IV

Reunión Paciente
Pluripatológico y
Edad Avanzada

**Evaluación Pronóstica.
La eficiencia en la toma de decisiones**

NOVEDADES RELACIONADAS CON EL PRONÓSTICO EN ENFERMEDADES PREVALENTES

Insuficiencia cardiaca

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Hospital Universitario Son Dureta. Palma de Mallorca

pronóstico.

4. m. *Med.* Juicio que forma el médico respecto a los cambios que pueden sobrevenir durante el curso de una enfermedad, y sobre su duración y terminación por los síntomas que la han precedido o la acompañan.~

Parámetros de interés pronóstico

- **Tasa de supervivencia a los cinco años.**
  Porcentaje de pacientes que sobreviven cinco años a partir de algún momento en el curso de la enfermedad.
- **Tasa de letalidad.**
  Porcentaje de pacientes con una enfermedad que mueren a causa de ella.
- **Tasa de respuesta.**
  Porcentaje de pacientes que muestran alguna señal de mejoría después de una intervención.
- **Tasa de remisiones.**
  Porcentaje de pacientes que entran en una fase en la que la enfermedad deja de ser detectable.
- **Tasa de recurrencia.**
  Porcentaje de pacientes que vuelven a tener la enfermedad después de un período libre de ella.

More 'malignant' than cancer? Five-year survival following a first admission for heart failure

Pronóstico en IC

- ¿Qué le diremos al paciente?

- ¿Qué hacemos por el paciente?

Factores prónosticos IC

- Parámetros de situación funcional

  NYHA

  Test de la marcha
- Parámetros eco-cardiográficos
- Parámetros clínicos y analíticos
- Etiológicos y co-morbilidad
- Modelos predictivos
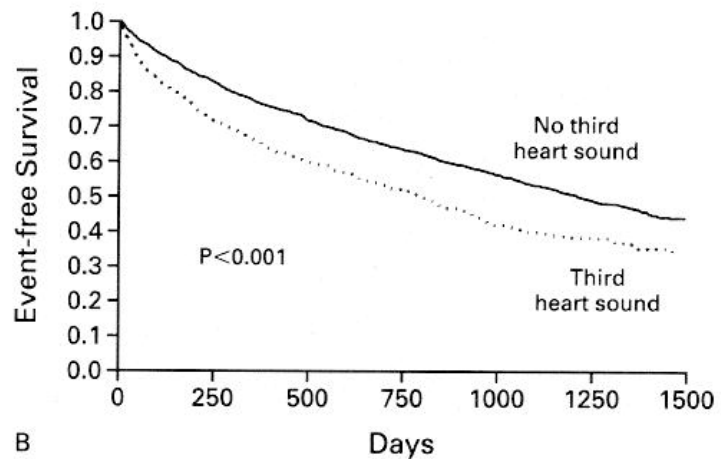- Especialistas y programas

Prognostic Importance of Elevated Jugular Venous Pressure and a Third Heart Sound in Patients with Heart Failure

[Original Articles]

Drazner, Mark H.; Rame, J. Eduardo; Stevenson, Lynne W.; Dries, Daniel L.
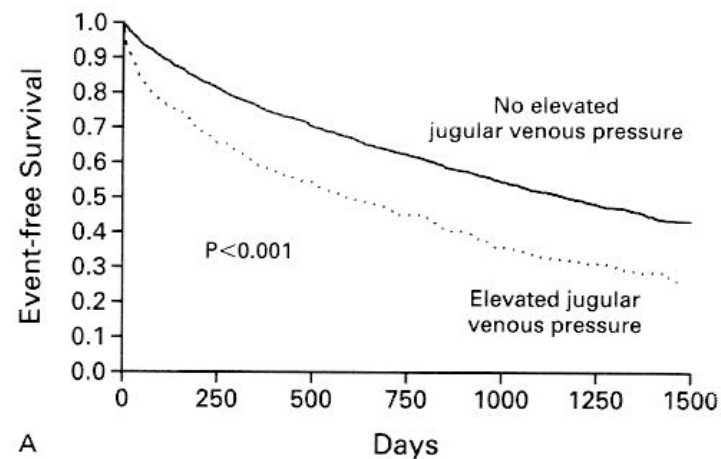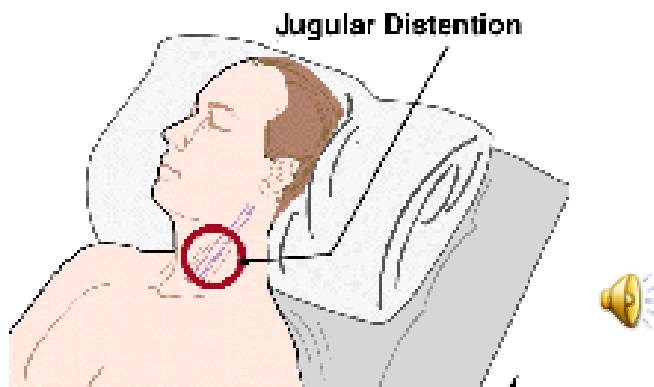
National Academy of Clinical Biochemistry Laboratory Medicine Practice Guidelines: Clinical Utilization of Cardiac Biomarker Testing in Heart Failure

Selected Biochemical Markers Currently Available or Under Study for Clinical Diagnosis, Management, and Risk Stratification of Heart Failure

Standard laboratory markers

Sodium

Blood urea nitrogen

Serum creatinine

Hemoglobin

Leukocyte count

Total lymphocyte count

Serum albumin

Total bilirubin

Uric acid

Red blood cell distribution width

Neurohormones
  Catecholamines (norepinephrine, epinephrine)
  Renin, ACE activity, angiotensin II, and aldosterone
  Natriuretic peptides (ANP, BNP, C-type, N-terminal proANP, N-terminal proBNP, mid-regional pro-ANP)
  Endothelin-1
  Vasopressin/copeptin
  Cardiotrophin-1
  Novel vasodilators (adrenomedullin and mid-regional pro-adrenomedullin, urotensin-II, urocortin)
Inflammatory biomarkers
  High-sensitivity C-reactive protein
  Myeloperoxidase
  Galectin-3
  Fatty acid binding protein
  Soluble ST2 receptor
  Tumor necrosis factor-alpha (TNF-α) and receptors
  Interleukin-6 (IL-6)
  Growth differentiation factor 15 (GDF-15)
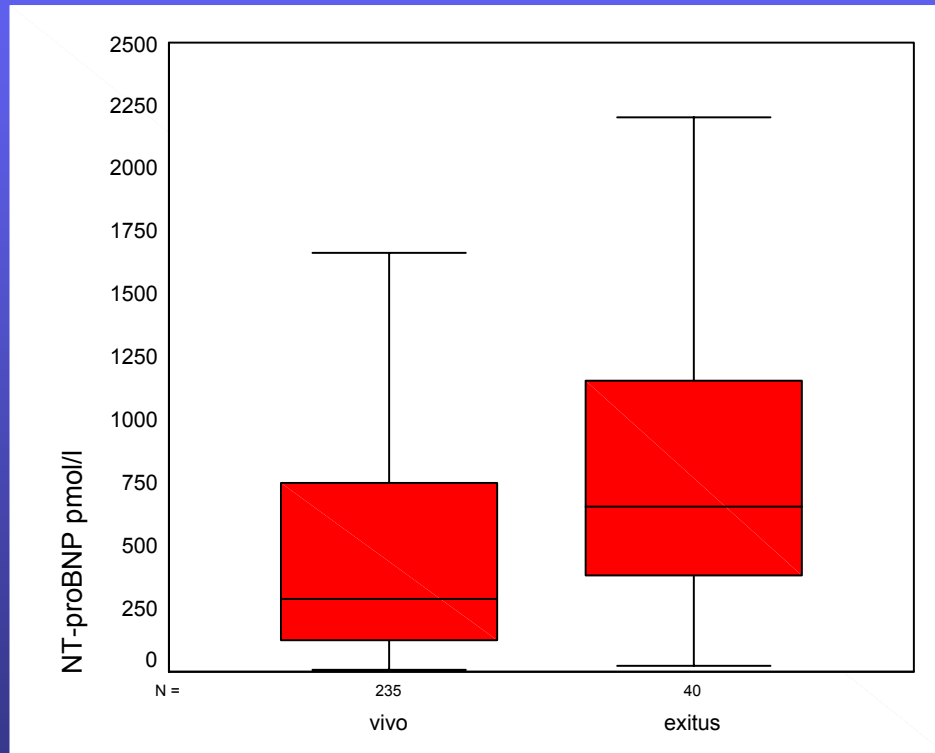 Osteopontin

Metabolic biomarkers
  Leptin
  Adiponectin
  Ghrelin
  Apelin
  Insulin-like growth factor-1 (IGF-1)
Other miscellaneous biomarkers
  G-protein coupled receptor kinase-2 (GRK-2)
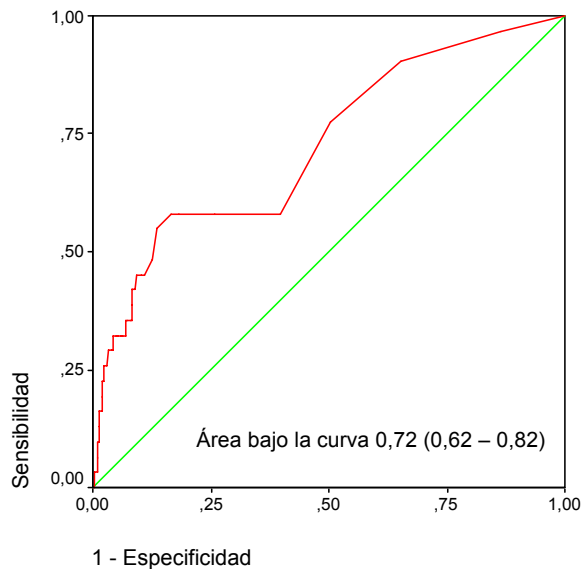 Cardiac troponin I or troponin T
  Myotrophin
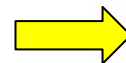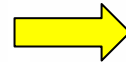
Mortalidad a los 3 meses del alta y niveles de NT-ProBNP al ingreso

Cifras >3000 pg, riesgo exitus x 4,5
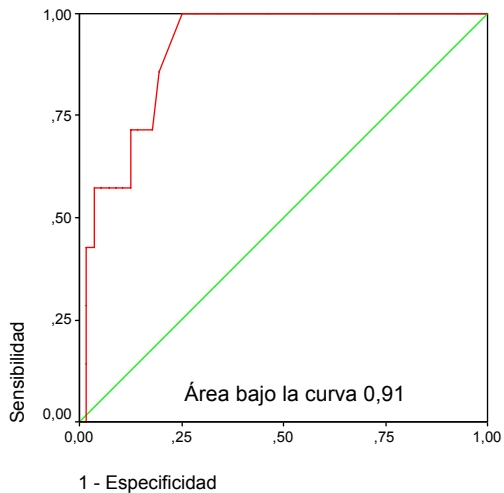
Tesis doctoral. M Villalonga. Utilidad de los marcadores en IC

Curva ROC. Valores troponina I en IC según mortalidad

Área bajo la curva 0,72 (0,62 – 0,82)

1 - Especificidad

Curva ROC. Valores troponina I ng/ml en IC con FE deprimida

Área bajo la curva 0,91

1 - Especificidad

Curva ROC. Valores troponina I ng/ml en IC con FESC

Área bajo la curva 0,68

1 - Especificidad
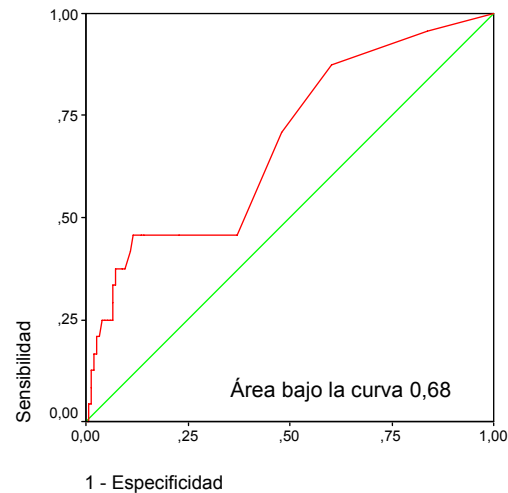
NT-proBNP testing for diagnosis and short-term prognosis in acute destabilized heart failure: an international pooled analysis of 1256 patients

The International Collaborative of NT-proBNP Study

James L. Januzzi[1]*[†], Roland van Kimmenade[2][†], John Lainchbury[3], Antoni Bayes-Genis[4], Jordi Ordonez-Llanos[5], Miguel Santalo-Bel[6], Yigal M. Pinto[2], and Mark Richards[3]

Table 3 Top five candidate predictors of mortality in subjects with acute HF, based on 100 bootstrap replications

Factor	Number of replications out of 100 in which factor selected
A	
NT-proBNP >5180 pg/mL	100
Age	89
Creatinine	73
Haemoglobin	72
Paroxysmal nocturnal dyspnoea	64
B	
cTnT > 0.3 ng/mL	99
NT-proBNP > 5180 pg/mL	91
Haemoglobin	86
Age	72
Creatinine	69

Table 4 Independent predictors of 76-day mortality among those with acute HF

Predictor	Odds ratio	95% CI	P-value
NT-proBNP >5180 pg/mL	5.2	2.2–8.1	<0.001
Troponin T > 0.03 ng/mL[a]	3.4	1.6–5.2	<0.001
Haemoglobin	0.92	0.87–0.97	0.006

Neither age nor NYHA classification was independent predictor of short-term death in the presence of NT-proBNP results.

[a]Troponin T results missing in 48 (6.7%) subjects.

Papers

How well does B-type natriuretic peptide predict death and cardiac events in patients with heart failure: systematic review

J A Doust, E Pietrzak, A Dobson, P P Glasziou

What is already known on this topic

Factors shown to be predictors of mortality in heart failure are increasing age, a history of diabetes mellitus or renal dysfunction, higher New York Heart Association class, lower left ventricular ejection fraction, lower sodium concentrations, lower body mass index, lower blood pressure, the presence of ankle oedema, and lower quality of life scores

The clinical assessment of prognosis in heart failure is difficult, however, and none of the above factors are strong predictors of survival or cardiovascular events

What this study adds

B-type natriuretic peptide is a strong prognostic indicator for patients with heart failure at all stages of disease and seems to be a better predictor of survival than many traditional prognostic indicators, such as New York Heart Association class, serum creatinine, and possibly left ventricular ejection fraction

The relative risk of death increases by about 35% for each 100 pg/ml increase in BNP in patients with heart failure patients

Raised BNP values also predict survival in patients not known to have heart failure, with the risk doubled in patients with a BNP value > 20 pg/ml

HTA

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25 YEARS OF EXCELLENCE

ALBERTA HERITAGE FOUNDATION FOR MEDICAL RESEARCH

Prognostic value of B-type natriuretic peptide for congestive heart failure

TN52   November 2005

Overall, at this time, based on the available evidence, the use of BNP as a prognostic indicator in relation to other prognostic indicators requires more information before this test can be routinized within the clinical laboratory. BNP as a prognostic indicators should be revisited when more research evidence becomes available.

N-terminal brain natriuretic peptide, but not anemia, is a powerful predictor of mortality in advanced heart failure.
J Card Fail. 2005 Jun;11(5 Suppl):S47-53

Cardiac troponin I, a possible predictor of survival in patients with stable congestive heart failure.
Can J Cardiol. 2005 Jan;21(1):

MORTALIDAD POSTERIOR PRIMERA HOSPITALITZACIÓN

Edad	Indice de Charlson							
	Hombres				Mujeres			
	0	1	2	≥3	0	1	2	≥3
25-49	12.9	14.0	20.8	31.0	7.6	10.3	10.3	26.7
50-64	15.2	20.1	22.8	35.7	11.6	17.6	27.9	33.9
65-74	21.1	25.7	34.9	45.4	16.3	20.8	28.3	41.5
≥75	36.3	39.6	48.9	60.7	31.4	38.0	46.3	55.8

Modificado de Jong et al. Arch Intern Med 2002

Global: 32.6% al año

Modelos predictivos

- Effect model

- Heart failure Survival Score

- Seattle Heart Failure Model

Conventional (U.S) units Score	
Age (year)	
Respiratory Rate (breaths/min) (minimal 20;maximal 45)	
Systolic blood pressure (mmHg)	Select one ▾
Blood Urea Nitrogen (maximal, 60 mg/dL)	
Sodium Concentration <136 mEq/L	○ Yes ○ No
Cerebrovascular Disease	○ Yes ○ No
Dementia	○ Yes ○ No
COPD	○ Yes ○ No
Hepatic Cirrhosis	○ Yes ○ No
Cancer	○ Yes ○ No
Hemoglobin <10.0 g/dL (not required for 30-day Score)	○ Yes ○ No
Calculate Clear	
30-day	
One-year	

University of Washington

SEATTLE HEART FAILURE MODEL

Home
About SHFM
Publication
Web Tutorial
Privacy
Links
Windows Version
Macintosh Version
Palm Version

The Seattle Heart Failure Model (SHFM) is a calculator of projected survival at baseline and after interventions for patients with heart failure. SHFM is designed for use by health care providers knowledgeable in cardiac medicine. Patients should only use SHFM when their healthcare providers are present, such as at a doctor's office. Please click the option below that applies to you:

◉ I am a healthcare provider.
◯ I am not a healthcare provider. [Enter]

Seattle Heart Failure Model Calculator

File   Info

Baseline

	1 Year	2 Year	5 Year
Survival	79%	63%	31%
Mortality	21%	37%	69%
Mean life expectancy	3,9	years	

Intervention

	1 Year	2 Year	5 Year
Survival	79%	63%	31%
Mortality	21%	37%	69%
Mean life expectancy	3,9	years	

Clinical

Age: 65
Gender: Male
NYHA Class: 3B
Weight (kg): 80
EF: 20
Syst BP: 120
☑ Ischemic

Medications

☑ ACE-I
☐ Beta-blocker
☐ ARB
☐ Statin
☐ Allopurinol
☐ Aldosterone blocker

Diuretics

Furosemide: 120
Bumetanide: 0
Torsemide: 0
Metolazone: 0
HCTZ: 0

Lab Data

Hgb (g/dL): 13.6
Lymphocyte %: 24
Uric Acid (mg/dL): 6.5
Total Chol (mg/dL): 206
Sodium: 137
☐ QRS > 120 msec

Devices
◉ None
◯ BiV Pacer
◯ ICD
◯ BiV ICD

[Default Values]

Interventions

☑ ACE-I   ☐ ARB   ☐ Beta-blocker

☐ Statin   ☐ Aldosterone blocker

Devices
◉ None
◯ BiV Pacer   ◯ BiV ICD
◯ ICD   ◯ LVAD

Note: Some devices may be disabled if CMS clinical criteria are not met

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BENEFICIOS POTENCIALES

- permiten a los pacientes y familiares tener una expectativa más realista del pronóstico

- ayudan en la planificación en cuanto a la previsión de recursos

- permiten proponer terapias que afecten a la calidad de vida y

- promueven una discusión entre pacientes, familiares y médicos para definir objetivos terapéuticos.

RIESGOS

- las poblaciones pueden ser diferentes a la de los pacientes a quien se aplica

- no se incorporan las preferencias personales, cumplimentación o actitudes

- cuando aparecen nuevos tratamientos no están incluidos en los modelos

- Podría llegar a ocurrir que las "puntuaciones" substituyesen la información-relación medico-enfermo.

Identification of Older Patients with Heart Failure Who May Be Candidates for Hospice Care: Development of a Simple Four-Item Risk Score

Bao C. Huynh, MD, PharmD,* Aleksandr Rovner, MD,[†] and Michael W. Rich, MD[‡]

Table 2. Independent Predictors of 6-Month Mortality

Predictor	N	6-Month Mortality n (%)	Odds Ratio (95% Confidence Interval)	P-Value	Sensitivity %	Specificity %
Serum urea nitrogen, mg/dL						
≥30	104	32 (30.8)	5.78 (2.65–12.66)	<.001	74.4	69.7
<30	177	11 (6.2)				
Systolic blood pressure, mmHg						
<120	31	14 (45.2)	4.81 (1.94–11.91)	.001	32.6	92.9
≥120	251	29 (11.6)				
Peripheral arterial disease						
Present	36	12 (33.3)	3.09 (1.26–7.58)	.01	27.9	90.0
Absent	246	31 (12.6)				
Serum sodium, mEq/L						
<135	34	9 (26.5)	2.27 (0.98–5.27)	.05	20.9	89.5
≥135	248	34 (13.7)				

6-Month Mortality According to the Number of Risk Factors
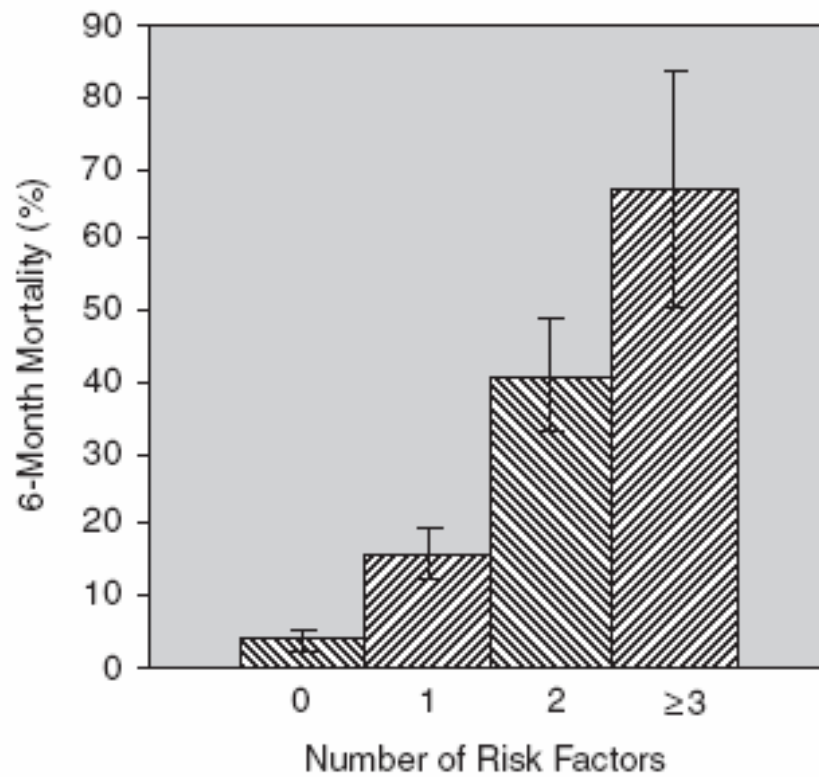
Unidades multidisciplinares de *insuficiencia cardíaca* en medicina interna

Vía clínica para el enfermo con IC

Predicción General para España, próximos días
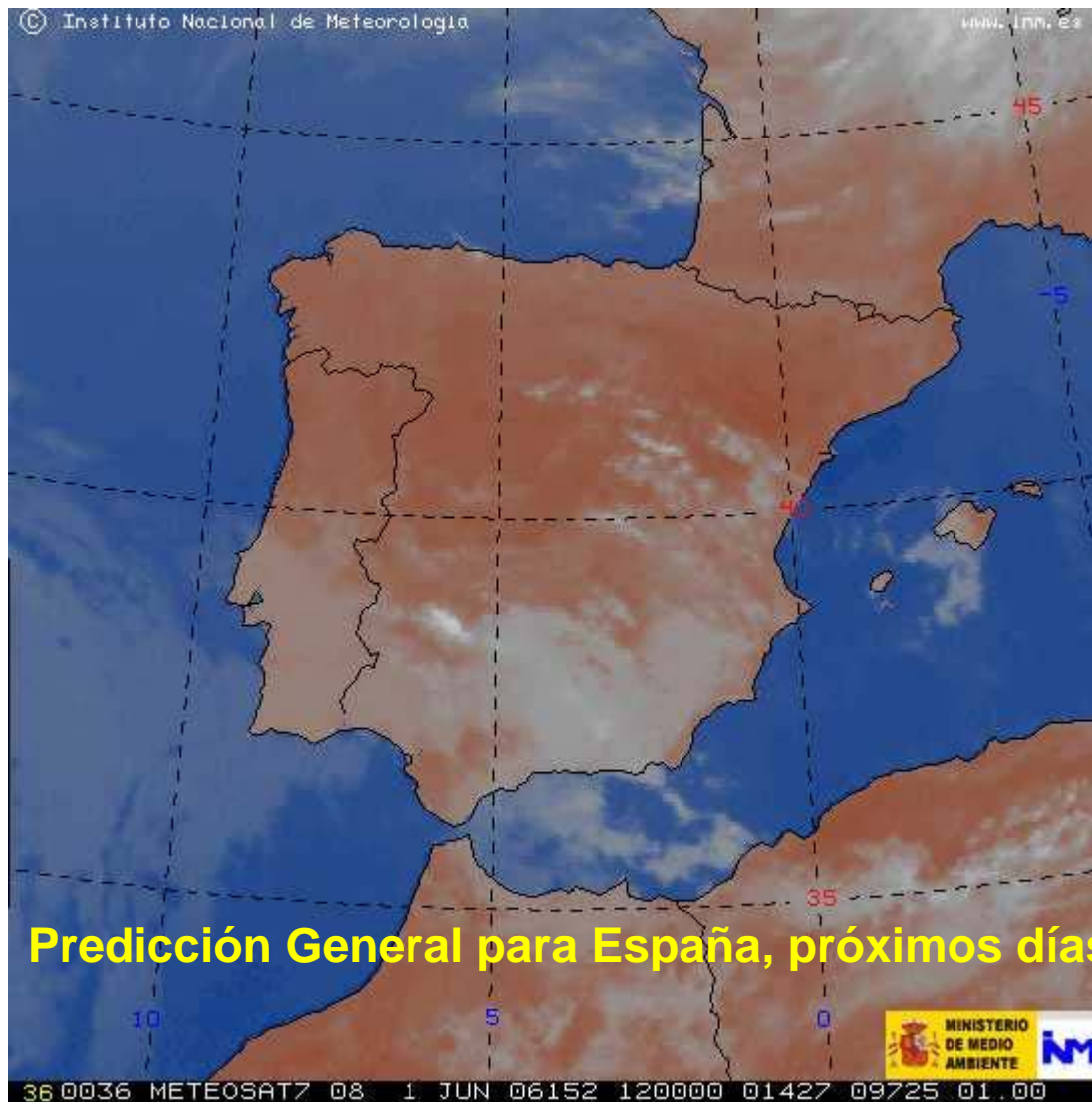
viernes 31 de octubre de 2008
EN LA PENINSULA Y BALEARES, CHUBASCOS DEBILES A MODERADOS
OCASIONALMENTE CON TORMENTA. **ES POSIBLE** QUE SEAN LOCALMENTE
FUERTES EN GALICIA, LITORAL ANDALUZ, ESTRECHO Y BALEARES. POR EL
CONTRARIO SERAN MAS DEBILES Y **MENOS PROBABLES** EN EL ESTE DE
ARAGON, CATALU A Y LEVANTE.