XXXII Congreso Nacional de la SEMI

XIV Congreso de la Sociedad Canaria de Medicina Interna

26-28 Octubre 2011

SEMI
LA VISIÓN GLOBAL DE LA PERSONA ENFERMA

FEMI

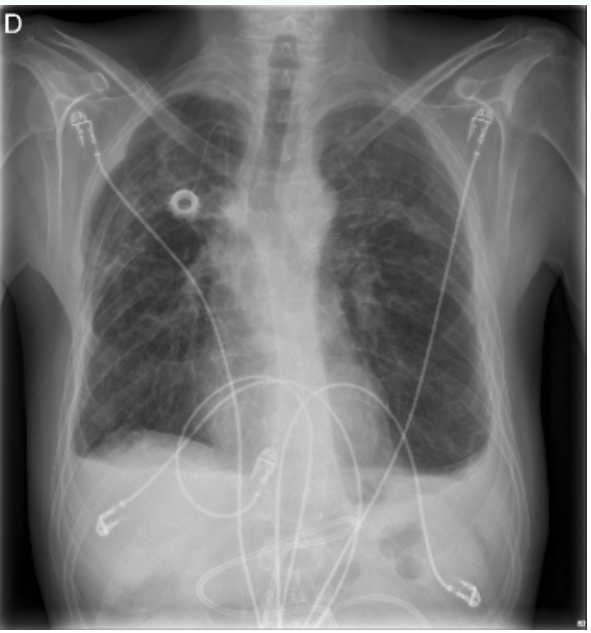
Tratamiento convencional

Dr. José A. Todolí Parra
Servicio de Medicina Interna
Hospital Universitario La Fe. Valencia

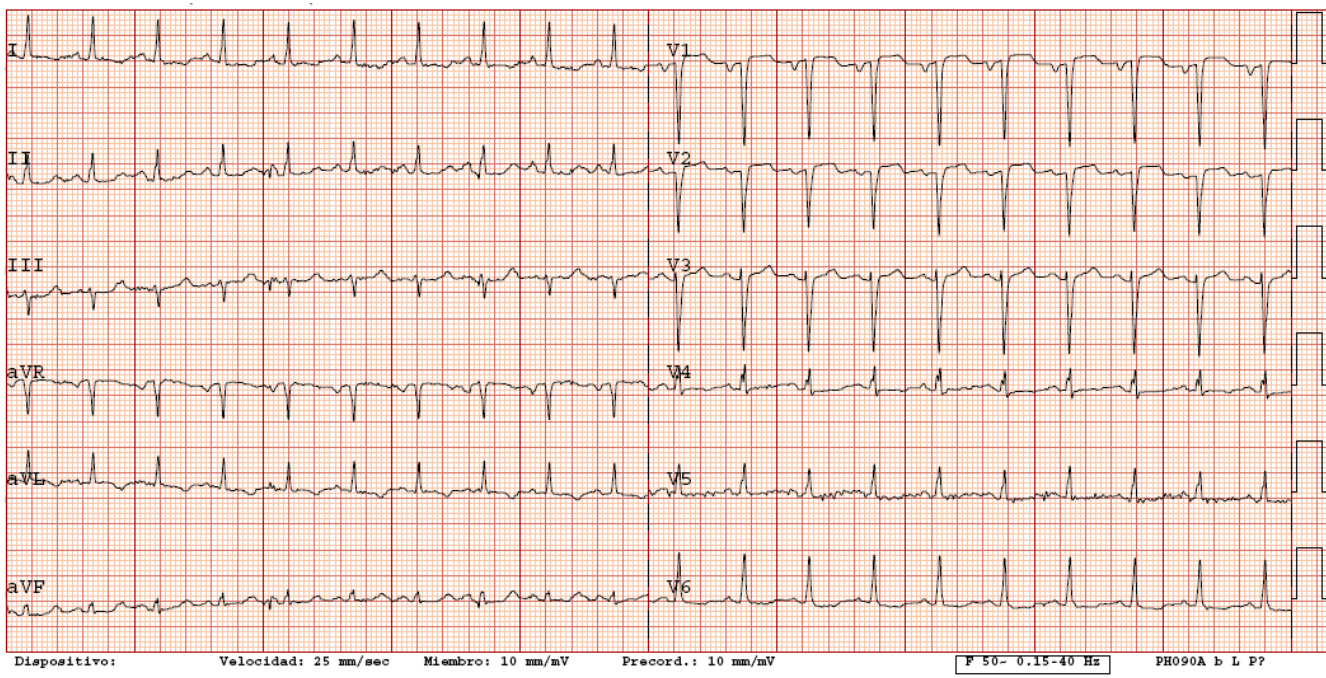
CASO CLINICO

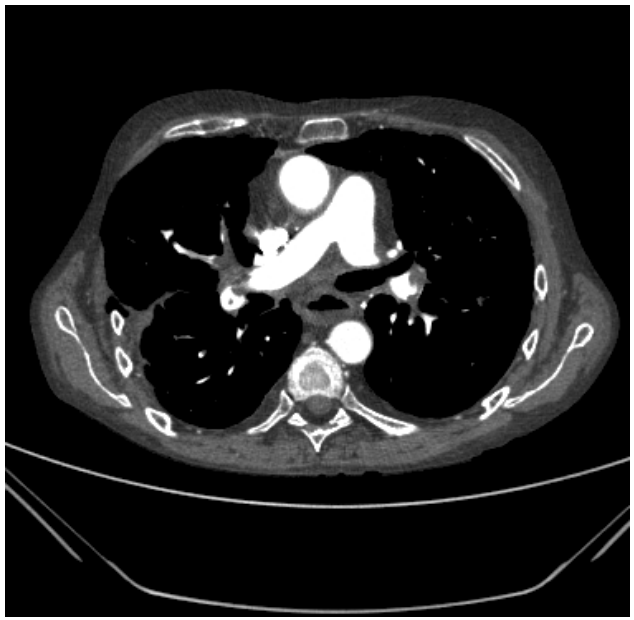
- 50 años, varón. Esclerodermia
- Trasplante cardio-pulmonar 2009. Rechazo primario grado III (Bronquiolitis bilateral), EF III/IV.
- Yeyunostomía de alimentación (gastroparesia, hipertonía pilórica post- vagotomía, esófago esclerodérmico)

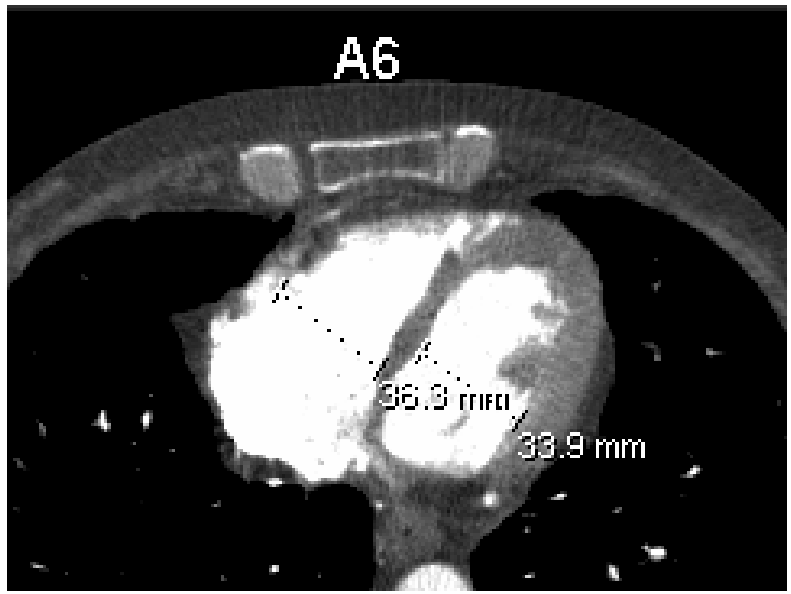
- Consulta por salida sonda yeyunostomía
- Refiere aumento de la disnea basal en los últimos dos días.



Pulso: 123 ppm
TA: 111/81
Tª 35,3 Cº
SatO2: 99%
DIMEROS: 3.492 ng/mL







1. TEP masivo: ramas pulmonares principales, ramas lobares y segmentarias del LSD, LM, LID, língula y LII, secundario a TVP en tronco venoso tibio-peroneo y vena tibial anterior de MID.
2. Afectación pulmonar difusa crónica ya conocida.
3. Esófago esclerodérmico

- RV/LV ratio 1’07
- Shock index: 123/111= 1,1
- PRO-BNP 4.012 pg/mL
- PESI clase IV
- PESI simpl: 2

Mort 30 días 10’9%

Circulation

JOURNAL OF THE AMERICAN HEART ASSOCIATION

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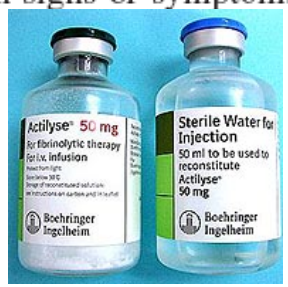
Management of Massive and Submassive Pulmonary Embolism, Iliofemoral Deep Vein Thrombosis, and Chronic Thromboembolic Pulmonary Hypertension : A Scientific Statement From the American Heart Association

Michael R. Jaff, M. Sean McMurtry, Stephen L. Archer, Mary Cushman, Neil Goldenberg, Samuel Z. Goldhaber, J. Stephen Jenkins, Jeffrey A. Kline, Andrew D. Michaels, Patricia Thistlethwaite, Suresh Vedantham, R. James White, Brenda K. Zierler and on behalf of the American Heart Association Council on Cardiopulmonary, Critical Care, Perioperative and Resuscitation, Council on Peripheral Vascular Disease, and Council on Arteriosclerosis, Thrombosis and Vascular Biology

Circulation 2011, 123:1788-1830: originally published online March 21, 2011

We propose the following definition for *massive PE*: Acute PE with sustained hypotension (systolic blood pressure <90 mm Hg for at least 15 minutes or requiring inotropic support, not due to a cause other than PE, such as arrhythmia, hypovolemia, sepsis, or left ventricular [LV] dysfunction), pulselessness, or persistent profound bradycardia (heart rate <40 bpm with signs or symptoms of shock).



We propose the following definition for *submassive PE*: Acute PE without systemic hypotension (systolic blood pressure ≥90 mm Hg) but with either RV dysfunction or myocardial necrosis.

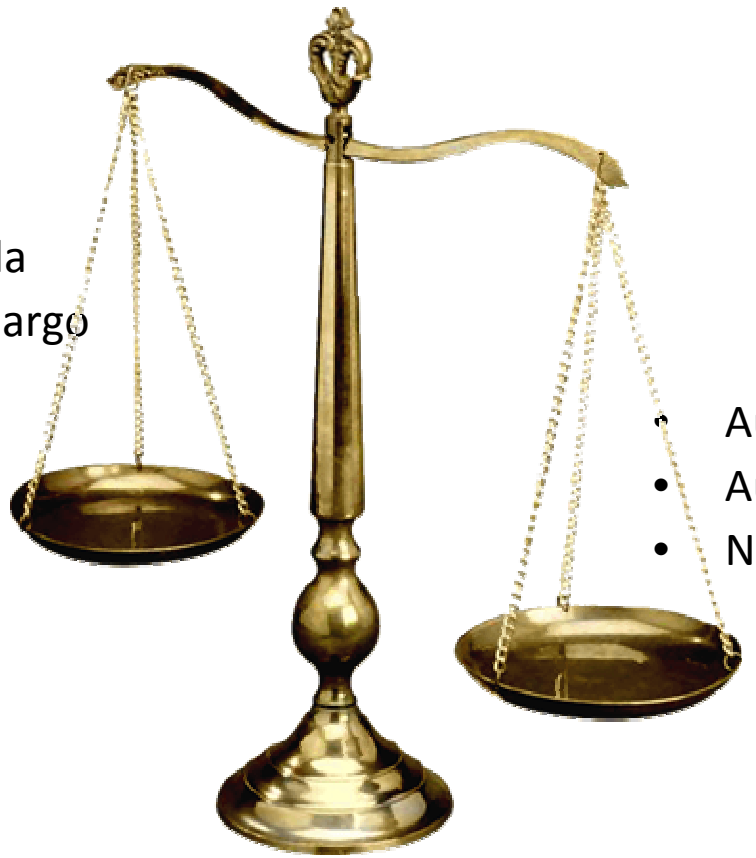
- RV dysfunction means the presence of at least 1 of the following:
  - — RV dilation (apical 4-chamber RV diameter divided by LV diameter >0.9) or RV systolic dysfunction on echocardiography
  - — RV dilation (4-chamber RV diameter divided by LV diameter >0.9) on CT
  - — Elevation of BNP (>90 pg/mL)
  - — Elevation of N-terminal pro-BNP (>500 pg/mL); or
  - — Electrocardiographic changes (new complete or incomplete right bundle-branch block, anteroseptal ST elevation or depression, or anteroseptal T-wave inversion)
- Myocardial necrosis is defined as either of the following:
  - — Elevation of troponin I (>0.4 ng/mL) or
  - — Elevation of troponin T (>0.1 ng/mL)

We propose the following definition for *low-risk PE*: Acute PE and the absence of the clinical markers of adverse prognosis that define massive or submassive PE.

FIBRINOLISIS EN EL EP SUBMASIVO

Debate actual

- Mejoría clínica y hemodinámica rápida
- Mejoría funcional a largo plazo



- Aumento de hemorragias
- Aumento de costes
- No beneficio en mortalidad

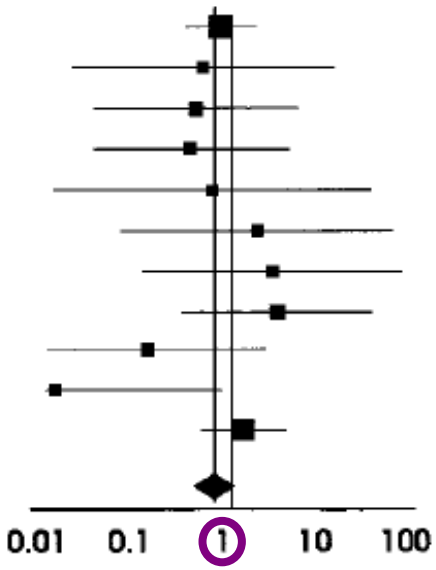
MORTALIDAD EN EL EP SUBMASIVO

Table 6. Mortality Rates for Acute PE From Published Results of Registries and a Publicly Available Database (HCUP-NIS)

				Mortality Rate, %			
Source	Year	N	Follow-Up	Massive PE	Submassive PE	Massive PE Given Lytic	Submassive PE Given Lytic
MAPPET[138]	1997	719	30	NA	9.6	NA	4.7
ICOPER[9]	1999	2284	90	52.4	14.7	46.3	21
RIETE[71,139]	2007	6264	90	9.3	3.0	1.3	7.7
EMPEROR[140]	2008	1840	In-hospital	14.6	3.0	0	9.5
HCUP-2007 NIS[141]	2007	32 263	In-hospital	3.6		NA	

Si consiguiéramos un RRR muy alta, por ej 30 %, el efecto sobre la mortalidad global sería escaso (< 1%)

Study	Thrombolysis	Heparin	OR	95% CI
UPET, 1973	10/82	14/78	0.63	0.26 - 1.53
Tibbutt et al, 1974	0/13	1/17	0.41	0.02 - 10.83
Ly et al, 1978	1/14	2/11	0.35	0.03 - 4.42
Dotter et al, 1979	1/15	3/16	0.31	0.03 - 3.36
Marini et al, 1988	0/20	0/10	0.51	0.01 - 27.68
PIOPED, 1990	1/9	0/4	1.59	0.05 - 47.52
Levine et al, 1990	1/33	0/25	2.35	0.09 - 60.24
Dalla-Volta et al, 1992	3/20	1/16	2.65	0.25 - 28.24
Goldhaber et al, 1993	0/46	4/55	0.12	0.01 - 2.35
Jerjes-Sanchez et al, 1995	0/4	4/4	0.01	0.00 - 0.77
Konstantinides et al, 2002	8/118	7/138	1.36	0.48 - 3.87
Total	**25/374**	**36/374**	**0.67**	**0.40 - 1.12**



Sólo 5 incluyeron EP masivo

Seguimientos 3-30 días

Wan et al. Circulation 2004; 110: 744-749

TABLE 3. Major and Nonmajor Bleeding and Intracranial Hemorrhage in Patients Randomized to Thrombolysis Compared With Heparin

Outcome	Thrombolysis, n/N (%)	Heparin, n/N (%)	OR (95% CI)
Major bleeding	34/374 (9.1)	23/374 (6.1)	1.42 (0.81–2.46)*
Nonmajor bleeding	53/233 (22.7)	22/221 (10.0)	2.63 (1.53–4.54)†
Intracranial hemorrhage	2/374 (0.5)	1/374 (0.3)	1.04 (0.36–3.04)‡

*Heterogeneity: $P=0.92$.
†Heterogeneity: $P=0.53$.
‡Heterogeneity: $P=1.00$.

NNH = 8

TABLE 4. Subgroup Analysis of Trials That Included Major (Hemodynamically Stable) Pulmonary Embolism Compared With Those That Excluded Patients With Major Pulmonary Embolism

	Trials That Included Patients With Major PE			Trials That Excluded Patients With Major PE			
Outcome	Thrombolysis, n/N (%)	Heparin, n/N (%)	OR (95% CI)	Thrombolysis, n/N (%)	Heparin, n/N (%)	OR (95% CI)	*P* for Heterogeneity Between Subgroups
Recurrent PE or death	12/128 (9.4)	24/126 (19.0)	0.45 (0.22–0.92)	13/246 (5.3)	12/248 (4.8)	1.07 (0.50–2.30)	0.10
Recurrent PE	5/128 (3.9)	9/126 (7.1)	0.61 (0.23–1.62)	5/246 (2.0)	7/248 (2.8)	0.76 (0.28–2.08)	0.71
Death	8/128 (6.2)	16/126 (12.7)	0.47 (0.20–1.10)	8/246 (3.3)	6/248 (2.4)	1.16 (0.44–3.05)	0.13
Major bleeding	28/128 (21.9)	15/126 (11.9)	1.98 (1.00–3.92)	6/246 (2.4)	8/248 (3.2)	0.67 (0.24–1.86)	0.12

PE indicates pulmonary embolism.

Beneficio sólo en los 5 estudios que incluyeron pacientes con EP masivo

NNT = 10

Resumen

- La fibrinolisis en el EP submasivo...
  - No aumenta el sangrado mayor
  - Aumenta del sangrado menor
  - No mejora la mortalidad

Pero... ¿La mortalidad es el único objetivo relevante del tratamiento de la EP?

Table 4. Summary of PAP Measurements Made in the First Hours After Treatment in Placebo-Controlled Randomized Trials of Fibrinolysis for Acute PE

						Fibrinolytic Treatment, mm Hg		Placebo, mm Hg	
First Author/ Study	Year	Lytic Agent	No. Given Lytic	No. Given Placebo	Timing of Second Measurement, h	Mean PAP (Pre)	Mean PAP (Post)	Mean PAP (Pre)	Mean PAP (Post)
Tibbut[126]	1974	SK	11	12	72	30.8	18.5	34.3	29.6
PIOPED[127]	1990	tPA	9	4	1.5	28	25	33	33
Konstantinides[128]	1998	tPA	27	13	12	34	22	29	27
NHLBI[129]	1973	UK	82	78	24	26.2	20	26.1	25
Dalla-Volta[124]	1992	tPA	20	16	2	30.2	21.4	22.3	24.8
Mean (SD)						29.8 (3.0)	21.4 (2.4)	28.9 (4.9)	27.9 (3.5)

PAP indicates pulmonary artery pressure; PE, pulmonary embolism; Pre, before treatment; Post, after treatment; SK, streptokinase; PIOPED, Prospective Investigation Of Pulmonary Embolism Diagnosis; tPA, tissue-type plasminogen activator; NHLBI, National Heart, Lung, and Blood Institute; UK, urokinase; and SD, standard deviation.

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Table 7. Pooled Data From Studies That Reported Right Ventricular Systolic Pressure Measurements Made Several Months or More After Acute PE

	Heparin				Fibrinolytic			
Author	Baseline PASP, mm Hg	Follow-Up PASP, mm Hg	% Change	N	Baseline PASP, mm Hg	Follow-Up PASP, mm Hg	% Change	N
De Soyza[142] and Schwarz[143]	47±13	33±7	30±24	13	61±14	24±5	61±22	7
Sharma[144]	27±2	22±1.4	17±7	11	28±1.9	17±1.3	39±7	12
Kline[145]	23±21	17±18	26±99	144	40±21	20±14	50±61	18
Mean/total	32±12	24±9	25±43	168	43±12	20±7	50±30	37

These data suggest that compared with heparin alone, heparin plus fibrinolysis yields a significant favorable change in RVSP and pulmonary arterial pressure incident between the time of diagnosis and follow-up.

¡SÓLO 4 ESTUDIOS!

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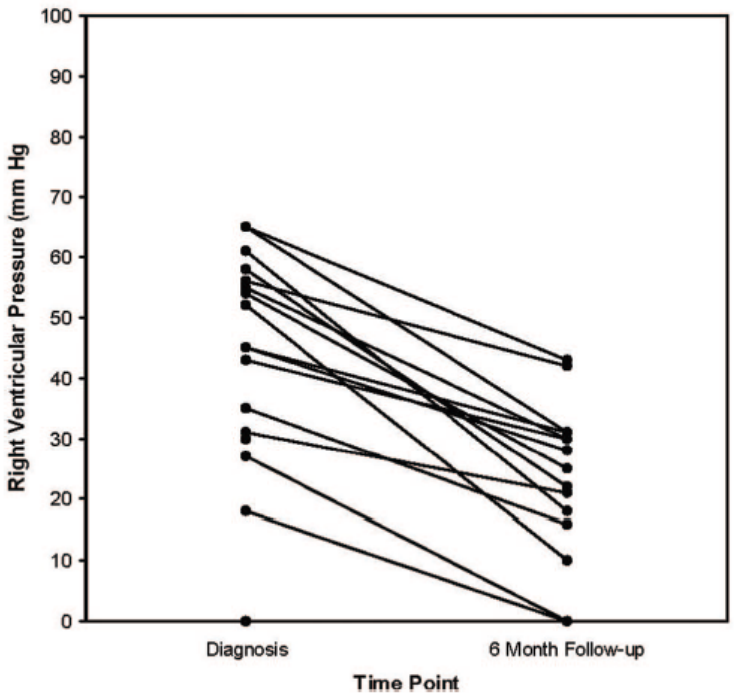
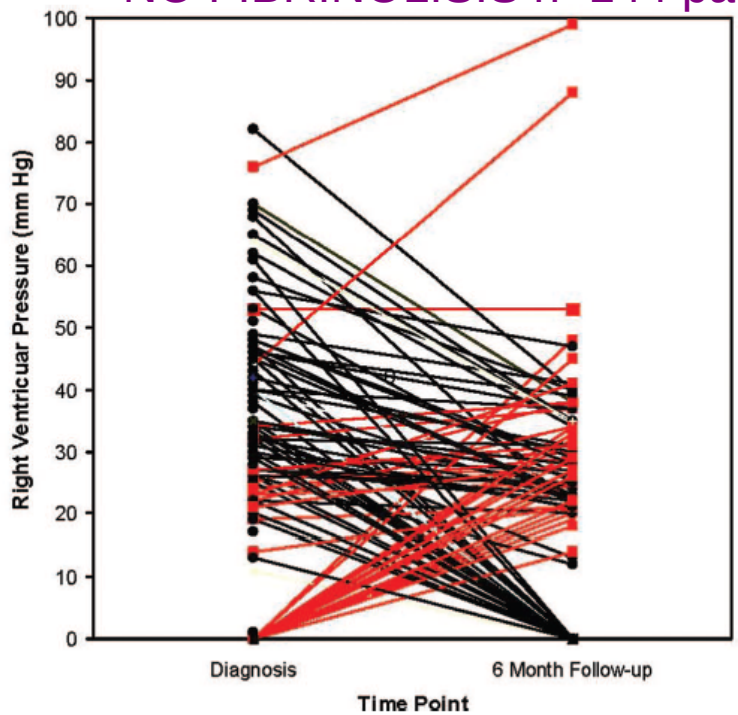
FIBRINOLISIS n= 18 pac



NO FIBRINOLISIS n=144 pac



Kline JA, Steuerwald MT, Marchick MR, Hernandez-Nino J, Rose GA. Prospective evaluation of right ventricular function and functional status 6 months after acute submassive pulmonary embolism: frequency of persistent or subsequent elevation in estimated pulmonary artery pressure. *Chest*. 2009;136:1202–1210.

N = 162 pacientes, seguidos 6 meses

3 % EP masivo
97% EP no-masivo

Clinical Predictors for Fatal Pulmonary Embolism in 15 520 Patients With Venous Thromboembolism

Findings From the Registro Informatizado de la Enfermedad TromboEmbolica venosa (RIETE) Registry

Silvy Laporte, PhD; Patrick Mismetti, MD, PhD; Hervé Décousus, MD; Fernando Uresandi, MD, PhD; Remedios Otero, MD, PhD; Jose Luis Lobo, MD, PhD; Manuel Monreal, MD, PhD; the RIETE Investigators*

1. Patient Characteristics (N=15 520)

Men, n (%)	7720 (49.7)
Age, mean±SD, y	66.3±16.9
Age >75 years, n (%)	5800 (37.4)
Body-mass index >30 kg/m^2, n (%)*	2739 (27.2)
History of venous thromboembolism, n (%)	2471 (15.9)
Varicose veins, n (%)†	2304 (20.2)
Cancer, n (%)	3172 (20.4)
Cardiac or respiratory disease, n (%)	2611 (16.8)
Recent surgery, n (%)	2006 (12.9)
Immobilisation >4 days for neurological disease, n (%)	567 (3.6)
Type of index venous thromboembolism, n (%)	
Symptomatic distal deep-vein thrombosis	2109 (13.6)
Symptomatic proximal deep-vein thrombosis	6899 (44.4)
Symptomatic non-massive pulmonary embolism	6264 (40.4)
Symptomatic massive pulmonary embolism‡	248 (1.6)

*5444 missing values; †456 missing values.
‡Massive pulmonary embolism was defined as pulmonary embolism with systolic blood pressure <90 mm Hg.

Table 3. Clinical Predictors for Fatal Pulmonary Embolism Within 3 Months (Multivariable Analysis, Training and Validation Models)*

	Training Model (n=10 346)			Validation Model (n=5174)		
	Odds Ratio	95% Confidence Interval	*P*	Odds Ratio	95% Confidence Interval	*P*
Index venous thromboembolism						
Distal/proximal deep-vein thrombosis	1	...		1	...	
Symptomatic nonmassive pulmonary embolism	5.66	3.79–8.44	<0.0001	5.42	3.19–9.20	<0.0001
Symptomatic massive pulmonary embolism	16.3	8.50–31.4		17.5	7.45–41.2	
Immobilisation >4 days for neurological disease	2.80	1.61–4.86	0.0001	4.90	2.71–8.84	<0.0001
Age >75 years	2.31	1.67–3.21	<0.0001	2.54	1.58–3.81	<0.0001
Cancer	2.40	1.72–3.26	<0.0001	2.04	1.29–3.21	0.0022
Cardiac or respiratory disease†	1.89	1.35–2.65	0.0001	1.34	0.84–2.16	0.22
Recent surgery†	0.53	0.29–0.96	0.034	0.54	0.23–1.25	0.15

*The analysis was adjusted for treatment duration (< or >3 months).
†Not considered in the simplified model because of its low predictive value in the validation model.

La Fe
Hospital Universitari i Politècnic

Innovación y experiencia al servicio del paciente

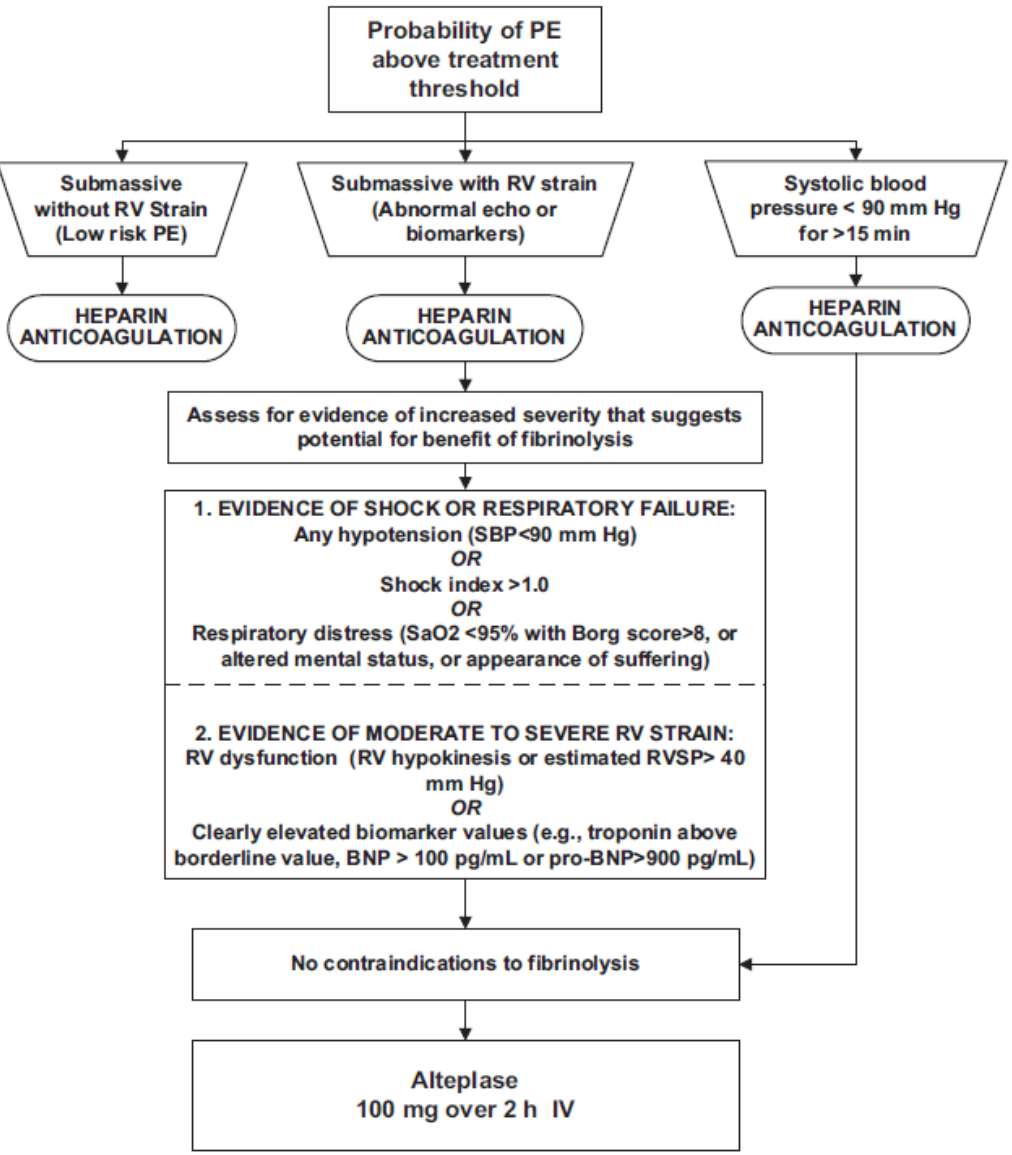
30%

EP DE BAJO RIESGO

3%

EP MASIVO

- Informar al paciente de forma veraz:
  - Mejorará más rápido
  - Tendrá menos riesgo cardiaco a medio plazo
  - Tiene más riesgo de hemorragia aguda (el doble); la hemorragia puede ser grave (1%)



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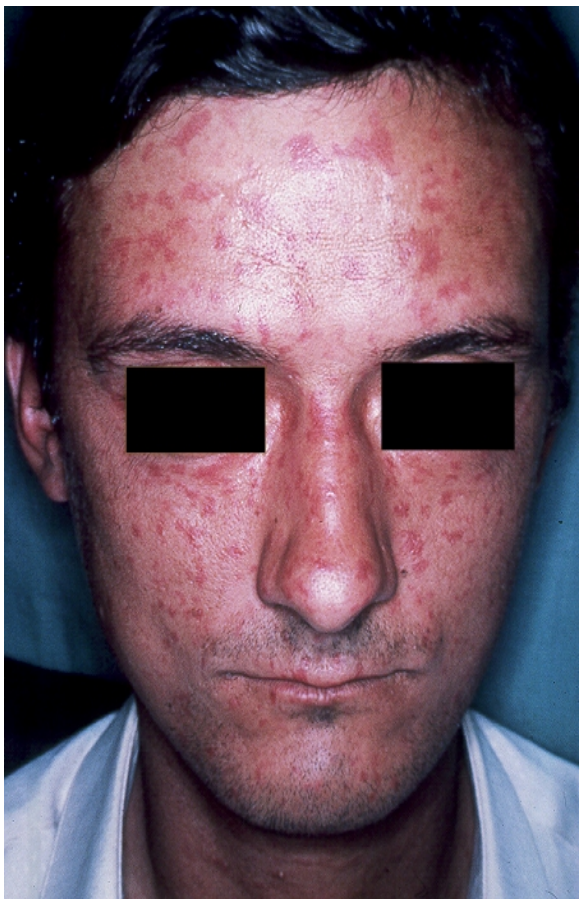
Recommendations for Fibrinolysis for Acute PE

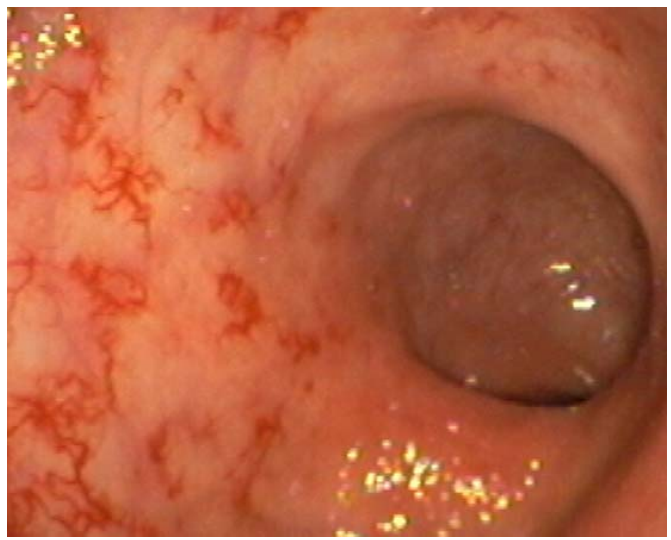
1. **Fibrinolysis is reasonable for patients with massive acute PE and acceptable risk of bleeding complications *(Class IIa; Level of Evidence B).***
2. **Fibrinolysis may be considered for patients with submassive acute PE judged to have clinical evidence of adverse prognosis (new hemodynamic instability, worsening respiratory insufficiency, severe RV dysfunction, or major myocardial necrosis) and low risk of bleeding complications *(Class IIb; Level of Evidence C).***
3. **Fibrinolysis is not recommended for patients with low-risk PE *(Class III; Level of Evidence B)* or submassive acute PE with minor RV dysfunction, minor myocardial necrosis, and no clinical worsening *(Class III; Level of Evidence B).***

Fibrinolisis en el EP submasivo

Nuestro paciente....



- Enoxaparina 60 mg cada 12 h
- Buena evolución



•“A los mayores les gustan las cifras. Cuando se les habla de un nuevo amigo, jamás preguntan sobre lo esencial del mismo. Nunca se les ocurre preguntar: “¿Qué tono tiene su voz? ¿Qué juegos prefiere? ¿Le gusta coleccionar mariposas?” Pero en cambio preguntan: “¿Qué edad tiene? ¿Cuántos hermanos? ¿Cuánto pesa? ¿Cuánto gana su padre?” Solamente con estos detalles creen conocerle.”

Capítulo IV