

Insuficiencia Cardíaca con Fracción de Eyección Preservada



Gonzalo de la Morena
Hospital Universitario Virgen de la Arrixaca
Murcia

Definición

Insuficiencia Cardíaca con Fracción de Eyección Preservada

Insuficiencia Cardíaca Diastólica

Insuficiencia Cardíaca con Fracción de Eyección Normal

Insuficiencia Cardíaca con Función Sistólica Preservada

IC con FEP / IC Diastólica

Criterios Diagnósticos

- ✚ Síntomas y signos clínicos de IC
- ✚ FEVI “preservada”
- ✚ Disfunción diastólica



Diagnóstico de IC



EUROPEAN
SOCIETY OF
CARDIOLOGY®

European Heart Journal (2008) **29**, 2388–2442
doi:10.1093/eurheartj/ehn309

Heart failure is a clinical syndrome in which patients have the following features:

- **Symptoms typical of heart failure**

(breathlessness at rest or on exercise, fatigue, tiredness, ankle swelling)

and

- **Signs typical of heart failure**

(tachycardia, tachypnoea, pulmonary rales, pleural effusion, raised jugular venous pressure, peripheral oedema, hepatomegaly)

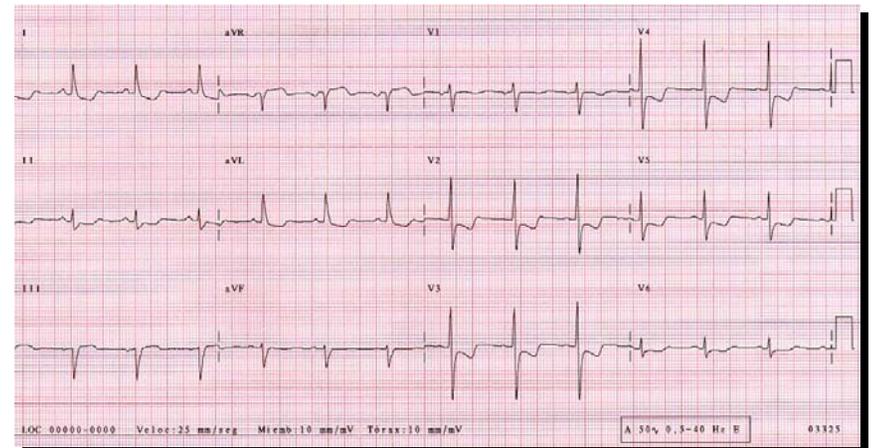
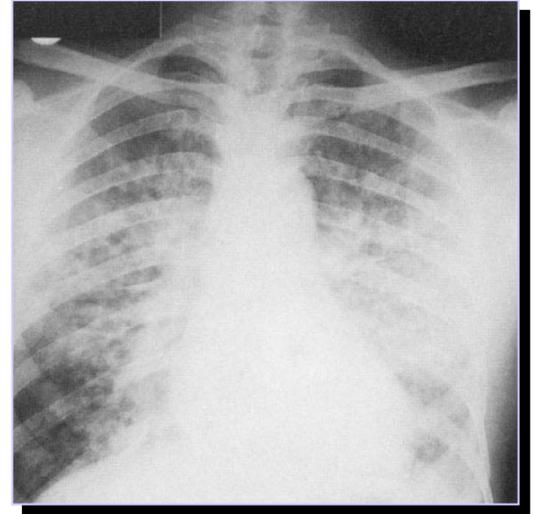
and

- **Objective evidence of a structural or functional abnormality of the heart at rest**

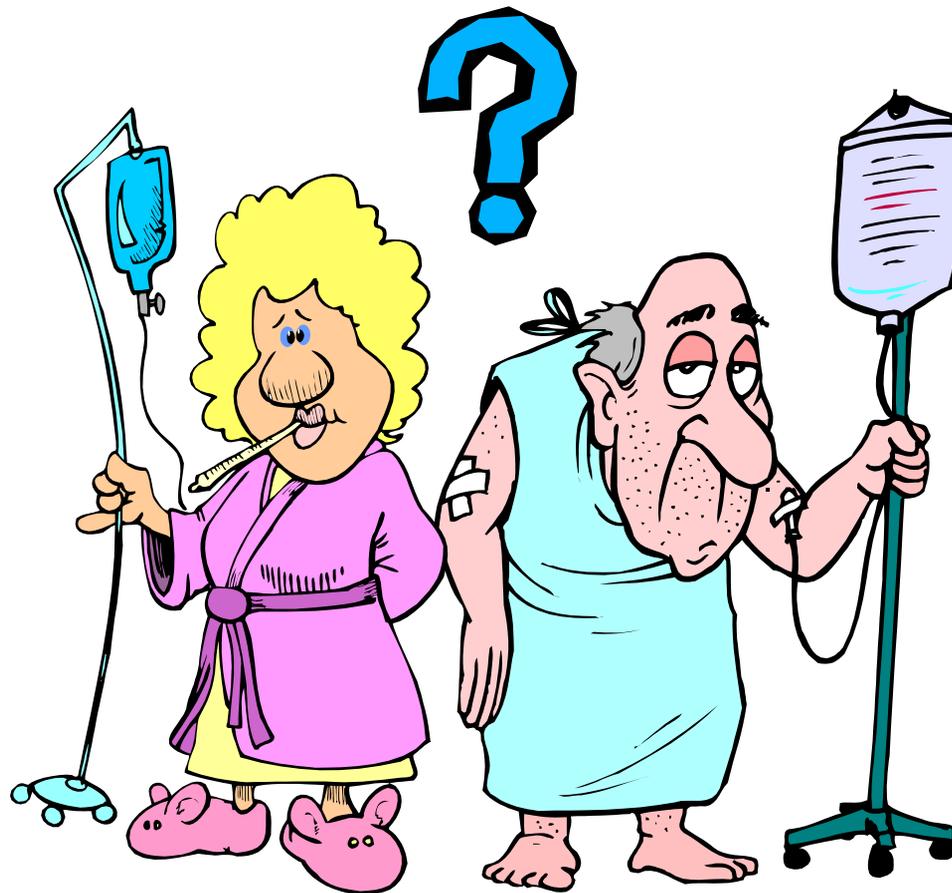
(cardiomegaly, third heart sound, cardiac murmurs, abnormality on the echocardiogram, raised natriuretic peptide concentration)

Diagnóstico de IC

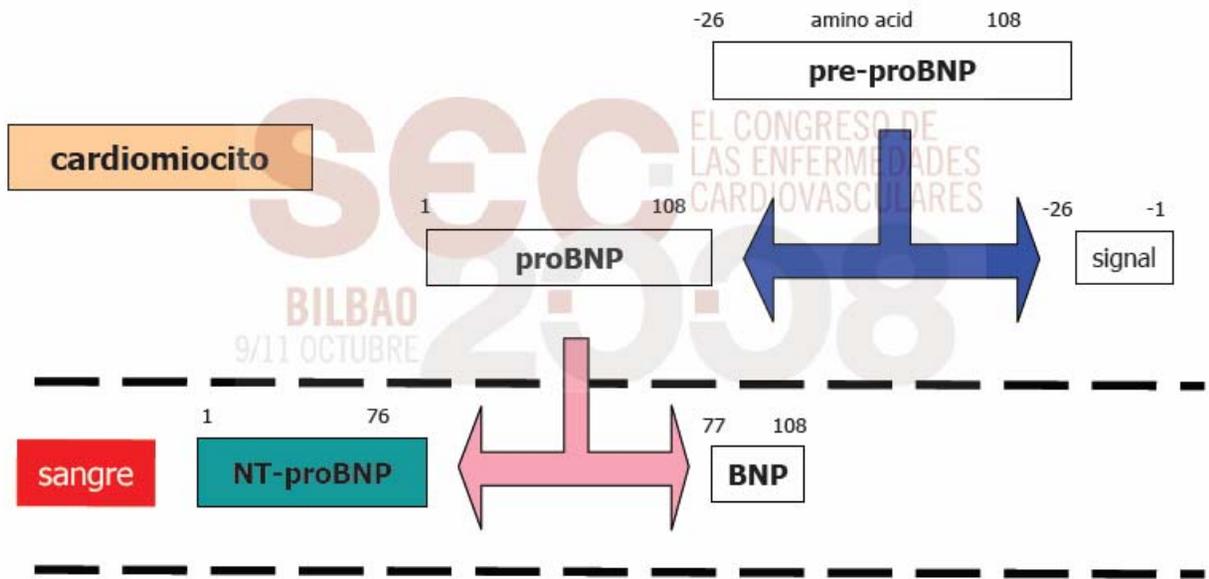
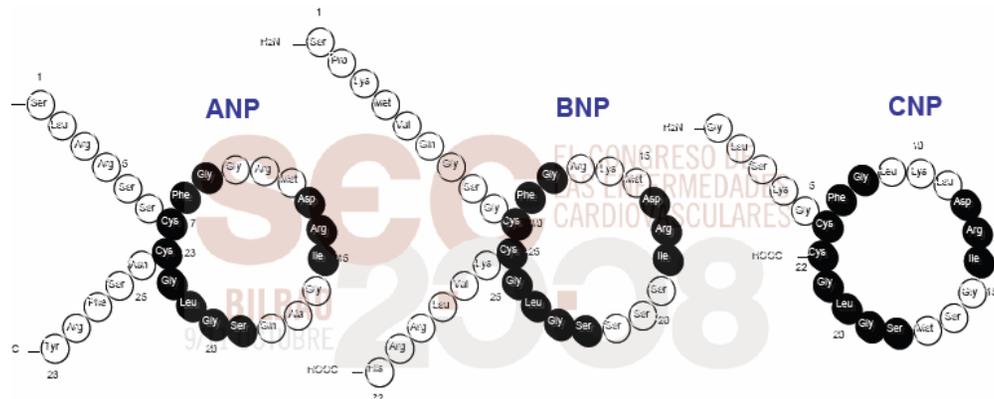
Clínico



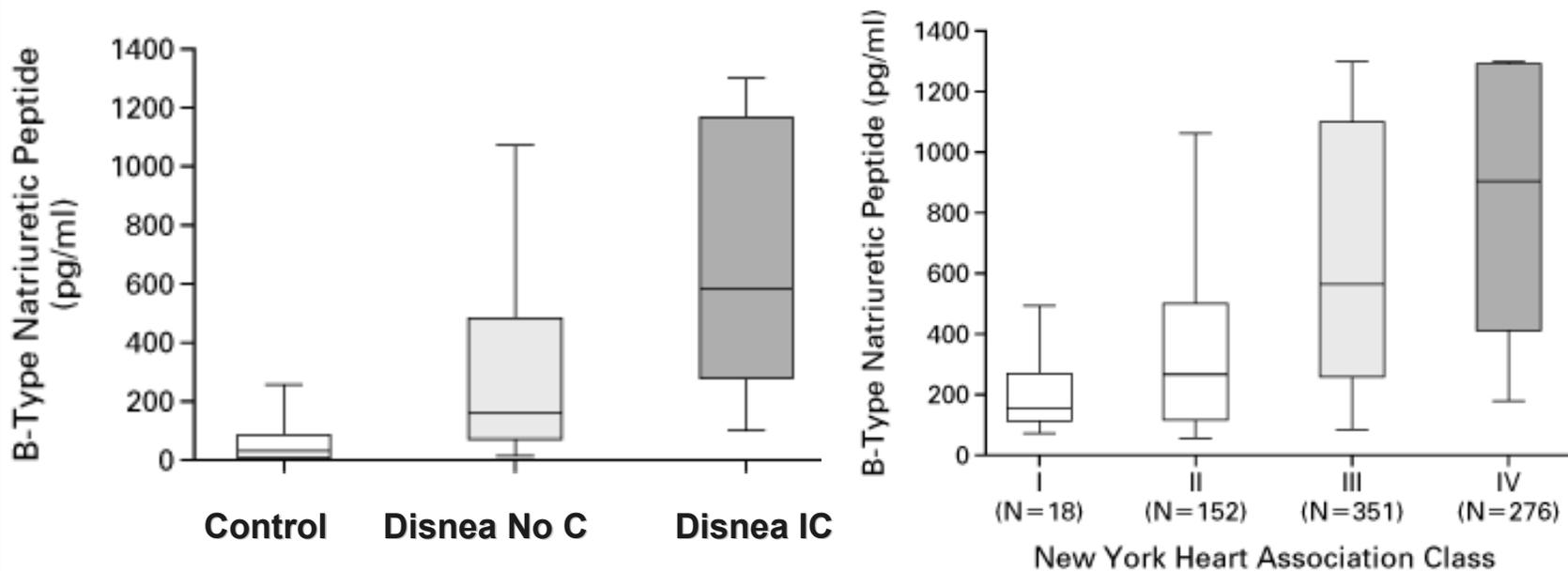
Diagnóstico de IC



Péptidos natriuréticos

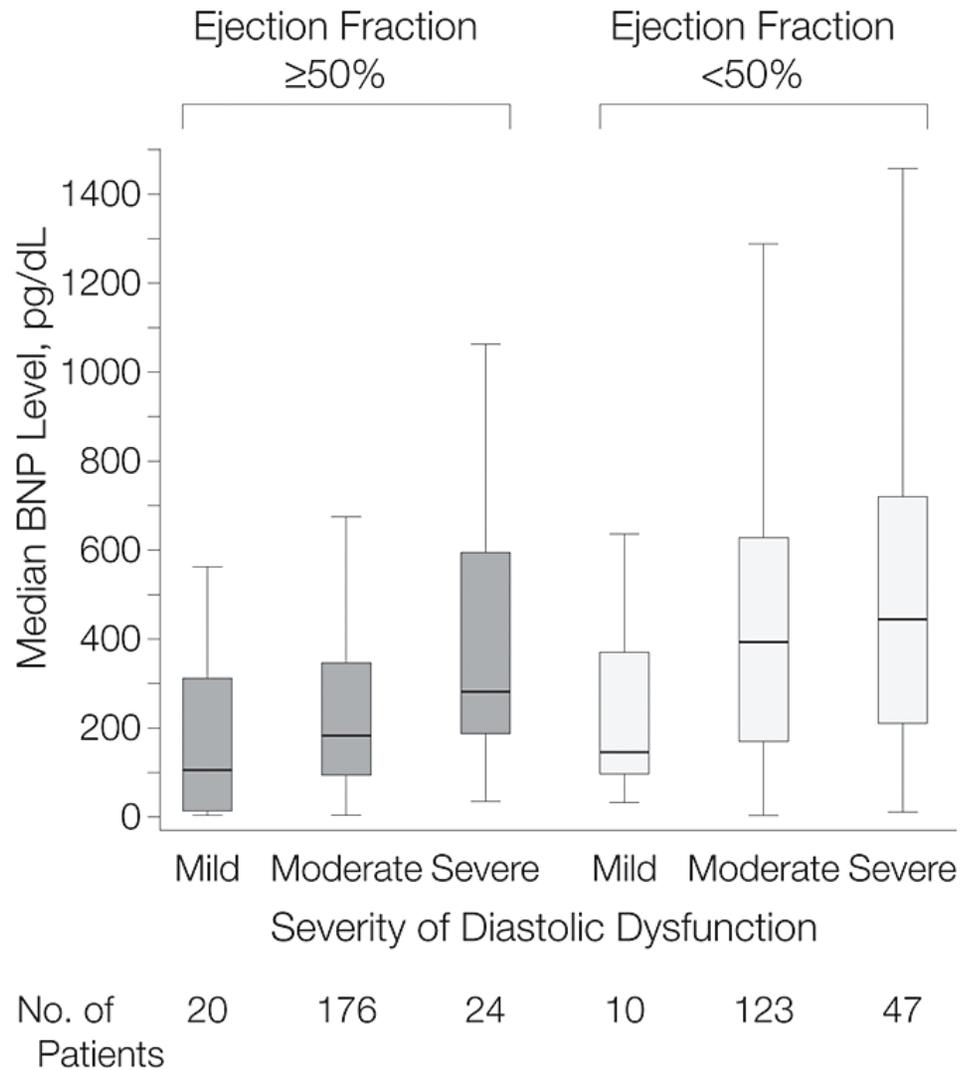


Diagnóstico de IC



Maisel AS et al. N Engl J Med 2002 Jul 18;347(3):161-7.

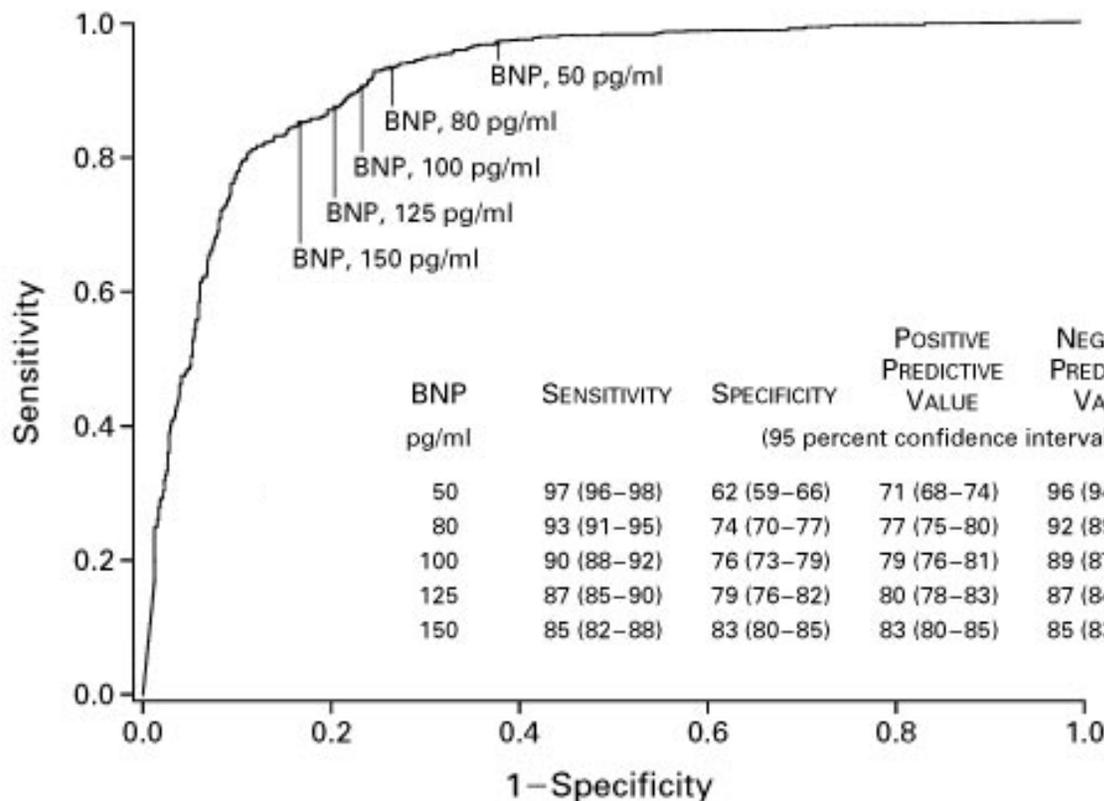
Diagnóstico de IC



Diagnóstico de IC

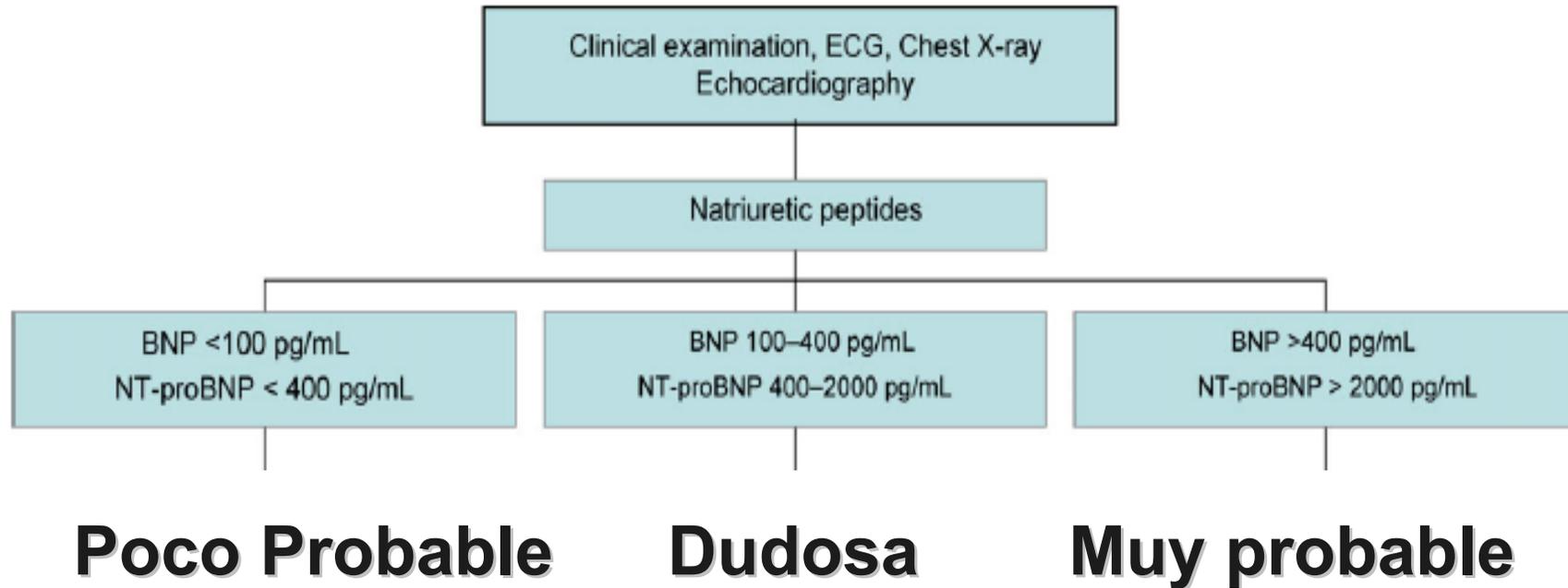


The NEW ENGLAND
JOURNAL of MEDICINE



N Engl J Med. 2002 Jul 18;347(3):161-7.

Diagnóstico de IC



Diagnóstico de IC

Otras causas de \uparrow BNP: Hipertrofia de VI, taquicardia, sobrecarga de volumen, isquemia, insuficiencia renal, edad avanzada, cirrosis, sepsis, infecciones...



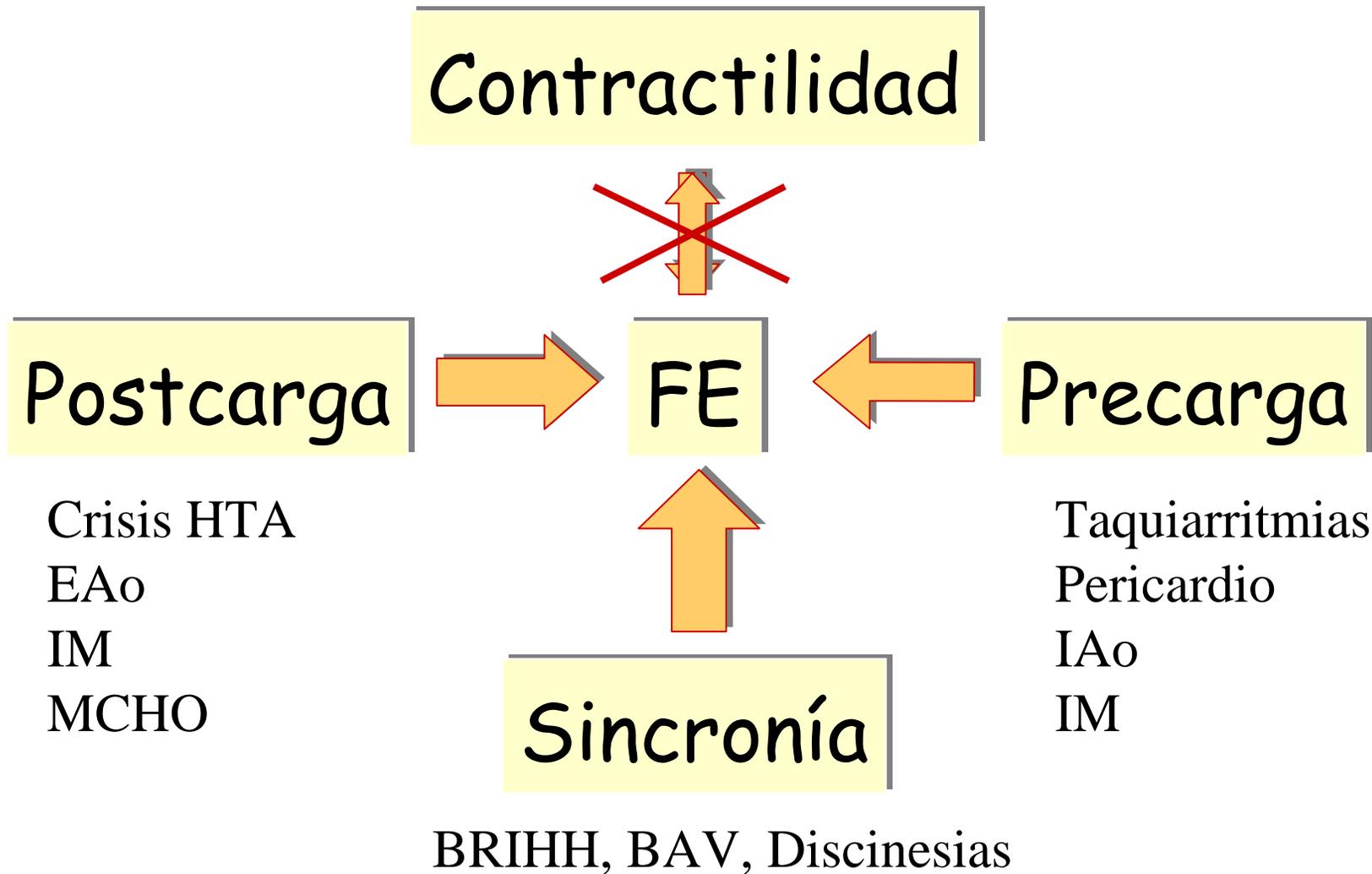
Función ventricular

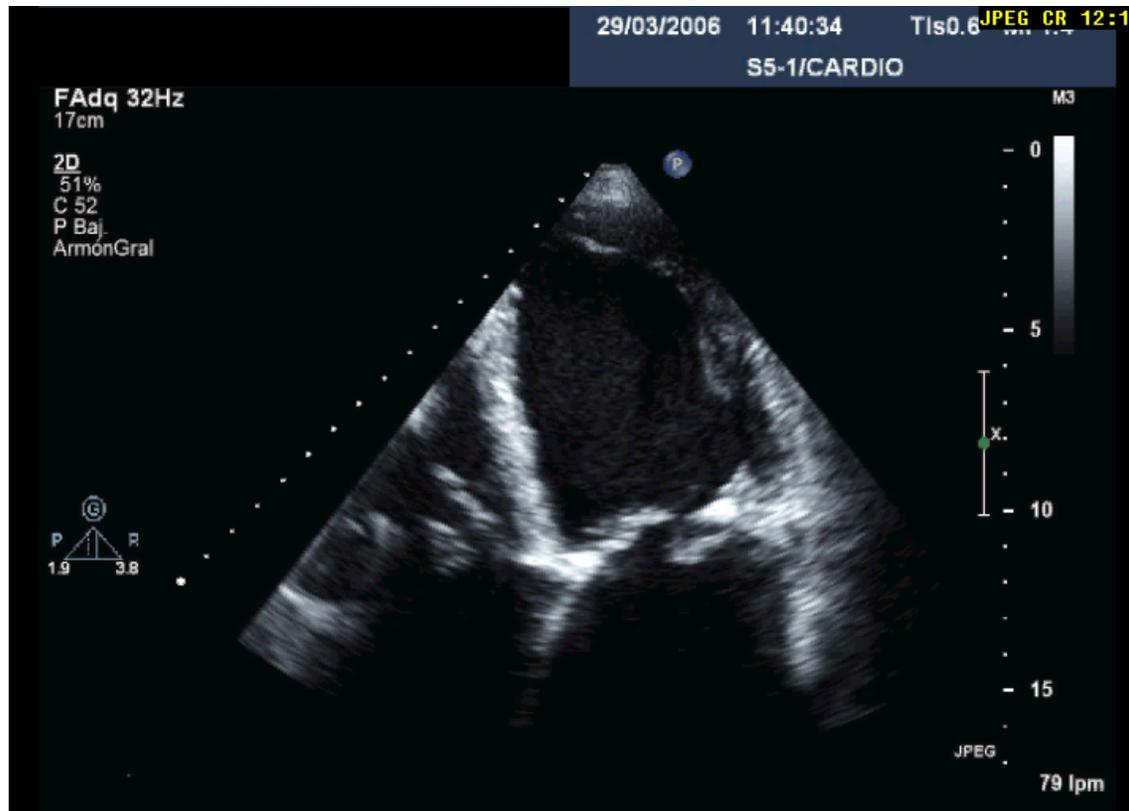
“Preservada”

FEVI > 45-50%
IVTDVI < 97 ml/m²

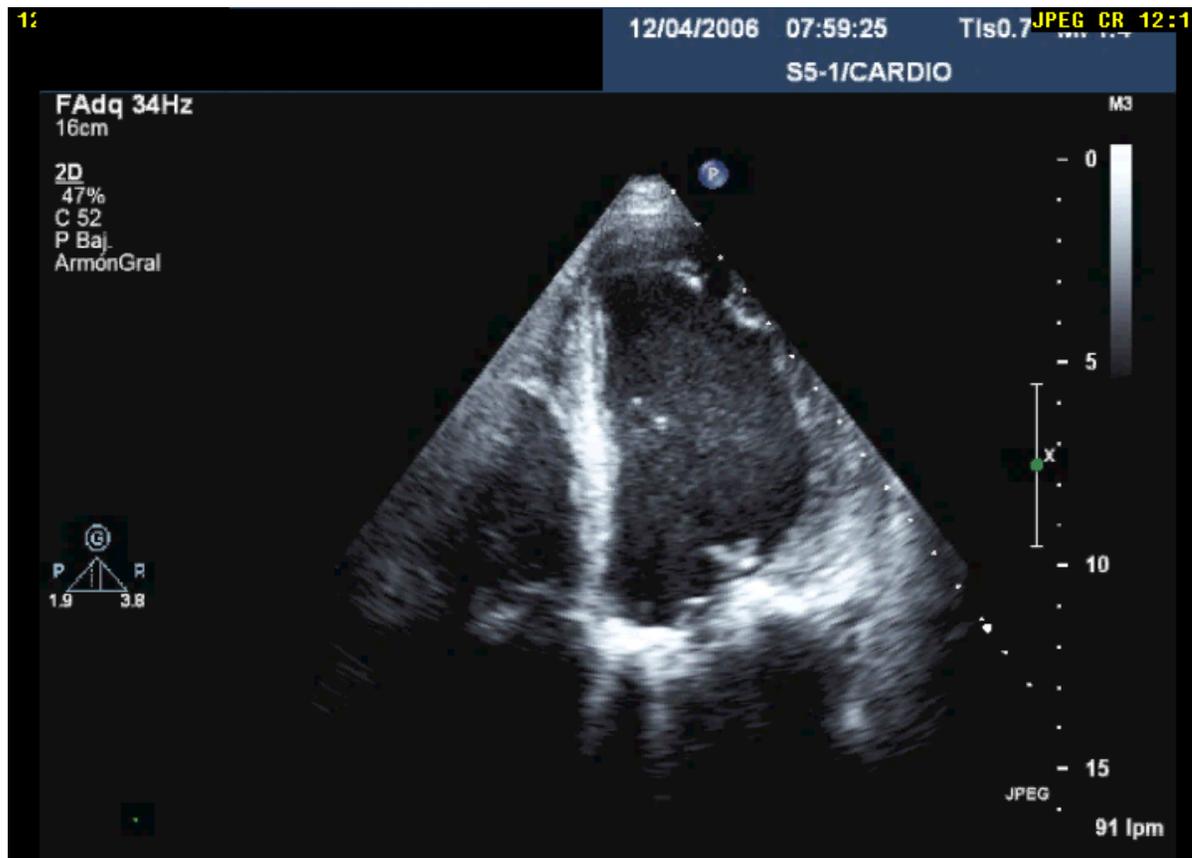


~~FE = Contractilidad~~





Vtd 187 cc; Vts: 84 cc; FE 54%

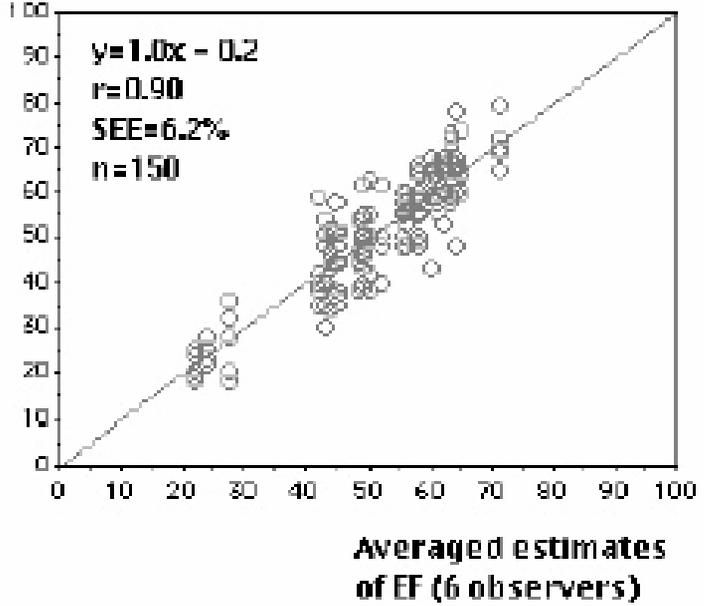
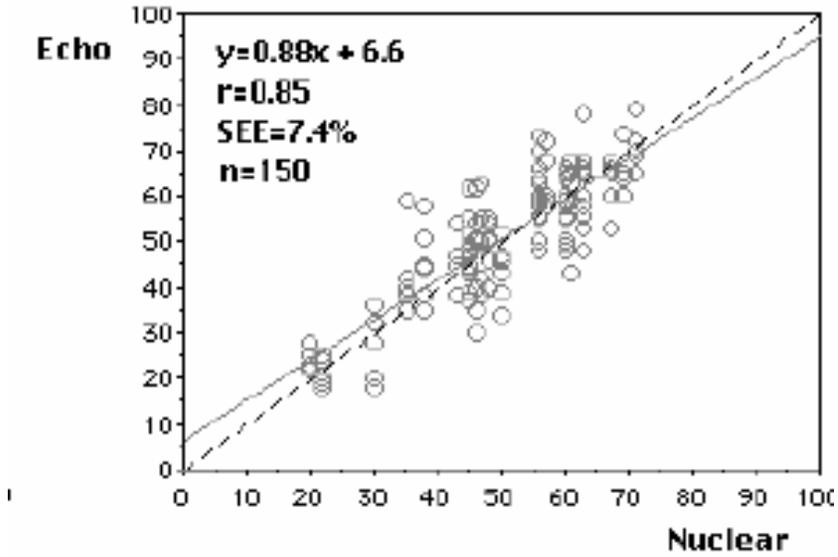


Vtd 170 cc; Vts: 112 cc; FE 34%

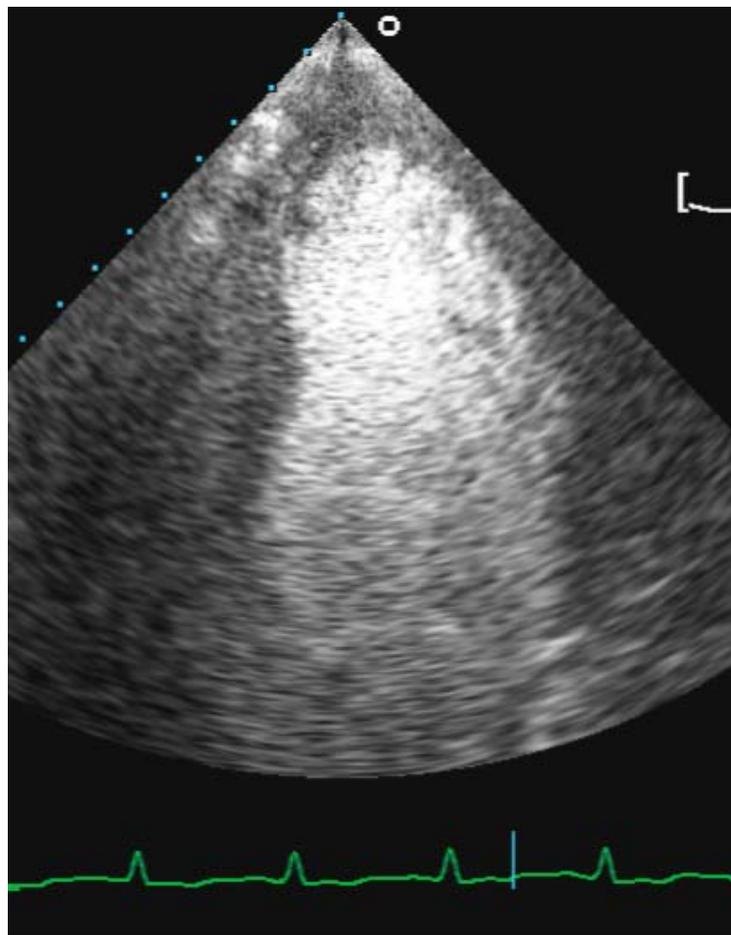
Medimos ó estimamos

Estimación visual de la FE

- Acuerdo con MN: 6 - 7%
- Variabilidad interobservadores: 5 - 10%.



Cálculo de Volúmenes y FE



Reproducibilidad

	Echo Unenhanced	Echo Contrast Enhanced	Cineventriculography	cMRI
All patients	100	100	100	56
Onsite vs. offsite 1	0.37	0.71	0.70	0.79
Onsite vs. offsite 2	0.43	0.73	0.44	0.26
Offsite 1 vs. offsite 2	0.44	0.88	0.52	0.26
Mean kappa (95% CI)	0.41 (0.30–0.52)	0.77 (0.69–0.85)	0.56 (0.45–0.66)	0.43 (0.28–0.58)
Only cMRI patients	56	56	56	56
Mean kappa (95% CI)	0.41 (0.30–0.52)	0.77 (0.66–0.87)	0.49 (0.35–0.63)	0.43 (0.28–0.58)

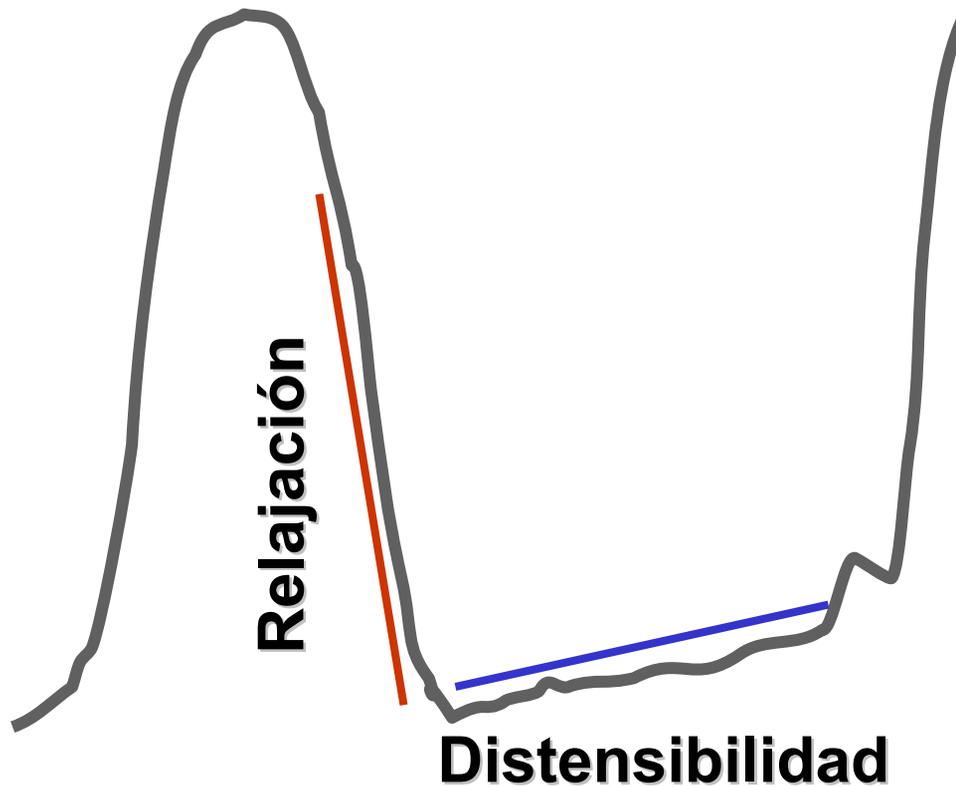
Hoffmann R et al JACC 2006; 47: 121 - 128.

Evaluación de la función ventricular

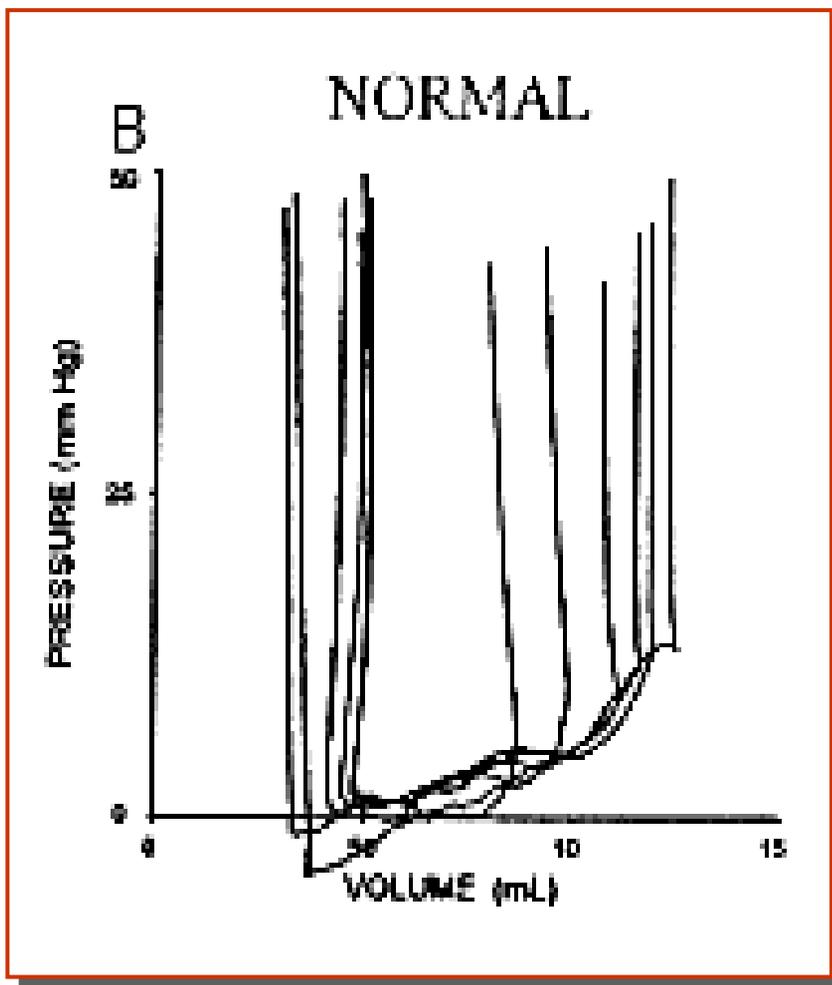


Medir y
Tener en cuenta datos clínicos

Función diastólica

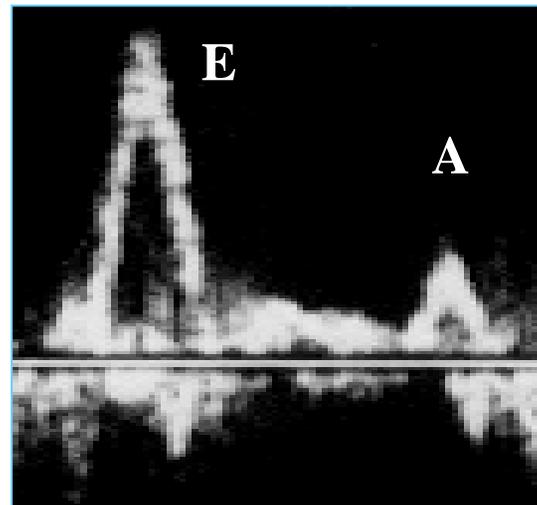
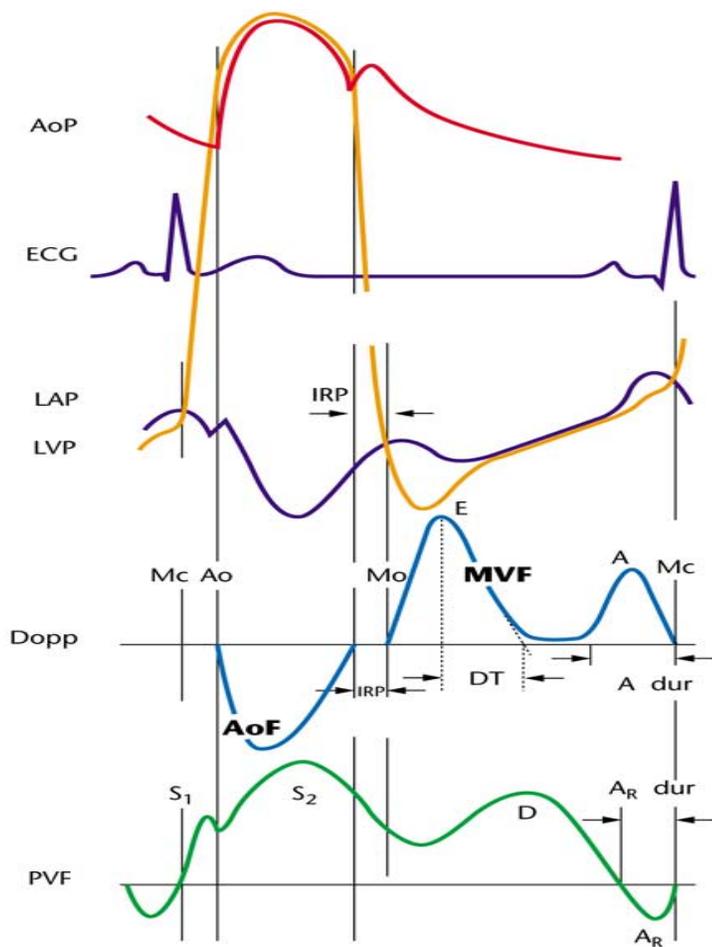


Evaluación de la función diastólica



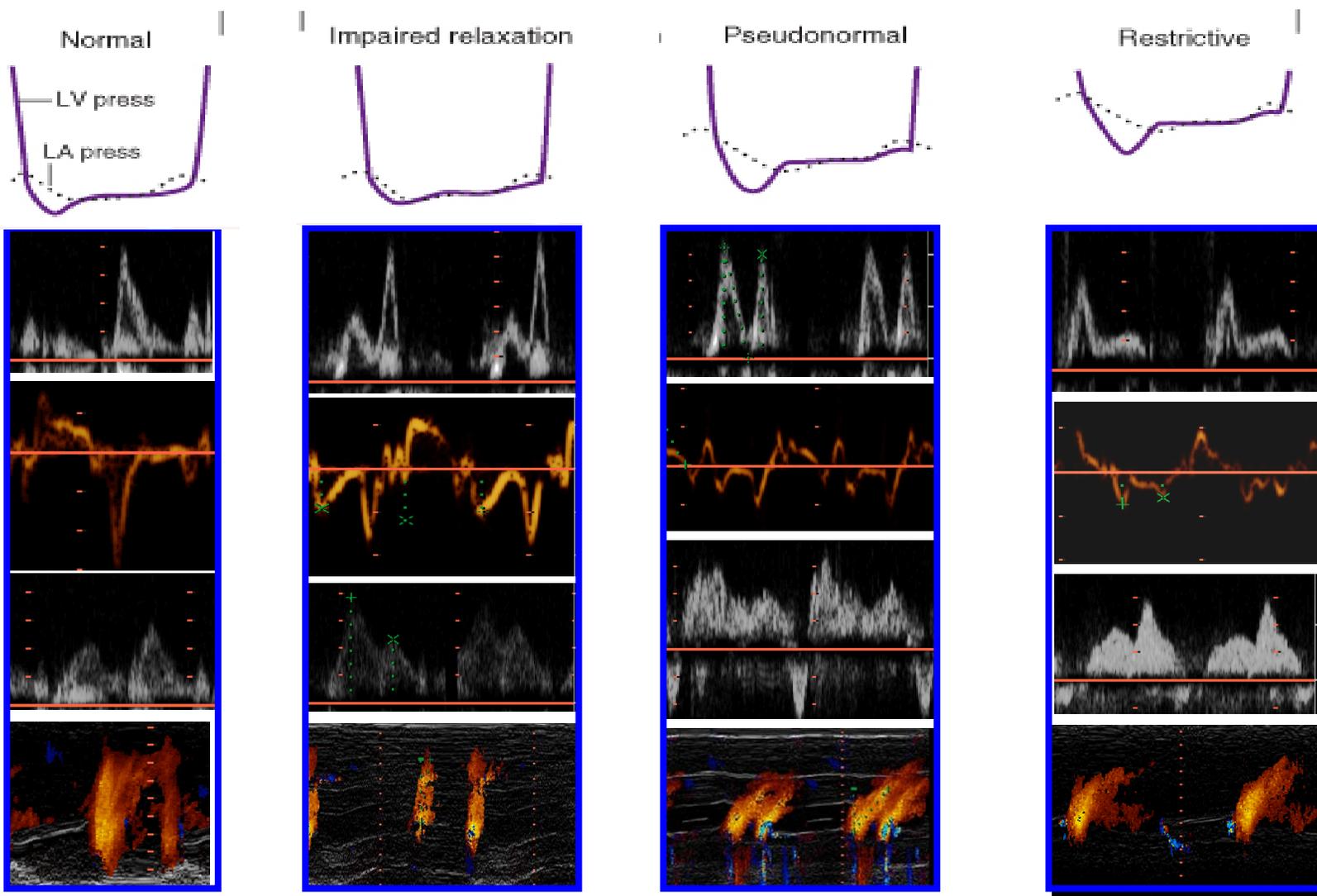
PCWP > 12 mmHg
PTDVI > 16 mmHg

Evaluación de la función diastólica

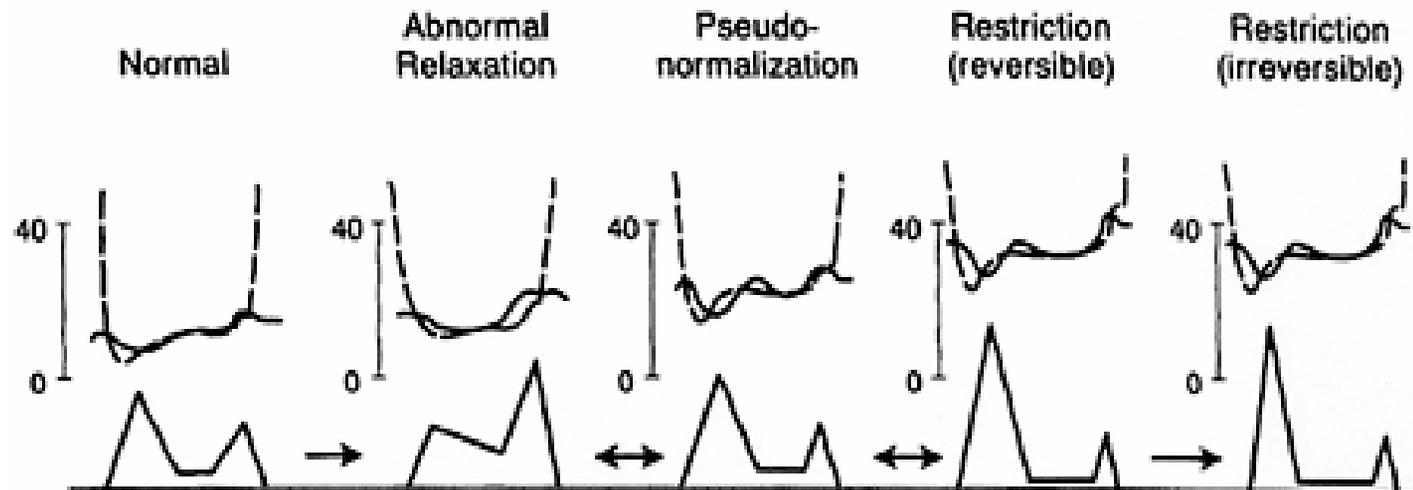


Normal

Evaluación de la función diastólica



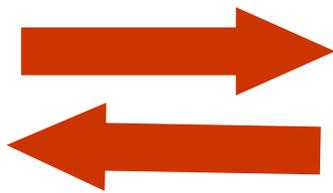
Evaluación de la función diastólica



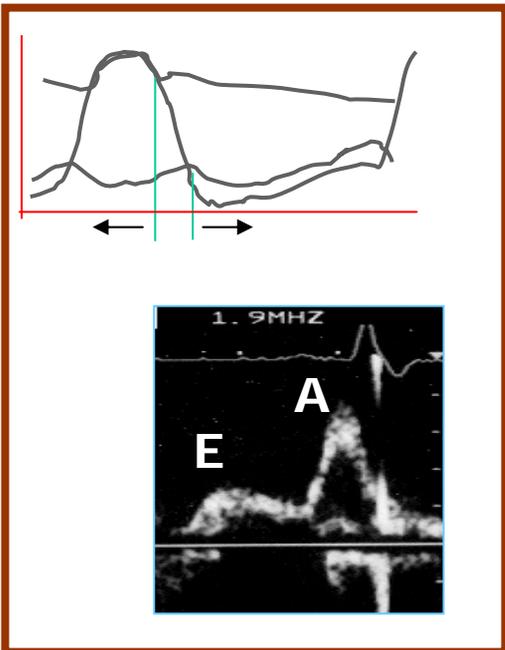
Mean LAP	=	= ↑	↑↑	↑↑↑	↑↑↑↑
TAU	=	↑	↑	↑↑	↑↑
NYHA		I-II	II-III	III-IV	IV
Grade diastolic dysfunction		I	II	III	IV

Evaluación de la función diastólica

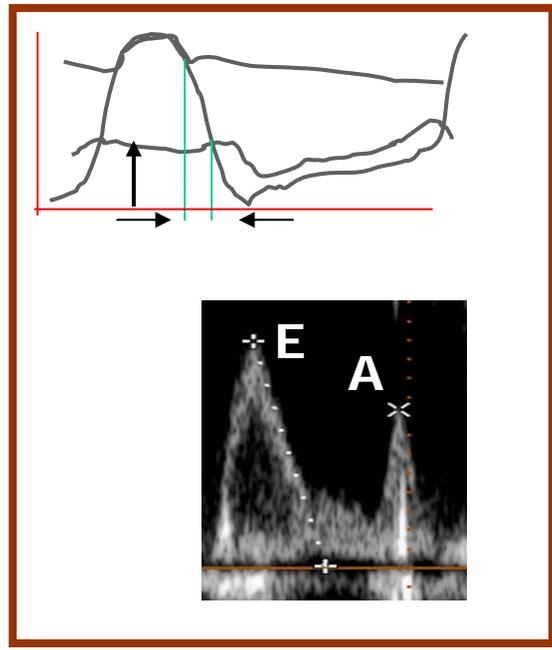
↑ Postcarga
↓ Precarga
Taquicardia



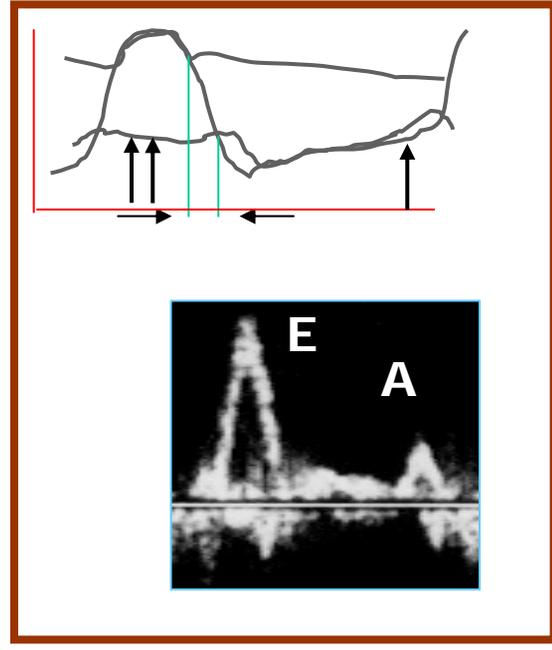
↓ Postcarga
↑ Precarga
Bradicardia



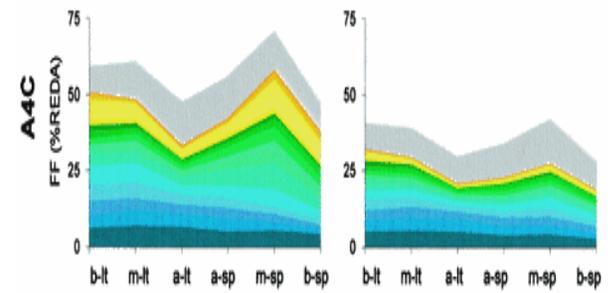
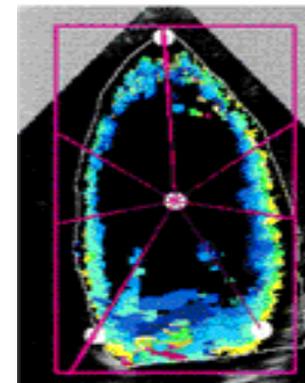
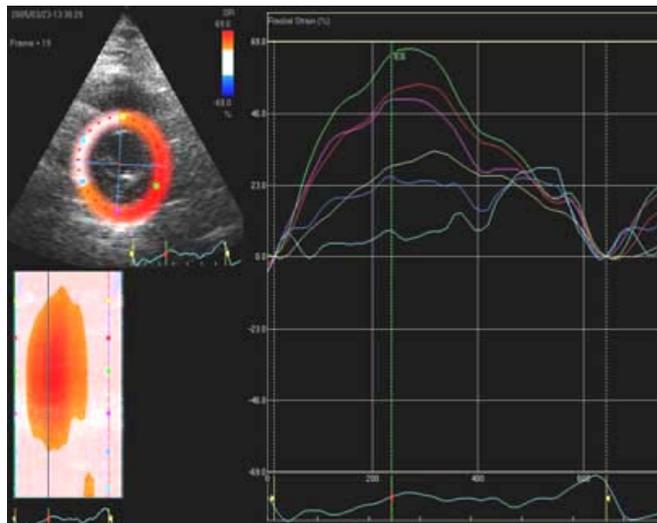
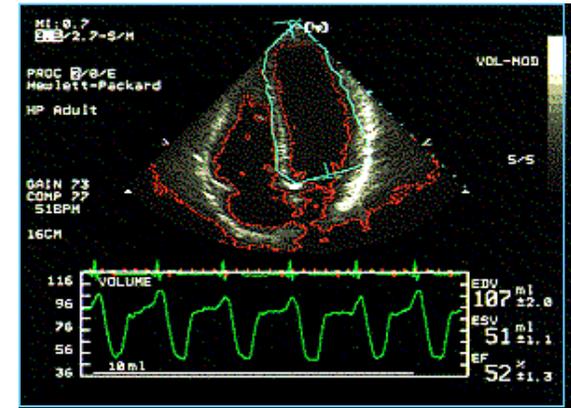
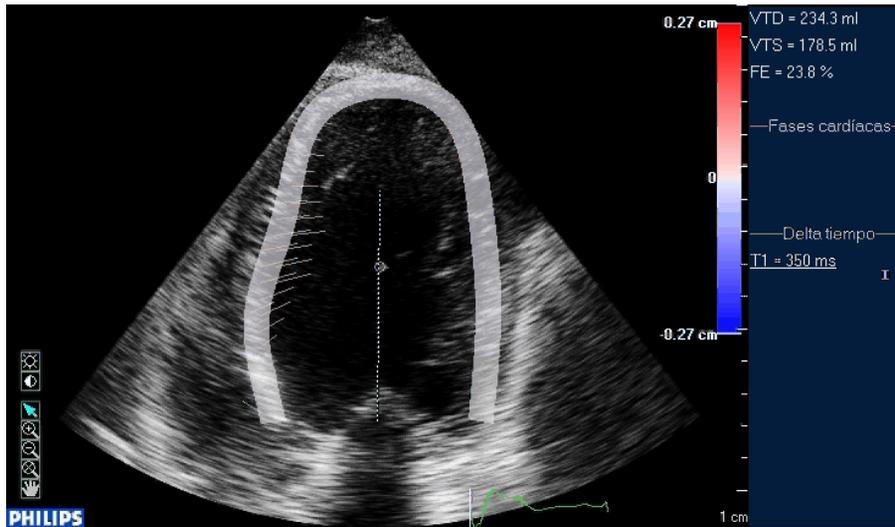
Relajación prolongada



Pseudonormal



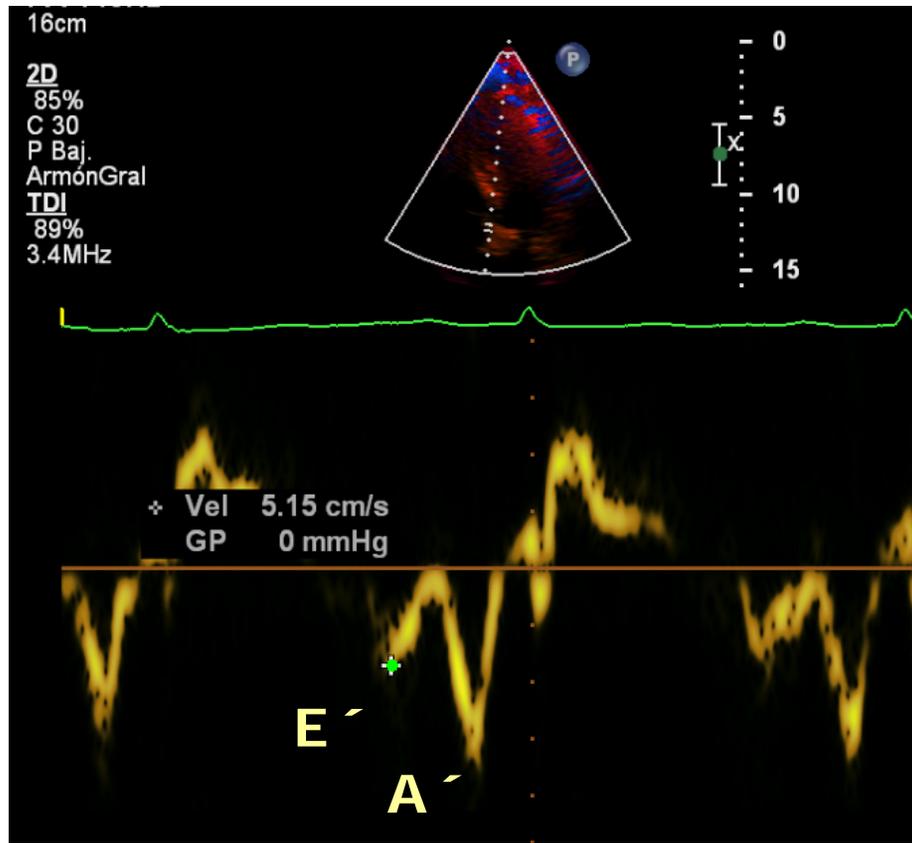
Restrictivo



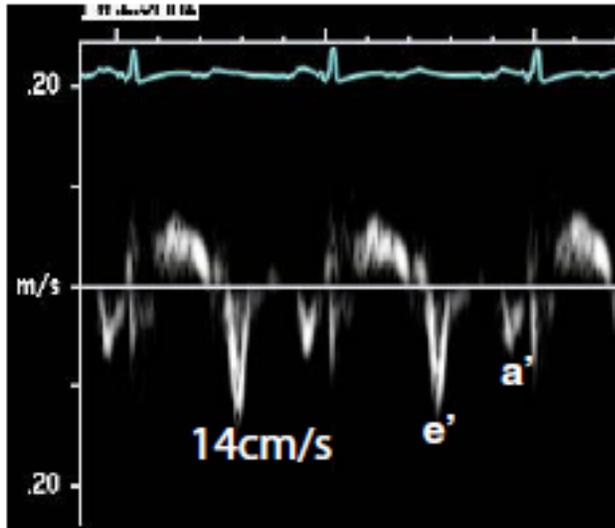


Evaluación de la función diastólica

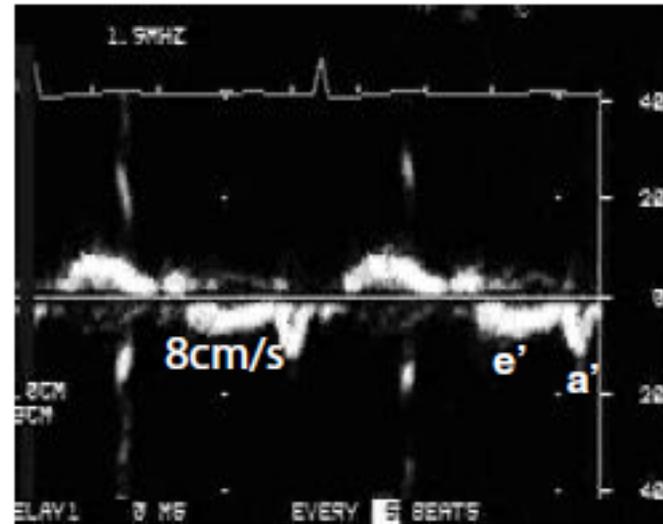
Doppler Tisular (DTI)



Evaluación de la función diastólica



Normal



HTA

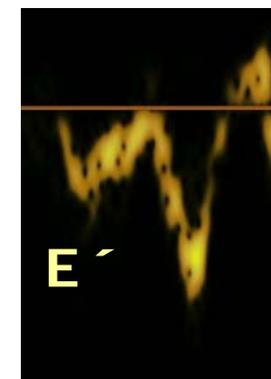
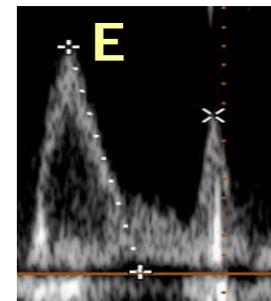
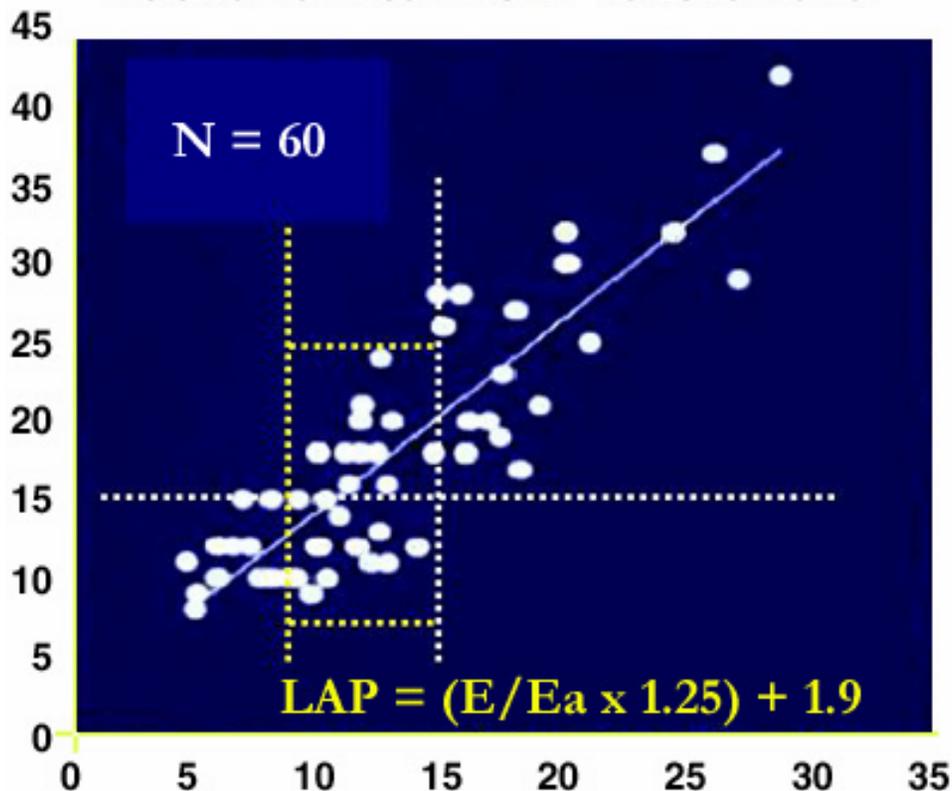
normal / pseudonormal (1)
atletas / MCH (2)

1: Sohn D.W. et al JACC 1997;30:474-480.

2: Palka P et al JACC 1997;30:760-768

Evaluación de la función diastólica

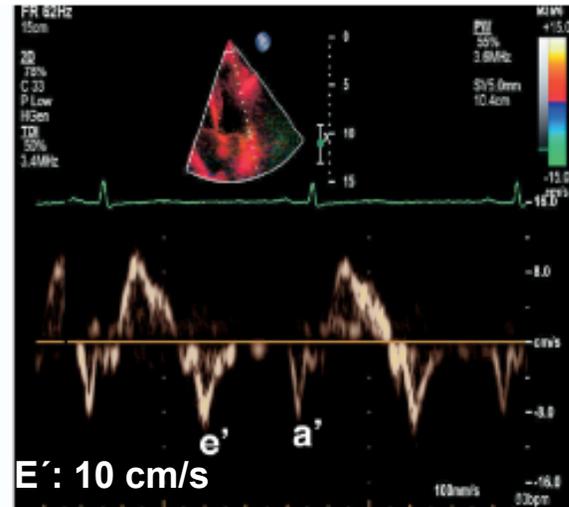
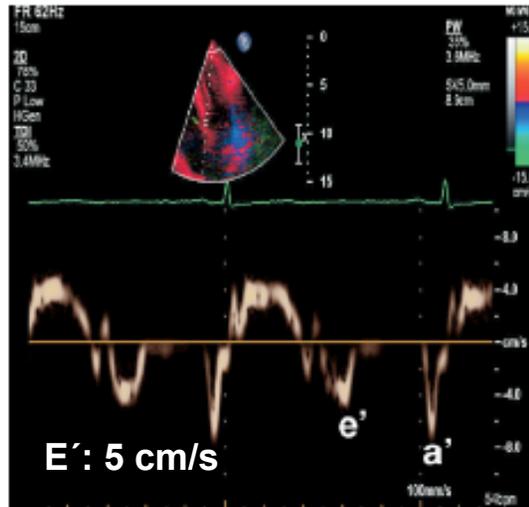
Relation of Mean PCWP to E/Ea Ratio



Relación E/E' > 15

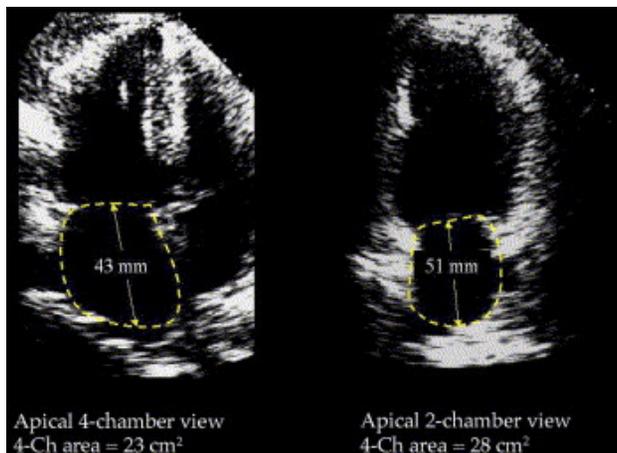
PCWP > 15 mmHg

Limitaciones del DTI



- Valvulopatía Mitral
- Calcificación anillo mitral
- Pericarditis constrictiva

Evaluación de la función diastólica



N	22±6 ml/m ²	
Dilatación ligera		29-33 ml/m ²
moderada		34-39 ml/m ²
severa		≥ 40 ml/m ²

ASE. Lang RM. JASE 2005

DILATACIÓN AI como MARCADOR de DD y de IC

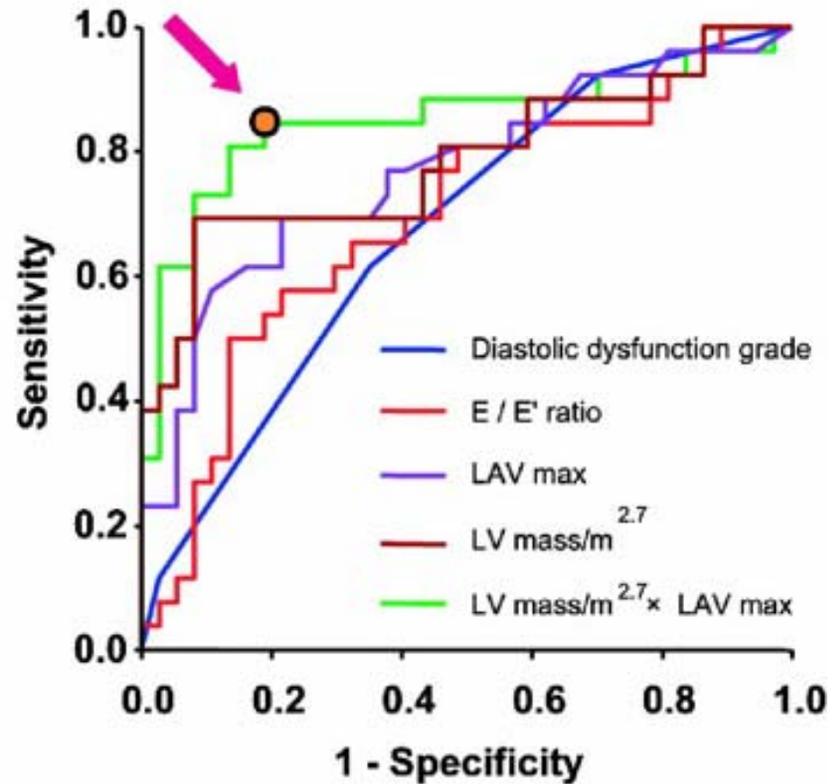
1. Reflejo de **aumento** de presiones de llenado de VI
2. Marcador de **cronicidad** de la disfunción diastólica.
3. Fácil de estudiar
4. Independiente de las condiciones de carga

Evaluación de la función diastólica

Hipertrofia de VI

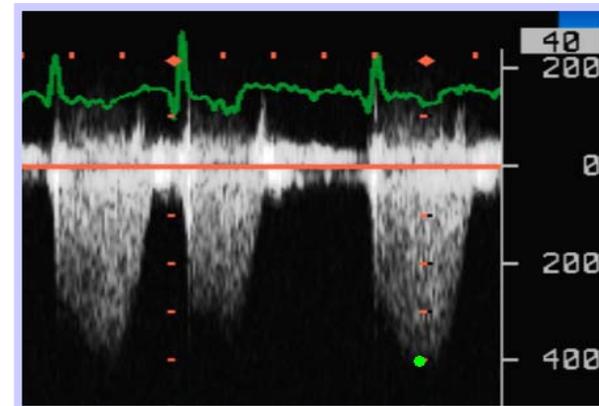
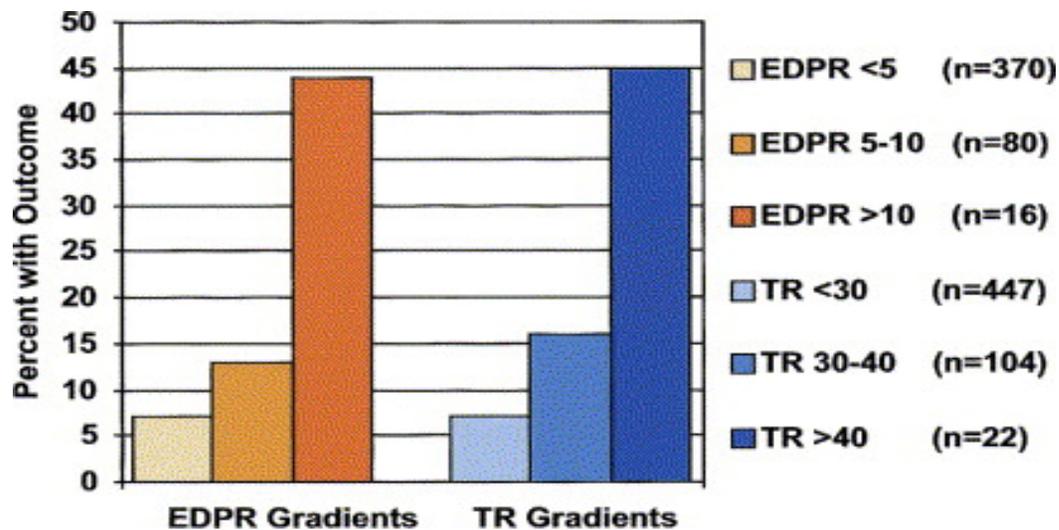
♀ > 122 gr/m²

♂ > 149 gr/m²



Evaluación de PSAP

Capacidad predictiva para detectar reingresos por IC o Muerte CV en 3 años.



Conclusión

Síntomas y signos clínicos de IC

(BNP > 200 pg/ml; NT proBNP > 220 pg/ml)



FEVI normal (>50%; IVTDVI < 97 ml/m²)



Evidencia de disfunción diastólica

Hemodinámica

PCP > 12 mmHg

PTDVI > 15 mmHg

Doppler

$15 > E/E' > 8$

$E/E' > 15$

biomarcadores

$IAI > 40 \text{ ml/m}^2$

$IMVI > 120; 149 \text{ gr/m}^2$

$TD > 280 \text{ ms } E/A < 0.5$

Fibrilación Auricular

IC con FEP



Desde ahora
prestaré más
atención al
ECO...

y yo haré
mejor las
peticiones



GRACIAS

GRACIAS

GRACIAS