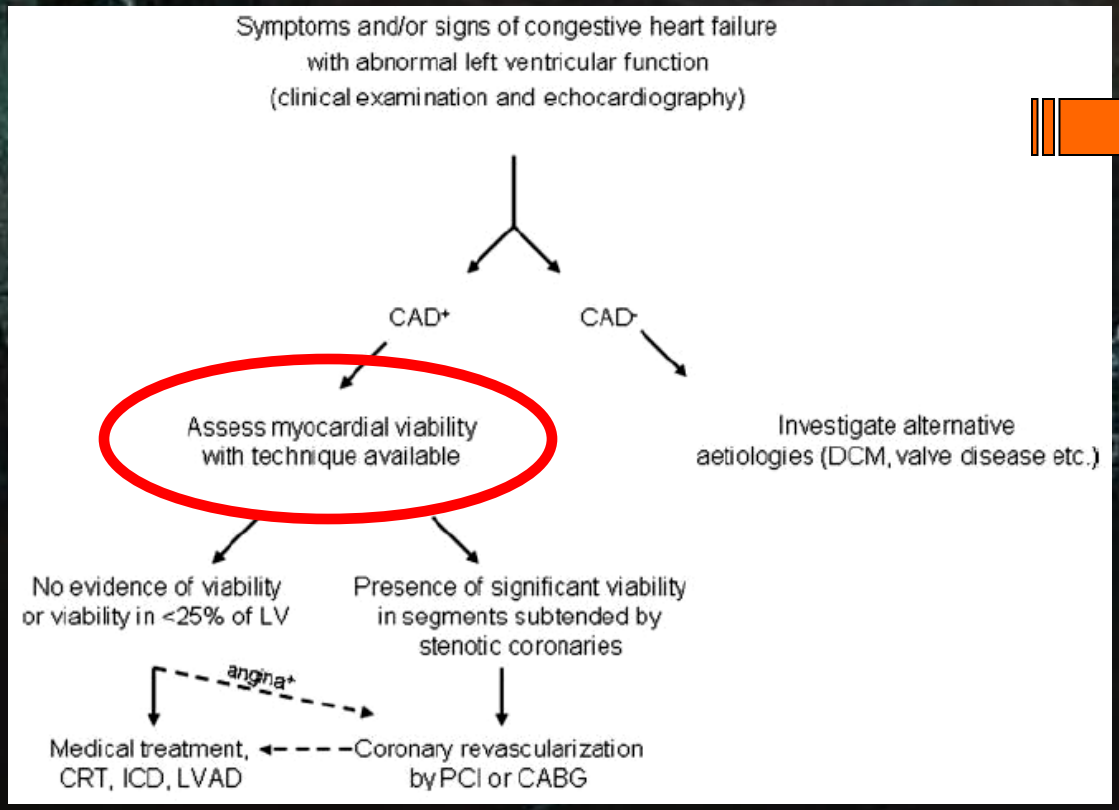
Selvanayagam et al. - *Circulation*. 2004;110:1535-1541.

RM cardiaca: disfunzione + assottigliamento



John AS et al. - *Circulation.* 2005; 111: e24-5.

Indicazioni



P. G. Camici et al – Circulation, 2008; 117: 103-114.

CAD
↓ LV EF
CABG possibile (Coro)

RMC post-contrasto
+
RMC-DBT bassa dose

Peculiarità

PROs

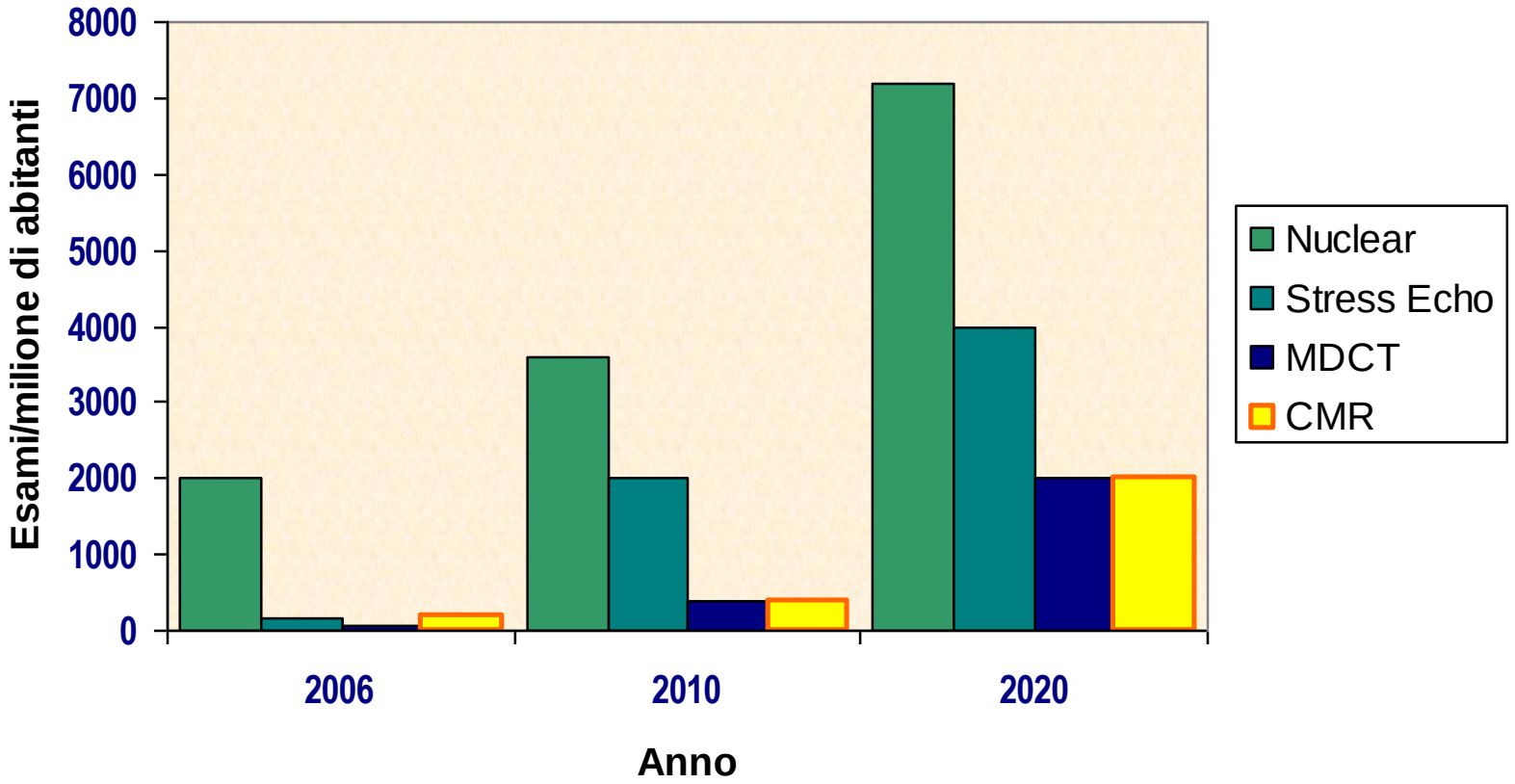
- NO radioesposizione
- NO nefrotossicità
- Informazioni complementari

CONs

- PM – ICD – VADs
- GFR < 30 mL/min (no contrasto)
- Aritmie
- Claustrofobia
- Complessità tecnica
- Scarsa diffusione

Utilizzo

UK


8000
7000
6000
5000
4000
3000
2000
1000
0
Esami/milione di abitanti
2006
2010
2020
Anno
Nuclear
Stress Echo
MDCT
CMR

RMC: “ONE-STOP-SHOP” PREOPERATORIO

ALTRO

-Bypass

-Guida CRT

-Ablazione chirurgica FA

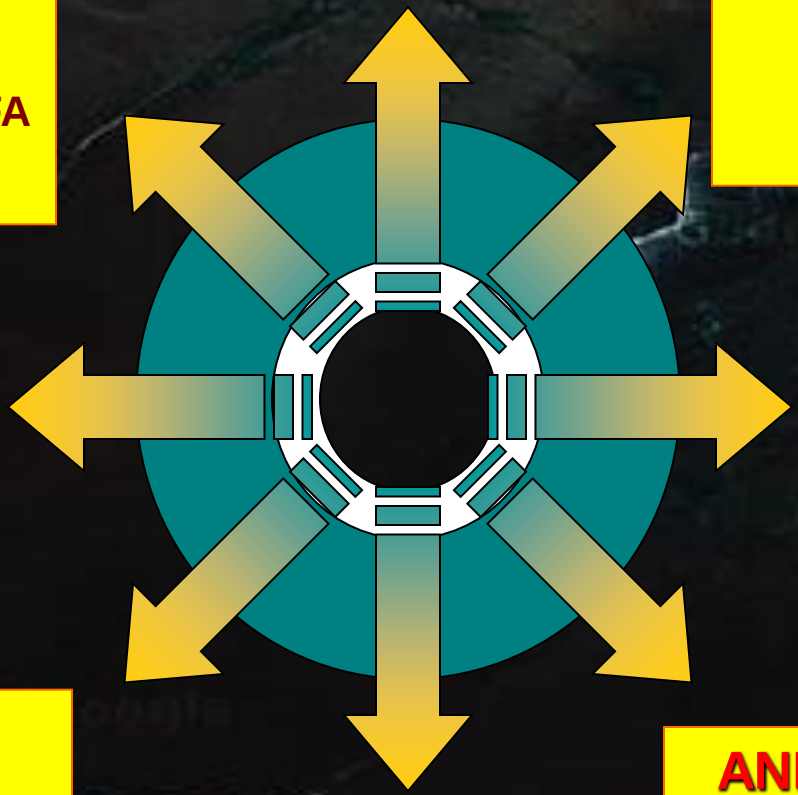
…

VITALITA’

ISCHEMIA

→RMC-stress

→ perfusione



VALVOLE

FUNZIONE VS/VD

AORTA

→ angio-RM

ANEURISMA VS

TROMBOSI VS