Fragilitat, estratificació de risc i maneig en la síndrome coronària aguda en la gent gran: un repte inajornable

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La gent gran: un problema real

- Escassa representació en assaigs clínics.
- Pacients ancians en els AC poc representatius dels de la “vida real”.

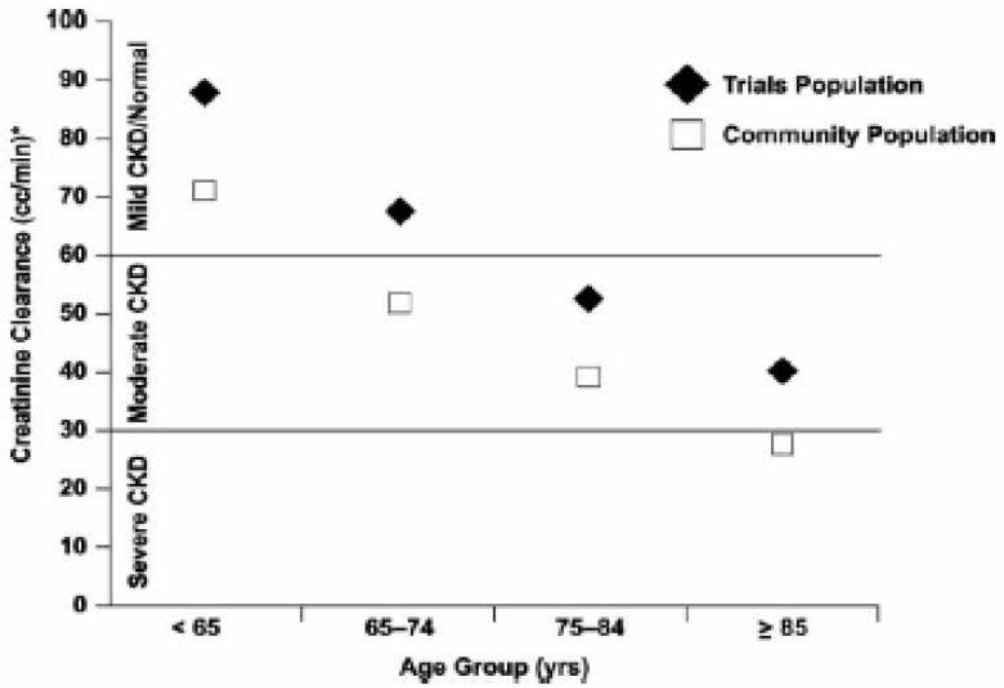

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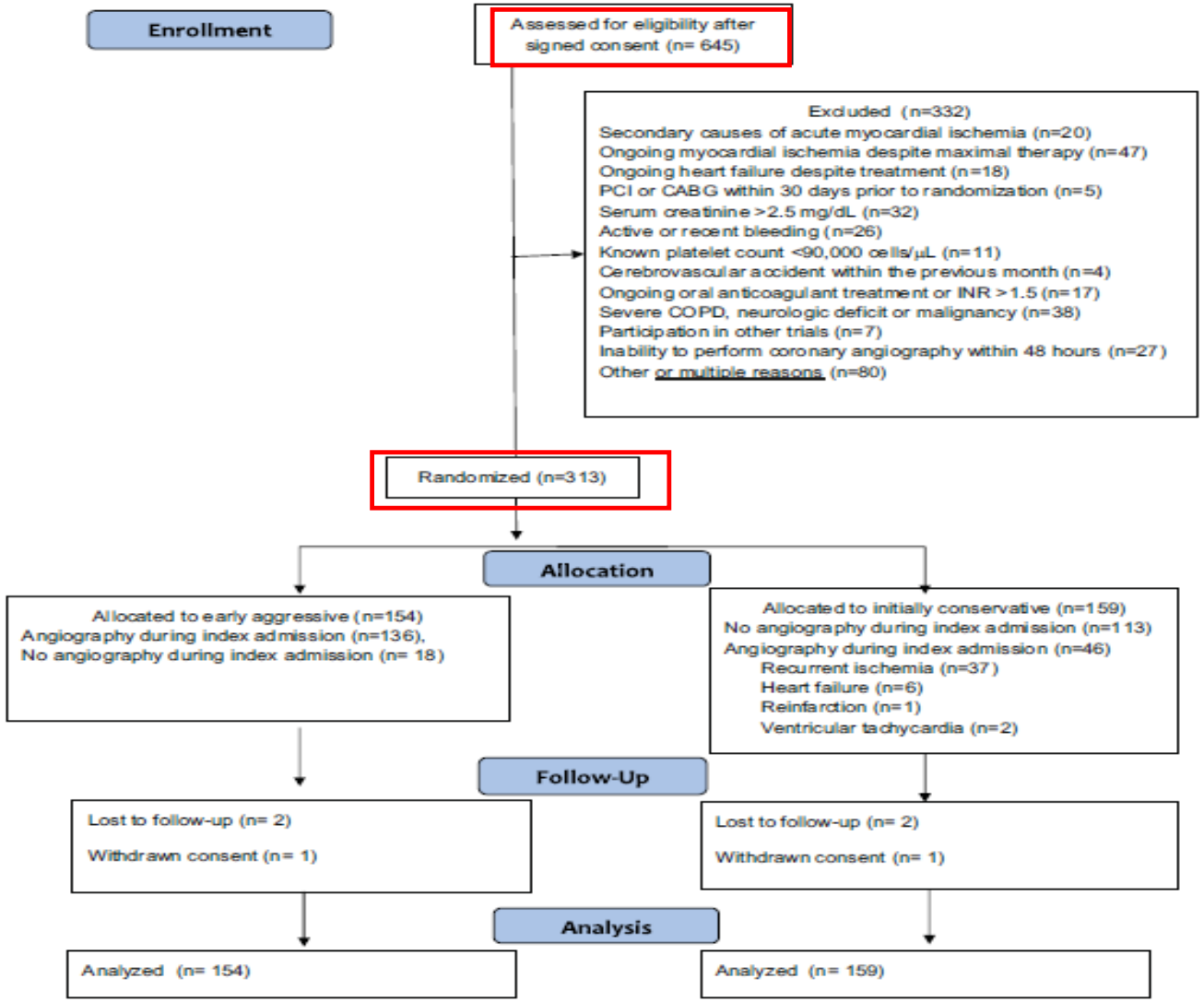
Table 1. Baseline Characteristics and Rates of Revascularization of the Study Participants

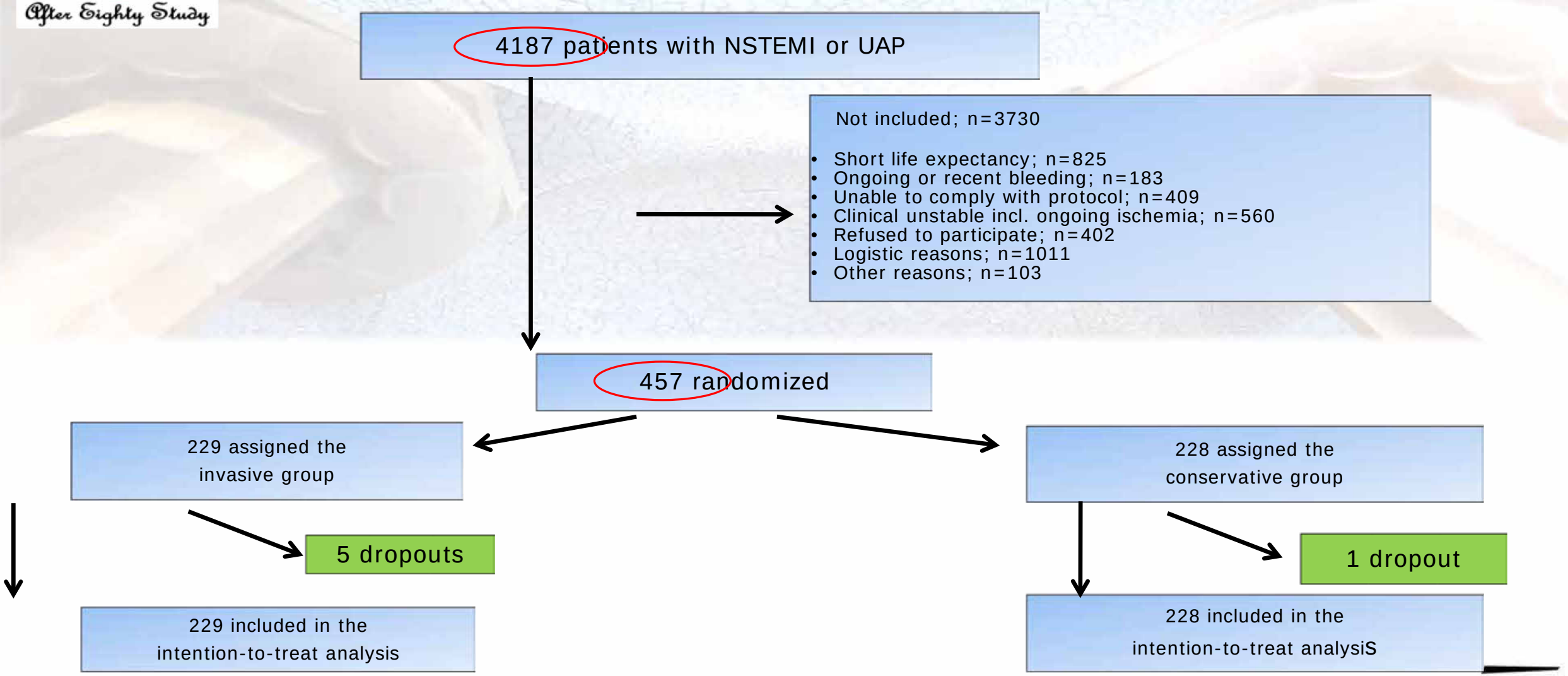
Characteristic	FRISC-II	TRUCS	TIMI-18	VINO	RITA-3	ISAR-COOL	ICTUS
Enrollment period	1996–1998	1997–1998	1997–1999	1998–2000	1997–2001	2000–2002	2001–2003
Invasive/conservative patients, n	1222/1234	76/72	1114/1106	64/67	895/915	203/207	604/596
Age, yrs (mean)	66*	62	62	66	62	70*	62*
Women, %	30	27	34	39	38	33	27
Diabetes, %	12	29	28	25	13	29	14
Prior myocardial infarction, %	22	27†	39	26	28	23	23
Current smokers, %	30	31	NA	NA	32	21	41
Statin at randomization, %	10	21	52‡	43‡	45	NA	27
Statin at follow-up, %	55	NA	NA	NA	80	85	92
Thienopyridine with PCI, %	100§	NA	NA	100§	96	100¶	100‖
Elevated troponin at randomization, %	55	NA	54	100	75	67	100
Hours to angiography, median**	96/408	48/120††	22/79	6.2/1,464	48/1,020	2.4/86	23/283‡‡
Glycoprotein IIb/IIIa inhibitor, type	NA	NA	Tirofiban	NA	NA	Tirofiban	Abciximab
Invasive undergoing PCI, %	10	95	94	0	25	100¶	93
Conservative undergoing PCI, %	NA	96	59	0	25	100¶	69
Conservative not undergoing PCI, %	NA	NA	99	0	0	100¶	0
Coronary stent use with PCI, %**	62/69	85/85	83/86	44/50	88/90	87/92	88/88
Overall PCI or CABG, %**	78/45	100/61	64/45	73/39	61/38	78/72	79/54
Relative difference in revascularization between treatment arms, %	73	64	42	87	61	8	46

Bavry AA, Kumbhani DJ, Rassi AT et al. Benefit of early invasive therapy in acute coronary syndromes: a meta-analysis of contemporary randomized clinical trials. J Am Coll Cardiol 2006;48:1319 –1325. 323.



Savonitto S, Cavallini C, Petronio AS et al; Italian Elderly ACS Trial Investigators. Early aggressive versus initially conservative treatment in elderly patients with non-ST-segment elevation acute coronary syndrome:a randomized controlled trial. JACC Cardiovasc Interv. 2012;5:906-16.

Inclusion flow-chart



Tegn N, Abdelnoor M, Aaberge L et al; After Eighty study investigators. Invasive versus conservative strategy in patients aged 80 years or older with non-ST-elevation myocardial infarction or unstable angina pectoris (After Eighty study): an open-label randomised controlled trial. Lancet. 2016;387(10023):1057-65.

Introducció

- Heterogeneitat evident en la velocitat d'envelliment.
- Variables associades a l'envelliment (comorbilitats, fragilitat, estat funcional i cognitiu) rarament avaluades en la SCA en la pràctica clínica cardiològica habitual.
- Escassa evidència sobre com ha d'influir l' edat "biològica" en la presa de decisions.

Recommendations for the management of elderly patients with non-ST-elevation acute coronary syndromes

Recommendations	Class[a]	Level[b]	Ref.[c]
It is recommended to tailor antithrombotic treatment according to bodyweight and renal function.	I	C	
Elderly patients should be considered for an invasive strategy and, if appropriate, revascularization after careful evaluation of potential risks and benefits, estimated life expectancy, comorbidities, quality of life, frailty and patient values and preferences.	IIa	A	408, 414–418
Adjusted dosing regimens of beta-blockers, ACE inhibitors, ARBs and statins should be considered to prevent side effects.	IIa	C	

Management of Acute Coronary Syndromes in Patients Presenting without Persistent ST-Segment Elevation of the European Society of Cardiology. 2015 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation: Task Force for the Management of Acute Coronary Syndromes in Patients Presenting without Persistent ST-Segment Elevation of the European Society of Cardiology (ESC). Eur Heart J. 2016;37(3):267-315.

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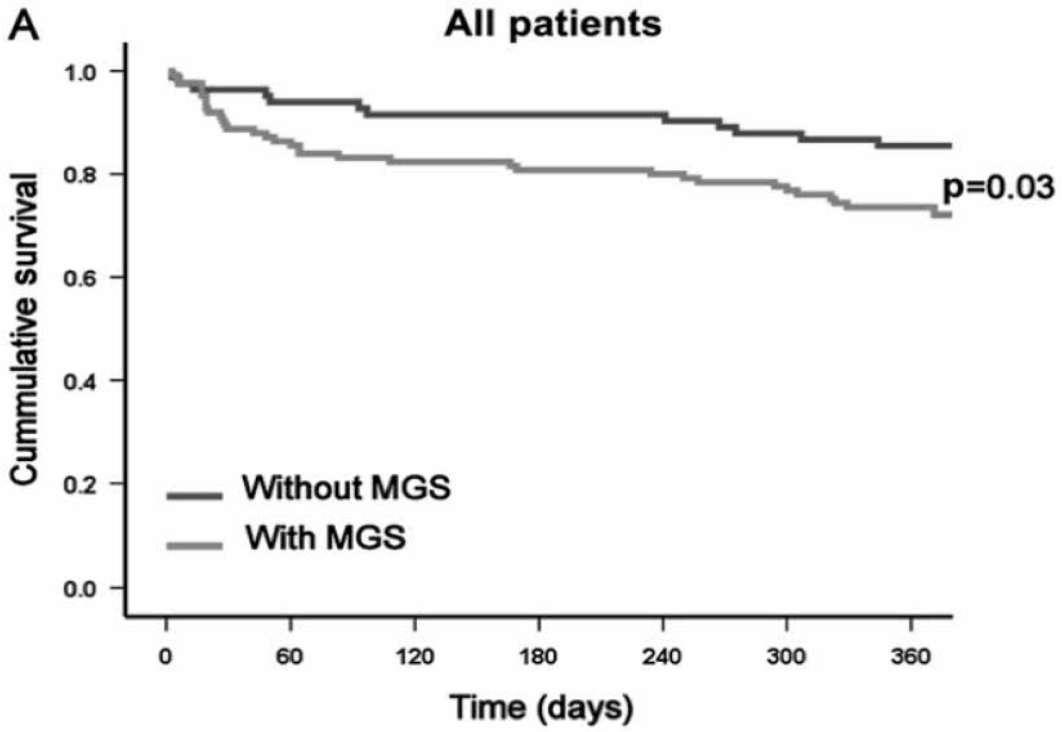
Variables vinculades a l'envelliment

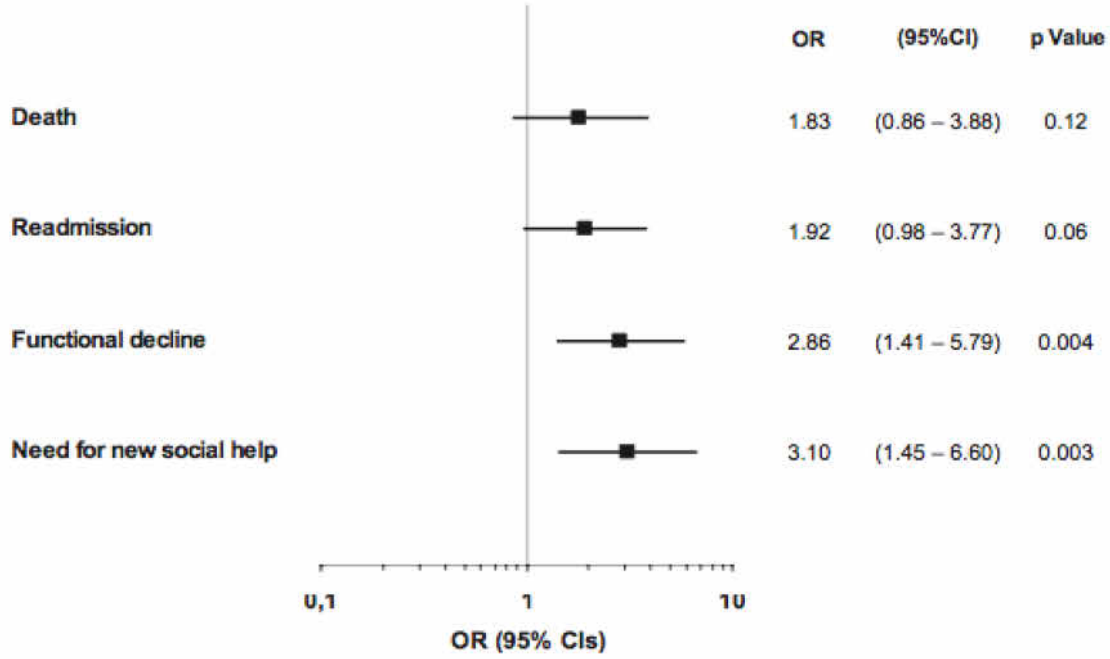
- Condicions de salut de naturalesa multifactorial, de gran prevalença en la gent gran.
    - Deteriorament cognitiu
    - Discapacitat
    - Fragilitat
    - Símptomes depressius
- Deteriorament a nivell de diversos sistemes que fan el paciente vulnerable davant canvis situacionals.

Variables vinculades a l'envelliment

- Vía comú de manifestació de diverses patologies subjacents, que poden produir discapacitat, mala qualitat de vida i morbimortalitat.
- Potencial impacte en el maneig clínic, l'estratificació de risc i pronòstic en ancians amb SCA.

VVE i pronòstic





Sánchez E, Vidán MT, Serra JA, Fernández-Avilés F, Bueno H. Prevalence of geriatric syndromes and impact on clinical and functional outcomes in older patients with acute cardiac diseases. Heart. 2011;97:1602-6.

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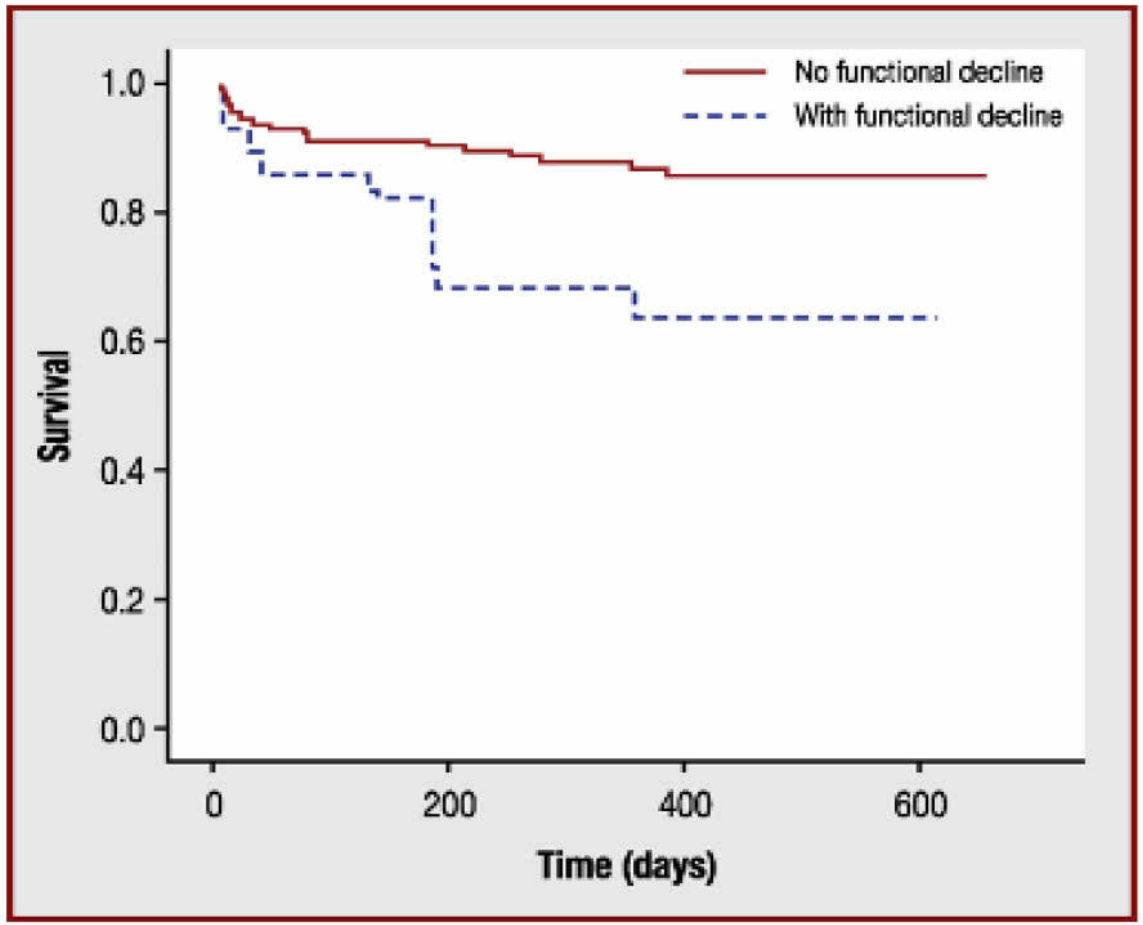
VVE i pronòstic



Huerre C, Guiot A, Maréchaux S et al. Functional decline in elderly patients presenting with acute coronary syndromes: impact on mid term outcome. Arch Cardiovasc Dis. 2010 ;103:19-25.

VVE i pronòstic

Table III. Univariable and multivariable analysis of each geriatric condition for the outcomes

Geriatric condition (points)	Univariable AUC		Multivariable HR (95% CI)	
	Death	Death/AMI	Death	Death/AMI
Comorbidity				
Charlson	0.733	0.718	1.19 (1.02-1.39)	1.17 (1.0-1.37)
SCI	0.746	0.717	ns	ns
Frailty				
Green	0.762	0.688	1.25 (1.15-1.36)	1.15 (1.07-1.23)
Fried	0.714	0.681	ns	ns
Cognitive impairment				
Pfeiffer	0.611	0.560	1.19 (1.08-1.32)	1.12 (1.01-1.23)
Physical disability				
Barthel	0.662	0.610	ns	ns
Instrumental disability				
Lawton-Brody	0.666	0.600	ns	ns

Sanchis J, Bonanad C, Ruiz V et al. Frailty and other geriatric conditions for risk stratification of older patients with acute coronary syndrome. Am Heart J. 2014;168:784-91.

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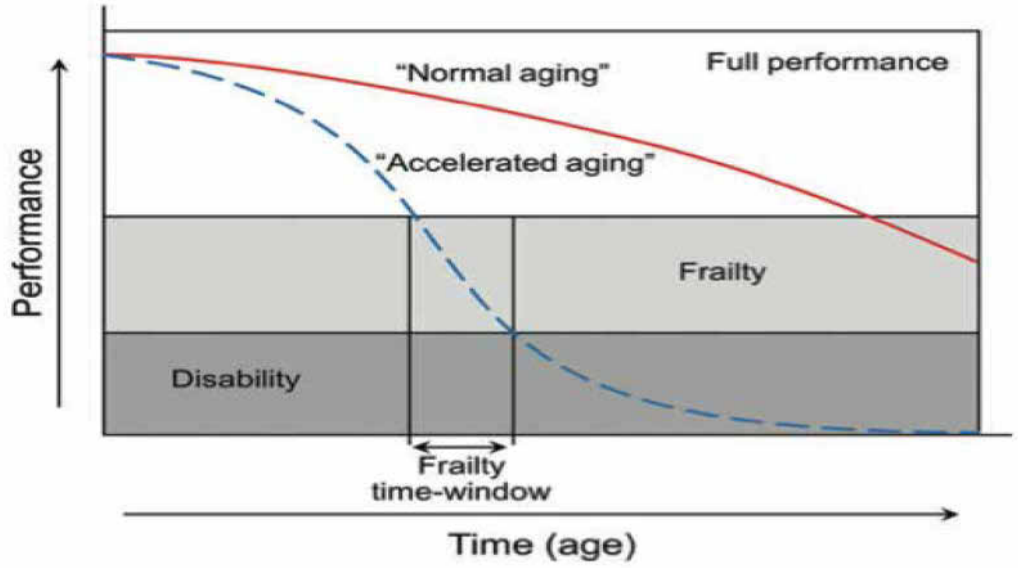
Fragilitat

- Síndrome clínica complexa caracterizada per vulnerabilitat, reducció en la reserva fisiològica i potencial deteriorament a nivell de diferents sistemes.
- Rol important en el gap entre edat cronològica i estat biològic.

Fragilitat

- Definició clínica: lentitud, debilitat, escassa activitat física, fatigabilitat i pèrdua de pes.
- Es solapa amb
  - comorbilitat
  - depressió
  - escassa qualitat de vida
  - deteriorament cognitiu
  - dependència funcional



Mesures de fragilitat

- Valoració subjetiva implícita a la capçalera del malalt (poc reproduïble, probable biaix).
- Velocitat de la marxa.
- Força de prensió digital.
- Escales de mesura.

Escales de fragilitat

Table 2 Simplified Fried criteria for frailty[99,100]

1	Unintentional weight loss	>4.5 kg in the past year
2	Exhaustion	For at least 3 days during the last week 'I felt that everything I did was an effort' or 'I could not get going'
3	Physical activity	No physical activity, spend most of the time sitting or rarely a short walk during the last year
4	Walk time	Time to walk 4 m >6 s
5	Grip strength	Grip strength by dynamometer

Frail = 3 or more criteria present, pre-frail = 1 or 2 criteria.

Table 3 The simple 'FRAIL' Questionnaire Screening Tool[101]

3 or greater = frailty; 1 or 2 = pre-frail

Fatigue: are you fatigued?

Resistance: cannot walk up one flight of stairs?

Aerobic: cannot walk one block

Illness: do you have more than five illnesses?

Loss of weight: have you lost >5% of your weight in the past 6 months?

Singh M, Stewart R, White H. Importance of frailty in patients with cardiovascular disease. Eur Heart J 2014; 35:1726–1731.

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Escales de fragilitat

Table 1. Domains of the Edmonton Frail Scale

Frailty domain	Item	0 points	1 point	2 points
Cognition	Clock diagram: Place the numbers in the correct positions then place the hands to indicate a time of "10 after 11"	No errors	Minor spacing errors	Other errors
General health status	Hospital admissions in past year	0	1-2	≥ 2
	General health description	Excellent, very good, good	Fair	Poor
Functional independence	Requires assistance with activities such as meal preparation, shopping, transportation, dialing telephone, housekeeping, laundry, managing money, taking medications	0-1	2-4	5-8
Social support	Availability of individuals who are willing and able to support patient needs	Always	Sometimes	Never
Medication use	Five or more different prescription medications on a regular basis	No	Yes	
	Forgetfulness about taking prescription medications	No	Yes	
Nutrition	Weight loss	No	Yes	
Mood	Reported feelings of sadness or depression	No	Yes	
Continence	Unexpected urinary incontinence	No	Yes	
Functional performance (timed get up and go test)	Patient begins by sitting in a chair with back and arms resting, then stands up and walks approximately 3 m, and returns to the chair and sits down	0-10 s	11-20 s	> 20 s, patient unwilling or requires assistance
Totals	Final score is sum of column totals			

Rolfson DB, Majumdar SR, Tsuyuki RT, Tahir A, Rockwood K. Validity and reliability of the Edmonton Frail Scale. Age Ageing 2006;35: 526-9.

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Escales de fragilitat

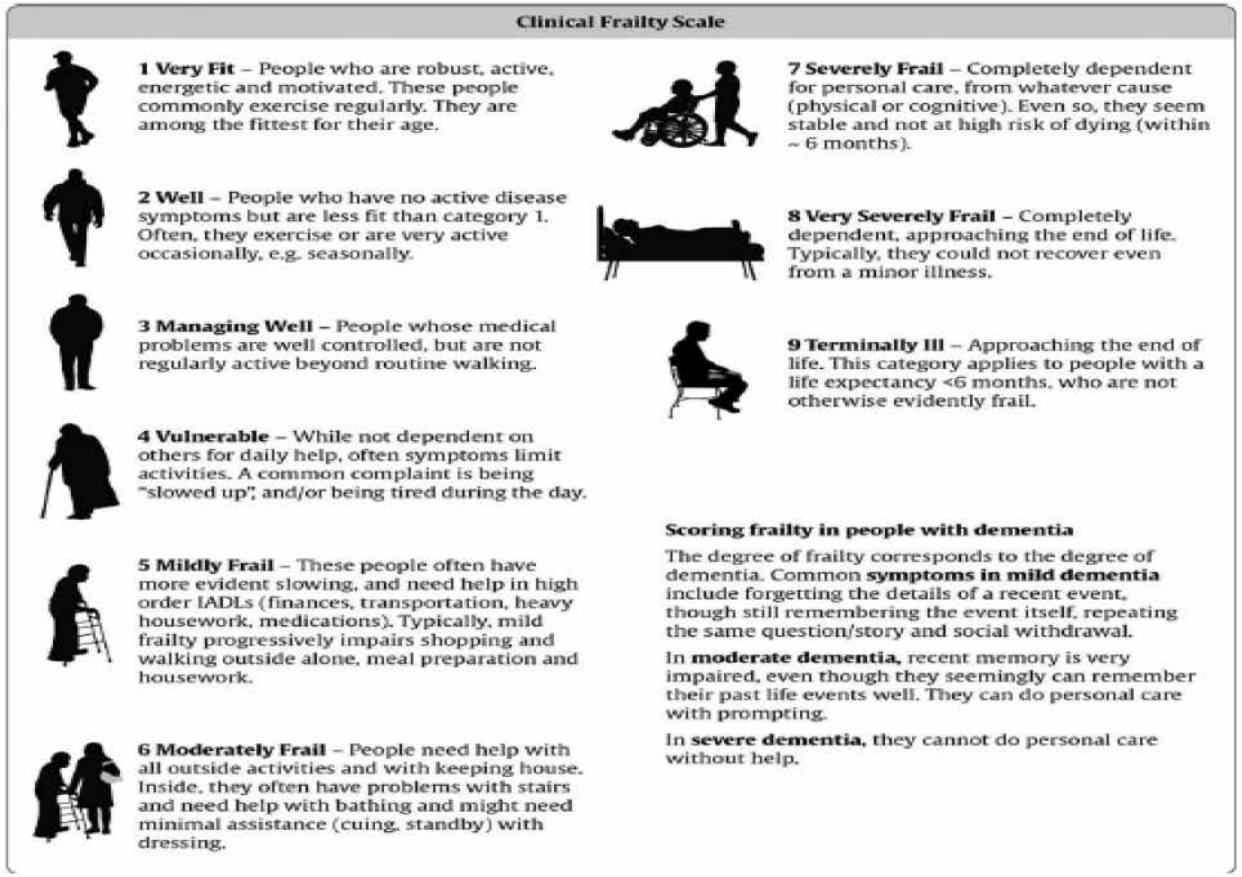

Figure 1 Canadian Study of Health and Aging Clinical Frailty Scale. Adapted from Rockwood *et al.*[18]

Rockwood K, Song X, MacKnight C et al. A global clinical measure of fitness and frailty in elderly people. *CMAJ. 2005;173:489–495.*

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Escales de fragilitat

Green score[7] (0-12 points)		
Serum albumin	Quartiles (g/dL): ≤3.49, 3.50-3.69, 3.70-3.99, ≥4.0	0-3 in descending order
Physical activity	Katz ADLs (activities of daily living survey, 6 activities)	0 = independence, 3 = need for assistance with any of the 6 ADLs
Gait speed	Dividing 4.57 m by time to walk this distance (m/s). Quartiles: ≤0.57, 0.58-0.67, 0.68-0.89, ≥0.9	0-3 in descending order
Grip strength	Sex based quartiles (kg): women: ≤7.2, 7.3-11.3, 11.4-15.6, ≥15.7; men: ≤18.9, 19-25.6, 25.7-30.5, ≥30.6	0-3 in descending order

Green Ph, Woglom AE, Genereux Ph, et al. The impact of frailty status on survival after transcatheter aortic valve replacement in older adults with severe aortic stenosis. A single-center experience. J Am Coll Cardiol Intv 2012;5:974-81.

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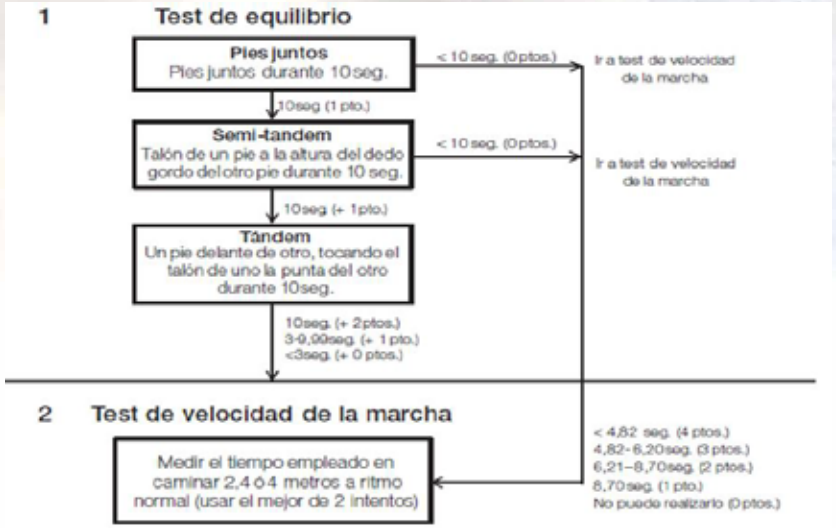
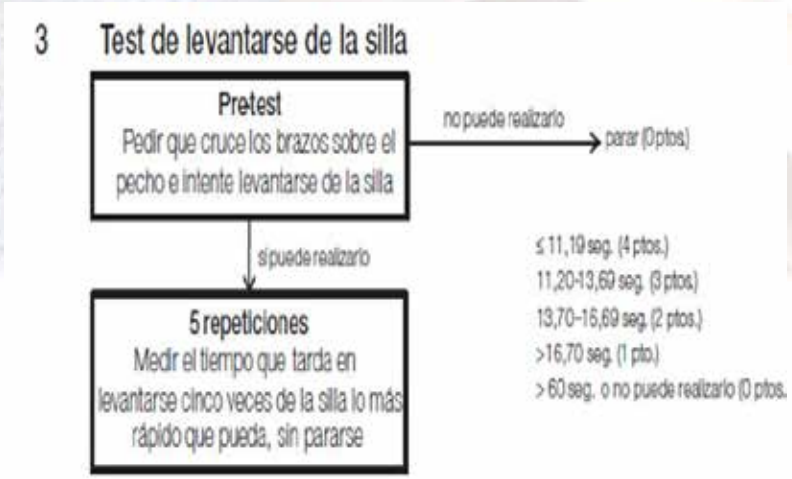
Short Physical Performance Battery (SPPB)





Guralnik JM, Ferrucci L, Pieper CF et al. Lower extremity function and subsequent disability: consistency across studies, predictive models, and value of gait speed alone compared with the short physical performance battery. J Gerontol A Biol Sci Med Sci. 2000; 55:M221-31.

Prevalença fragilitat

- 10-15% en pacients> 65a.
- Aumenta amb l'edat, i es major en dones i en pacients institucionalitzats.
- La prevalença es triplica en ancians cardiòpates (25-30%).

Singh M, Rihal CS, Lennon RJ et al. Influence of frailty and health status on outcomes in patients with coronary disease undergoing percutaneous revascularization. Circ Cardiovasc Qual Outcomes. 2011;4:496-502.

Table 2 Prevalence of geriatric syndromes and conditions in 211 unselected older patients admitted for acute cardiac disease to a cardiology unit

	n	%
Major geriatric syndromes	127	60.2
Frailty	86	40.8
Cognitive impairment	67	31.8
Severe dependence (ADL score ≤3))	31	14.7
Depression	9	4.3
Other geriatric syndromes/conditions		
Urinary incontinence	113	53.6
Visual impairment	91	43.1
Hearing impairment	77	36.5
Mobility impairment	46	21.8
Recurrent falls	31	18.8

ADL, activity of daily living.

Sánchez E, Vidán MT, Serra JA, Fernández-Avilés F, Bueno H. Prevalence of geriatric syndromes and impact on clinical and functional outcomes in older patients with acute cardiac diseases. Heart. 2011;97:1602-6.

Fragilitat i pronòstic

Table 2. Outcomes (Unadjusted)

Variable, n (%)	Nonfrail (n=158)	Frail (n=149)	P
Primary composite outcome*	43 (27.2)	68 (45.6)	0.0009
Mortality, 1 mo	5 (3.2)	23 (15.4)	0.0002
Mortality, in-hospital	3 (1.9)	15 (10.1)	0.003
Major bleeding, stroke/TIA, or need for dialysis, in-hospital	6 (3.8)	14 (9.4)	0.063
No. of bed days	7.5	13.4	<0.0001
Coronary angiography, 1 mo	73 (46.2)	23 (15.4)	<0.0001
Revascularization, 1 mo	48 (30.4)	10 (6.7)	<0.0001
	Nonfrail (n=155)	Frail (n=134)	
Rehospitalization, 1 mo	34 (21.9)	40 (29.9)	0.138
Reinfarction, 1 mo	8 (5.2)	10 (7.5)	0.470
Major bleeding, stroke/TIA, or need for dialysis, 1 mo	5 (3.2)	2 (1.5)	0.456

*Primary composite outcome denotes the composite of death from any cause, myocardial reinfarction, revascularization due to ischemia, hospitalization for any cause, major bleeding, stroke/transient ischemic attack (TIA), and need for dialysis up to 1 month after inclusion.

Table 3. Risk-Adjusted Impact of Frailty on the Primary Composite Outcome

	Odds Ratio (95% CI)	P
Age, y		0.34
75–79	Reference	
80–84	1.19 (0.62–2.30)	0.60
≥85	0.76 (0.39–1.49)	0.43
Gender		0.48
Male	Reference	
Female	0.82 (0.47–1.41)	0.48
Ejection fraction		0.58
>40%	Reference	
≤40%	1.11 (0.58–2.14)	0.75
Not recorded	1.37 (0.76–2.44)	0.30
Cardiovascular risk		0.26
Low	Reference	
Moderate	1.74 (0.64–4.72)	0.28
Severe	2.49 (0.81–7.63)	0.12
Frailty		
Nonfrail	Reference	
Frail	2.17 (1.28–3.67)	0.0041
CAD index		0.049
Low	Reference	
Moderate	0.57 (0.29–1.13)	0.11
Severe	1.36 (0.76–2.45)	0.31

CI indicates confidence interval; CAD, coronary artery disease. The independent variables were tested for collinearity with the use of the variance inflation factor. All variables had a variance inflation factor value <2.5, which does not indicate collinearity.

307 pacients >75a NSTEMI; fragilitat per CSHA

Ekerstad N, Swahn E, Janzon M et al. Frailty is independently associated with short-term outcomes for elderly patients with non-ST-segment elevation myocardial infarction. Circulation. 2011;124:2397-404.

Ekerstad N, Swahn E, Janzon M et al. Frailty is independently associated with 1-year mortality for elderly patients with non-ST-segment elevation myocardial infarction. Eur J Prev Cardiol. 2013

Fragilitat i pronòstic

628 pacients >65a sotmesos a ICP. Criteris de Fried

Table 3. Unadjusted Associations With the 2 Follow-Up End Points

	Death			Death/MI		
	HR	95% CI	*P* Value	HR	95% CI	*P* Value
Mayo Clinic Risk Score	1.15	(1.08, 1.22)	<0.001	1.10	(1.04, 1.15)	<0.001
Comorbidities						
Charlson Index	1.12	(1.06, 1.18)	<0.001	1.05	(1.01, 1.10)	0.024
Frailty group			<0.001			<0.001
Intermediate frailty	1.90	(0.85, 4.25)	0.120	1.40	(0.84, 2.33)	0.192
Frail	5.36	(2.41, 11.9)	<0.001	3.04	(1.80, 5.15)	<0.001
Health status variables			<0.001			0.032
SF-36 Mental Comp (per 10 point decrease)	1.02	(0.81, 1.27)	0.893	1.09	(0.92, 1.29)	0.326
SF-36 Physical Comp (per 10 point decrease)	1.72	(1.36, 2.18)	<0.001	1.24	(1.04, 1.47)	0.015

MI indicates myocardial infarction; HR, hazard ratio; CI, confidence interval; and SF-36, Short-Form 36.

Singh M, Rihal CS, Lennon RJ et al. Influence of frailty and health status on outcomes in patients with coronary disease undergoing percutaneous revascularization. Circ Cardiovasc Qual Outcomes. 2011;4:496-502.

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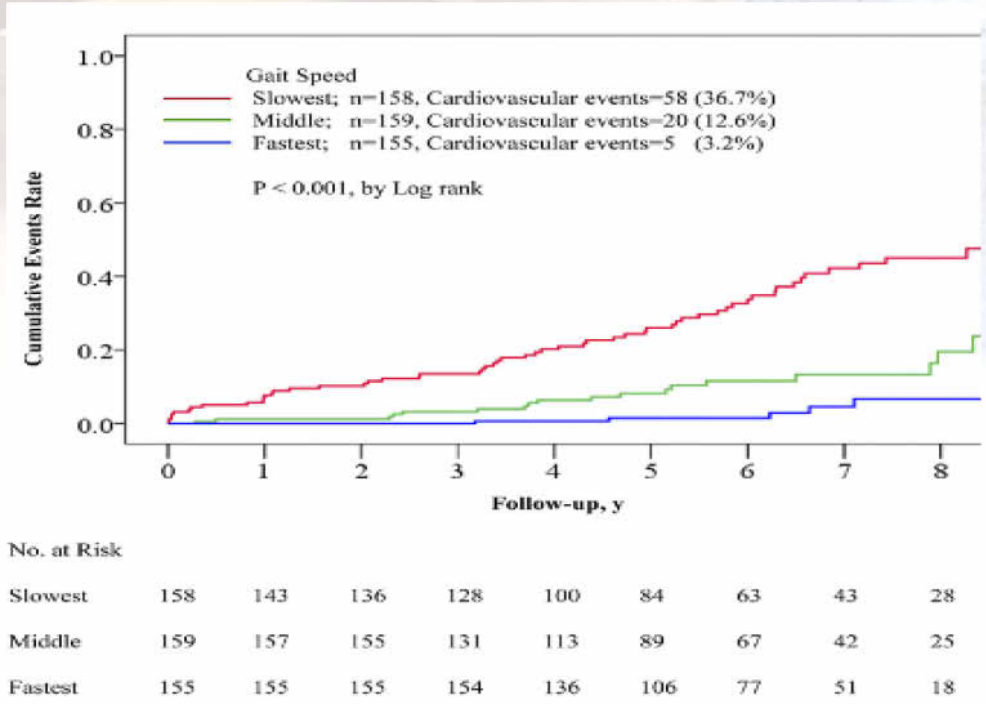
Fragilitat i pronòstic



472 pacients amb STEMI ICP primari<12h. Velocitat de la marxa prealta (200 m).

Table 5 C-Statistics for Cox Proportional Hazards Models to Predict Cardiovascular Events in STEMI Patients

	C-Statistic	95% CI	Increment in C-Statistic	95% CI
FRS	0.595	0.528-0.669		
FRS + gait speed	0.763	0.716-0.812	0.169	0.095-0.242
FRS + BNP	0.677	0.609-0.744		
FRS + BNP + gait speed	0.771	0.724-0.816	0.095	0.044-0.149
FRS + comorbidity index	0.654	0.581-0.712		
FRS + comorbidity index + gait speed	0.781	0.735-0.824	0.127	0.068-0.203
FRS + BNP + comorbidity index	0.703	0.636-0.763		
FRS + BNP + comorbidity index + gait speed	0.786	0.738-0.829	0.083	0.040-0.135

Matsuzawa Y, Konishi M, Akiyama E, et al. Association between gait speed as a measure of frailty and risk of cardiovascular events after myocardial infarction. J Am Coll Cardiol. 2013;61:1964-72.

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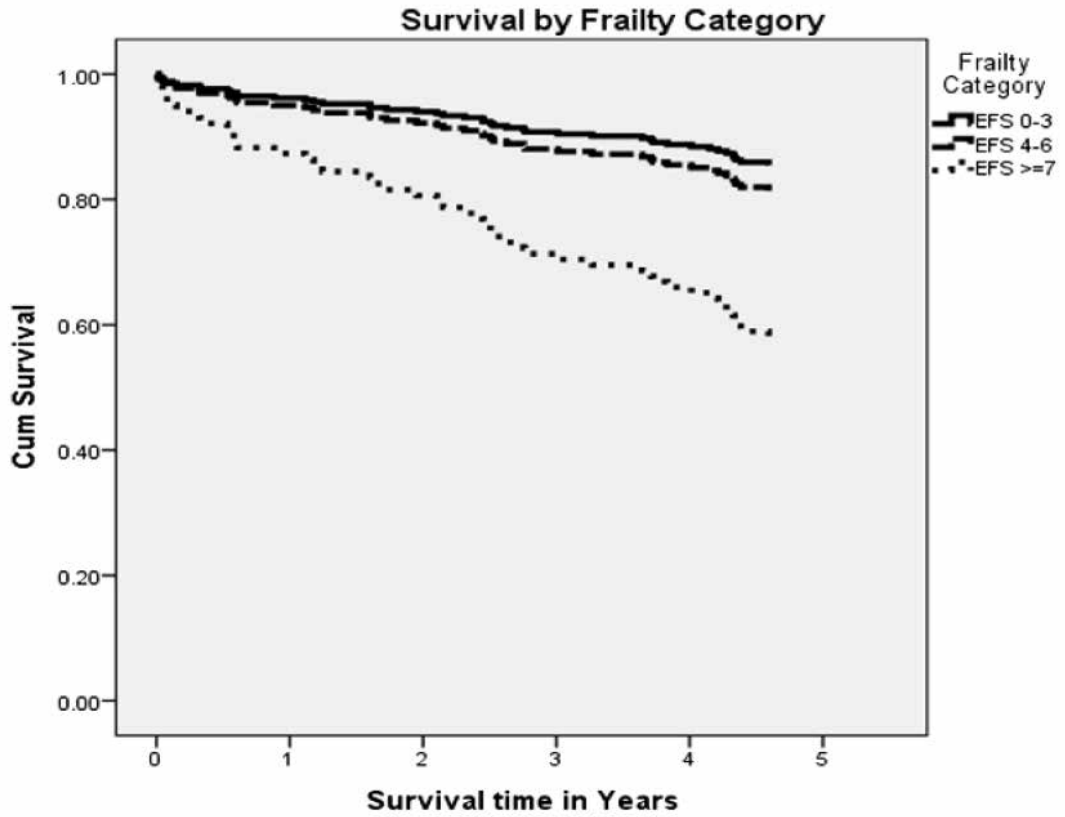
Fragilitat i pronòstic

183 pacients >65 a SCA



Graham MM, Galbraith PD, O'Neill D et al. Frailty and outcome in elderly patients with acute coronary syndrome. Can J Cardiol. 2013;29:1610-5.

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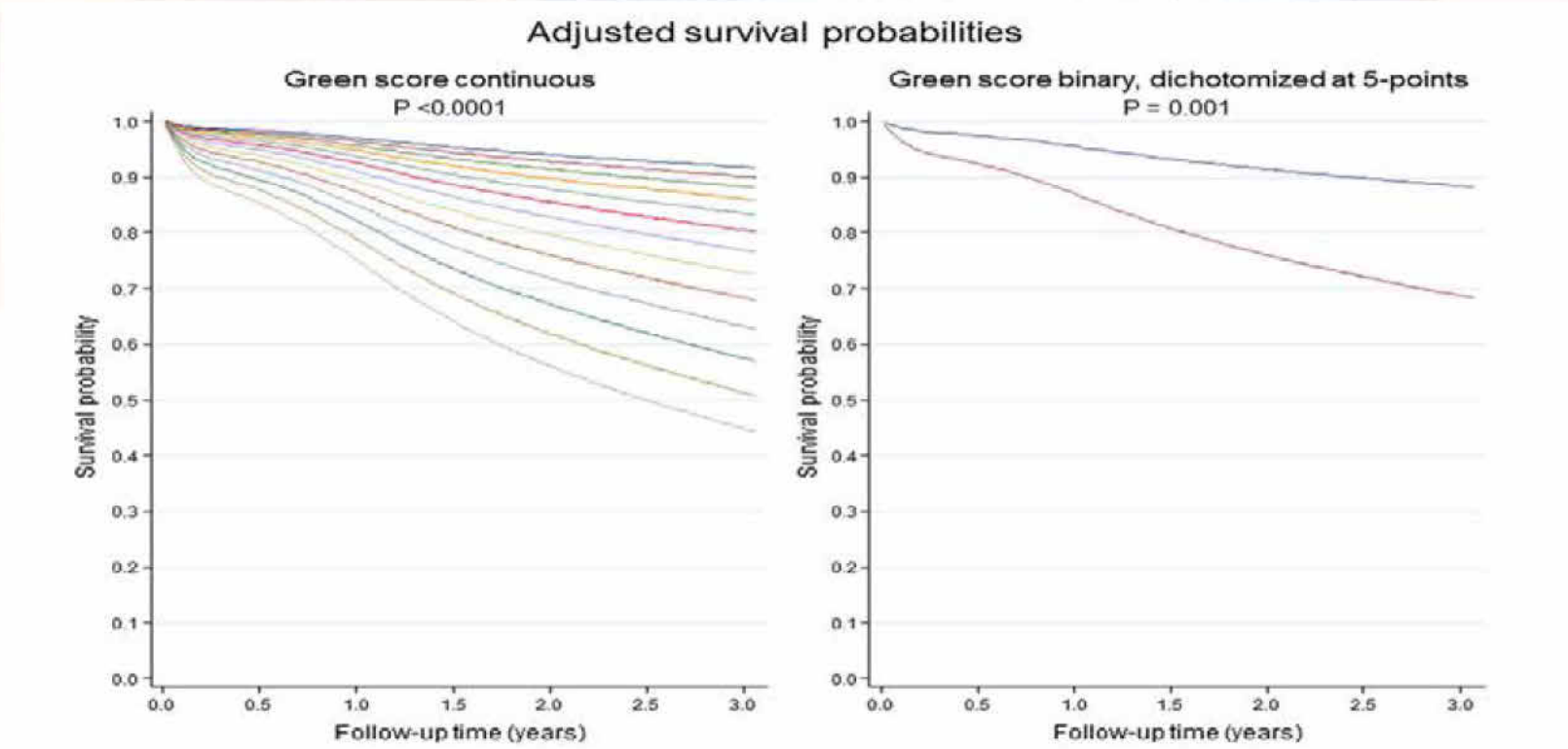
Fragilitat i pronòstic



342 pacients >65a SCA

Sanchis J, Bonanad C, Ruiz V et al. Frailty and other geriatric conditions for risk stratification of older patients with acute coronary syndrome. Am Heart J. 2014;168:784-91.

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Fragilitat i pronòstic

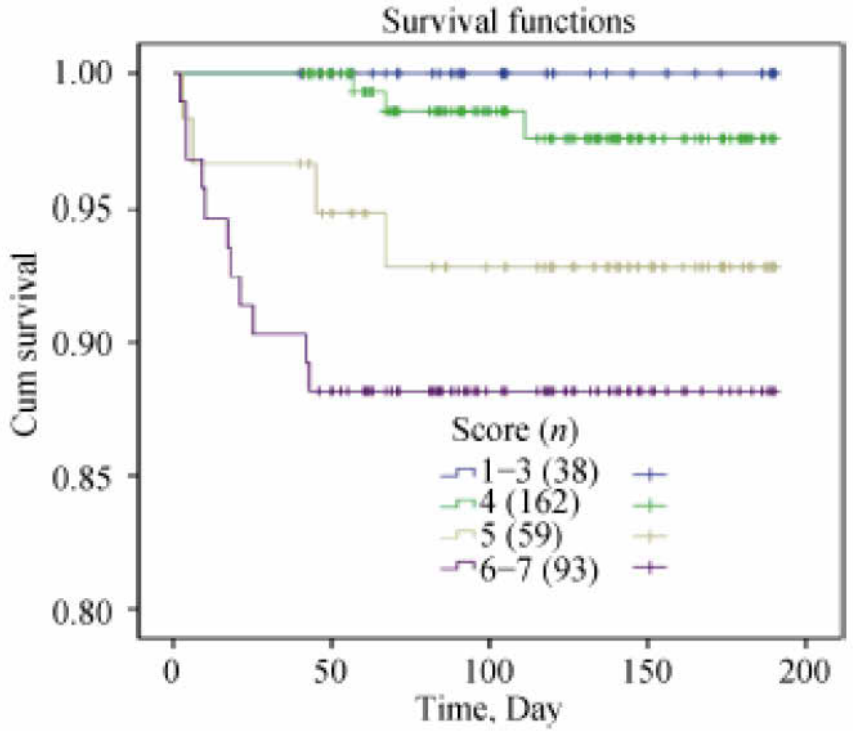
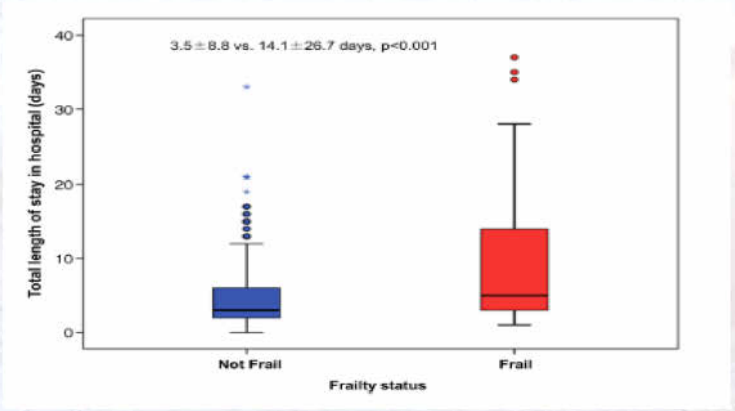


Figure 1. Kaplan–Meier curves. Adjusted for age and sex, for study participants (*n*) over the medium term (120 days), according to their scores on the Clinical Frailty Scale. Some scores were grouped.

352 pacients >65a SCA

Kang L, Zhang SY, Zhu WL, Pang HY, Zhang L, Zhu ML, Liu XH, Liu YT. Is frailty associated with short-term outcomes for elderly patients with acute coronary syndrome? J Geriatr Cardiol. 2015;12:662-7.

Fragilitat i pronòstic



745 pacients sotmesos a ICP (mitja 62a)

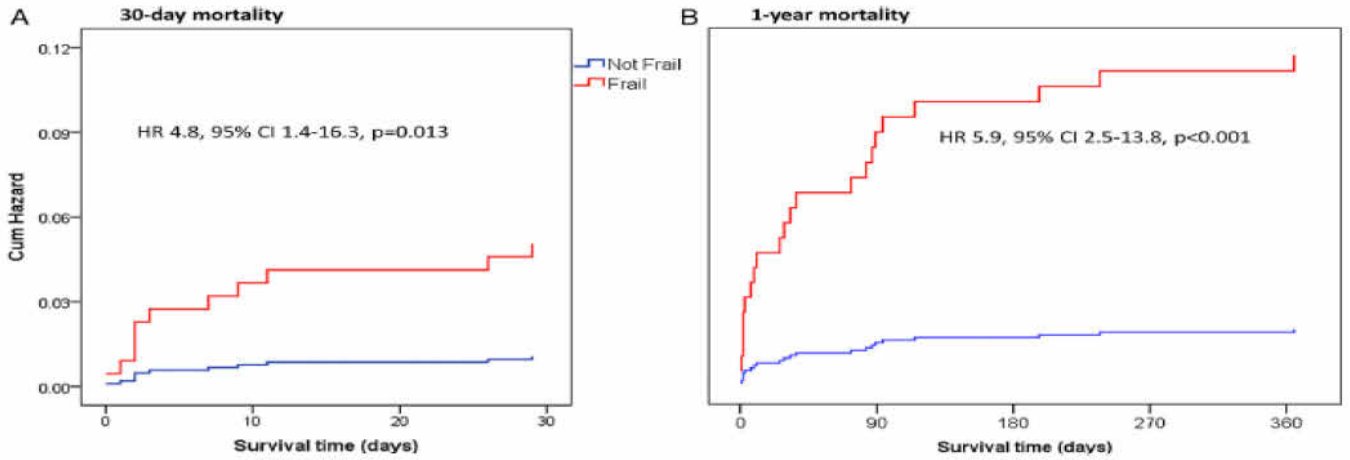


Figure 3 Mortality according to Frailty score. Frailty was associated with higher 30-day (A) and 1-year (B) mortality.

Murali-Krishnan R, Iqbal J, Rowe R, Hatem E, Parviz Y, Richardson J, Sultan A, Gunn J. Impact of frailty on outcomes after percutaneous coronary intervention: a prospective cohort study. Open Heart. 2015 Sep 8;2(1):e000294.

Fragilitat i pronòstic

Table 4. Primary and secondary endpoints results; univariable analysis.

	Frail (*n*=71)	Non-frail (*n*=131)	OR (95% CI)	*P* value
All-cause mortality (%)	6 (8.5%)	1 (0.8%)	12.0 (1.4–101.8)	**0.004**
Re-infarction (%)	1 (1.4%)	1 (0.8%)	0.7 (0.1–30.1)	**0.663**
Stroke (%)	1 (1.4%)	0 (0%)	–	**0.173**
Major bleeding (%)	14 (19.7%)	12 (9.2%)	2.4 (1.1–5.6)	**0.032**
MACE (%)	7 (9.9%)	2 (1.5%)	7.1 (1.4–34.9)	**0.006**
MACCE (%)	8 (11.3%)	2 (1.5%)	8.2 (1.7–39.7)	**0.002**
Combined MACE and major bleeding (%)	17 (23.9%)	13 (9.9%)	2.9 (1.3–6.3)	**0.007**

OR: odds ratio; CI: confidence interval; MACE: major adverse cardiac events; MACCE: major adverse cardiac and cerebrovascular events.

Table 5. Primary endpoint; multivariate analysis.

	MACE	*P* value
Odds ratio (95% CI)		
Frailty	7.13 (1.43–35.42)	0.016
Age	0.98 (0.85–1.12)	0.974
Maximum creatinine	1.24 (0.63–2.42)	0.527
GRACE index	1.02 (0.99–1.06)	0.210
Diabetes mellitus	0.67 (0.17–2.83)	0.602

MACE: major adverse cardiac events.

Alonso Salinas GL, Sanmartín Fernández M, Pascual Izco M, et al. Frailty is a short-term prognostic marker in acute coronary syndrome of elderly patients. Eur Heart J Acute Cardiovasc Care. 2016;5(5):434-40.

Fragilitat i pronòstic

- Valoració de fragilitat (Fried) en 4996 pacients >65a de l'estudi TRILOGY.
  - Fragilitat 4,7%; prefragilitat 23%
- Associació amb esdeveniment 1ari (mort CV, IAM o AVC) i mortalitat global a 30d.
- Associació independent de característiques basals i score GRACE.

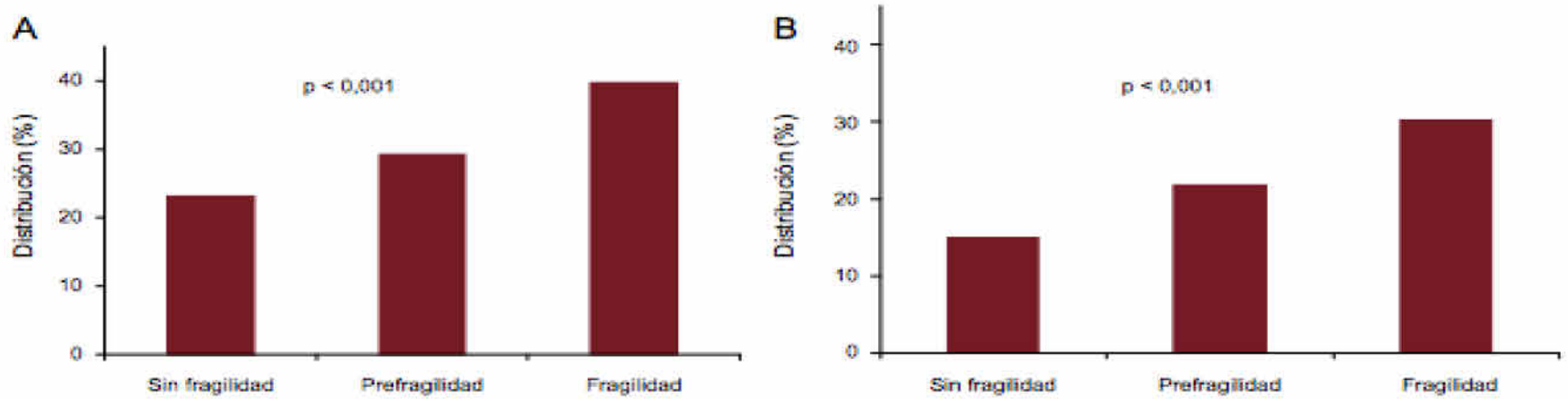


Figura 2. Asociación de la prefragilidad y la fragilidad con el pronóstico en el ensayo TRILOGY. Modificada con permiso de White et al[37]. A: muerte cardiovascular, infarto o accidente cerebrovascular a los 30 días. B: mortalidad total a los 30 días.

White HD, Westerhout CM, Alexander KP, et al; TRILOGY ACS investigators. Frailty is associated with worse outcomes in non-ST-segment elevation acute coronary syndromes: Insights from the TaRgeted platelet Inhibition to cLarify the Optimal strateGy to medicallY manage Acute Coronary Syndromes trial. Eur Heart J Acute Cardiovasc Care. 2016;5:231-42.

Fragilitat i maneig clínic

Table 2. Overall risk estimation and general admission data.

Risk assesment at admission	Frail (*n*=71)	Non-frail (*n*=131)	*P* value
GRACE score (mean±SD)	154.4±23.1	141±20.6	0.000
TIMI score (mean±SD)	4.6±1.1	3.4±1.1	0.000
CRUSADE score (mean±SD)	48.2±14.5	34.1±12.9	0.000
STEMI (%)			
Killip–Kimball *I (%)*			
II (%)			
III (%)			
Admission SBP (mean±SD; mmHg)			
Admission HR (mean±SD; lpm)			
Severe left ventricular dysfunction (%)			
Laboratory parameters			
Admission glucose level (mean±SD; mg/dl)			
Admission leukocytes (mean±SD; U×10²/l)			
Admission CRP (mean±SD; mg/l)			
Maximum creatinine (mean±SD; mg/dl)			
Maximum BNP (mean±SD; pg/ml)			
Thyroid-stimulating hormone (mean±SD; mIU/l)			
1,25 hydroxi-Vitamin D (mean ± SD; ng/ml)			
Procedural data			
Catheterisation (%)			
Culprit vessel revascularisation (%)			
Complete revascularisation (%)			
Post-procedural data			
Hospital stay (mean±SD; days)			

Table 2. Patient characteristics

Characteristic	EFS 0-3 n = 63	EFS 4-6 n = 65	EFS ≥ 7 n = 55	*P* value
Mean age (y)	73.9	75.3	77.2	0.031
Sex (% female)	22.2	38.5	38.2	0.088
Hypertension (%)	61.3	86.2	96.4	< 0.001
Dyslipidemia (%)	84.1	92.3	85.5	0.328
Diabetes (%)	14.3	27.7	45.5	0.001
Smoking (%)	7.9	12.3	16.4	0.571
Renal disease (%)	6.7	14.1	29.6	0.003
Congestive heart failure (%)	4.8	9.2	35.2	< 0.001
Peripheral vascular disease (%)	4.8	7.7	9.1	0.642
Cerebrovascular disease (%)	7.9	10.8	25.5	0.015
Previous MI (%)	22.2	40.0	43.6	0.030
Previous PCI (%)	17.5	29.2	34.5	0.096
Previous CABG (%)	8.1	18.5	18.5	0.203
STEMI (%)	23.8	18.5	14.5	0.436
Malignancy (%)	8.1	9.2	11.1	0.854
Pulmonary disease (%)	11.3	16.9	29.6	0.113
Liver disease (%)	0.0	0.0	1.9	0.448
GI disease (%)	10.0	9.2	14.8	0.734
Treatment received				
Cardiac catheterization (%)	88.9	86.2	58.2	< 0.001
PCI (%)	36.5	26.2	16.4	0.047
CABG (%)	12.7	18.5	9.1	0.364
Length of stay (mean d)	7.0	9.7	12.7	0.026

CABG, coronary artery bypass grafting; CAD, coronary artery disease; EFS, Edmonton Frail Scale; GI, gastrointestinal; LV, left ventricle; MI, myocardial infarction; PCI, percutaneous intervention; STEMI, ST-segment elevation MI.

Table 2. Outcomes (Unadjusted)

Variable, n (%)	Nonfrail (n=158)	Frail (n=149)	*P*
	43 (27.2)	68 (45.6)	0.0009
	5 (3.2)	23 (15.4)	0.0002
	3 (1.9)	15 (10.1)	0.003
	6 (3.8)	14 (9.4)	0.063
	7.5	13.4	<0.0001
	73 (46.2)	23 (15.4)	<0.0001
	48 (30.4)	10 (6.7)	<0.0001
	Nonfrail (n=155)	Frail (n=134)	
	34 (21.9)	40 (29.9)	0.138
	8 (5.2)	10 (7.5)	0.470
	5 (3.2)	2 (1.5)	0.456

ne denotes the composite of death from any , revascularization due to ischemia, hospitaliza- ding, stroke/transient ischemic attack (TIA), and th after inclusion.

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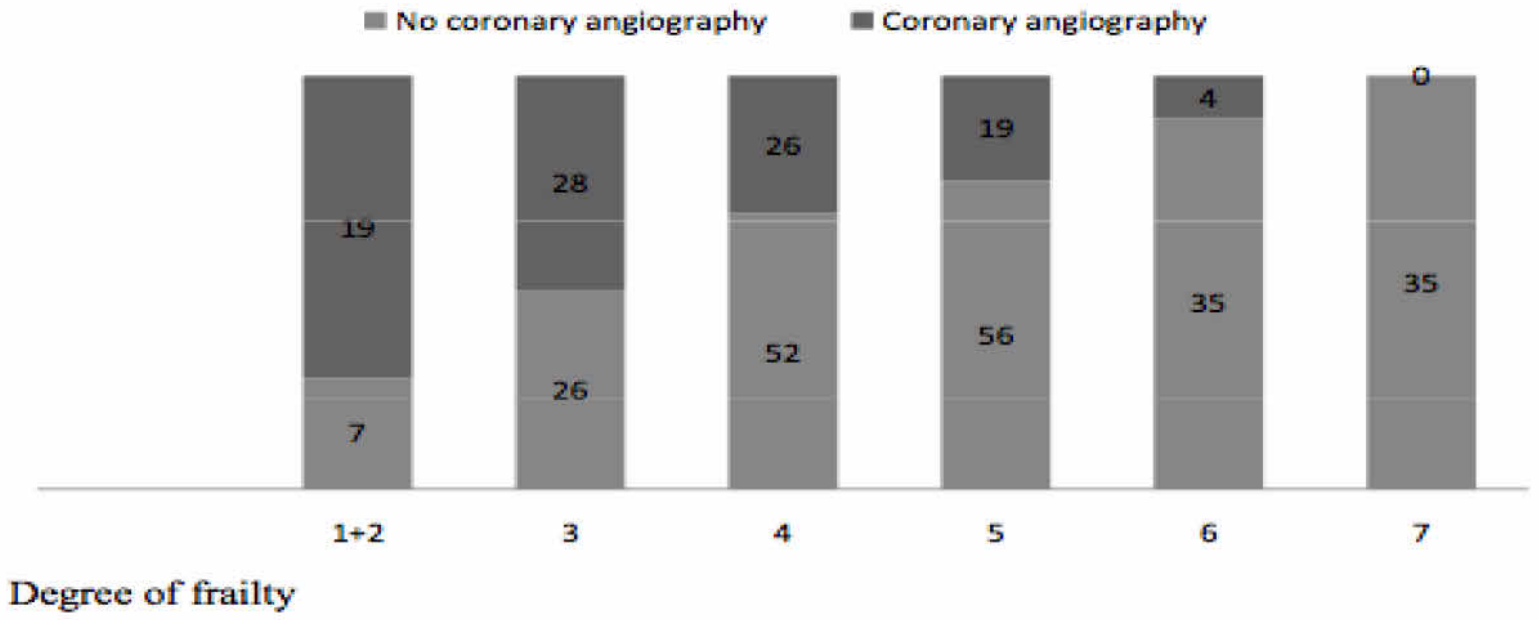
Fragilitat i maneig clínic

- Menor utilització de tractaments recomanats i estratègia invasiva en pacients fràgils.



Ekerstad N, Swahn E, Janzon M et al. Frailty is independently associated with short-term outcomes for elderly patients with non-ST-segment elevation myocardial infarction. Circulation. 2011;124:2397-404.

Maneig clínic

- Part de las diferències en el maneig es basen en percepcions subjectives de fragilitat i expectativa vital limitada, no sempre exactes.
- Existeix escassa evidència sobre com debe ha de modificar-se el tractament en presència de fragilitat.

Ko DT, Austin PC, Tu JV, Lee DS, Yun L, Alter DA. Relationship between care gaps and projected life expectancy after acute myocardial infarction. Circ Cardiovasc Qual Outcomes. 2014;7:581-8.

Parker AB, Naylor CD, Chong A, Alter DA. Clinical prognosis, pre-existing conditions and the use of reperfusion therapy for patients with ST segment elevation acute myocardial infarction. Can J Cardiol. 2006;22:131-9.

Estratificació de risc en ancians amb SCA

- Edat cronològica: predictor potent de mortalitat i present en diverses escales de risc.
- Algunes de les escales de risc més comuns han mostrat un pitjor rendiment predictu en el pacient d'edat avançada.

Lenderink T, Hernández AV, Boersma E, Martínez-Sellés M, Juárez M, Sánchez PL, Vidán MT, Simoons ML, Fernández-Avilés F, Bueno H. Prediction of 30-day mortality in older patients with a first acute myocardial infarction. Cardiology. 2010;115:1-9.

Estratificació del risc hemorràgic

>75a <75a

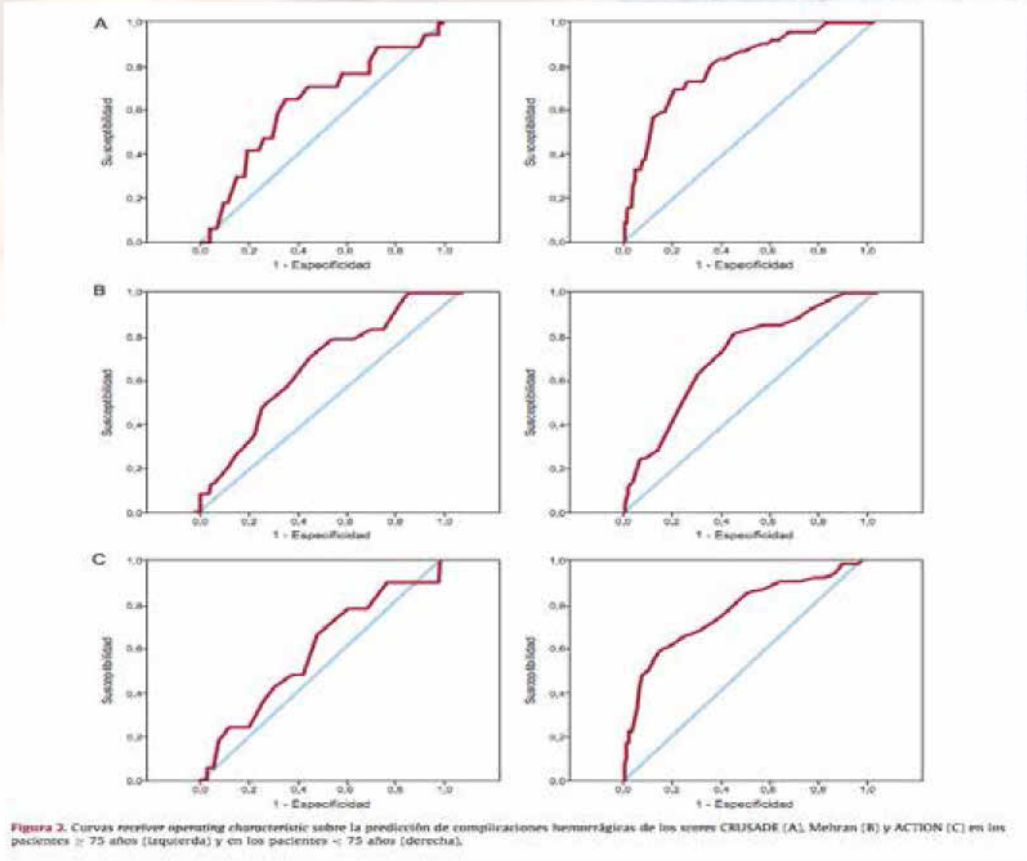


Figura 3. Curvas *receiver operating characteristic* sobre la predicción de complicaciones hemorrágicas de los scores CRUSADE (A), Mehran (B) y ACTION (C) en los pacientes ≥ 75 años (izquierda) y en los pacientes < 75 años (derecha).

- Las variables vinculades a l' envelliment podrien tener un paper en el pitjor funcionament de les escales de risc hemorràgic en la gent gran.

Ariza-Solé A, Formiga F, Lorente V et al. Efficacy of bleeding risk scores in elderly patients with acute coronary syndromes. Rev Esp Cardiol. 2014;67:463-70.

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Fragilitat i risc hemorràgic

- La fragilitat va predir predir les hemorràgies majors malgrat una menor utilització de DAPT i estratègia invasiva.
- Factor predictor de complicacions hemorràgiques independentment de l'edat.

Table 4
Primary and secondary endpoints results. Univariate analysis.

	Non-frail (n = 118)	Frail (n = 72)	P
Transfusion needed (%)	7 (6.1%)	9 (13%)	0.109
Decrease ≥3 g/dl haemoglobin (%)	12 (0.5%)	17 (24.3%)	0.013
Intracranial haemorrhage (%)	0 (0%)	0 (0%)	–
Bleeding needing surgery (%)	0 (0%)	0 (0%)	–
Major bleeding (%)	14 (11.9%)	19 (26.4%)	0.010
Mortality (%)	4 (3.4%)	6 (8.3%)	0.139
Reinfarction (%)	5 (4.3%)	4 (6%)	0.608
Stroke (%)	2 (1.7%)	2 (2.8%)	0.139

Alonso Salinas GL, Sanmartín Fernández M, Pascual Izco M et al. Frailty predicts major bleeding within 30days in elderly patients with Acute Coronary Syndrome. Int J Cardiol. 2016;222:590-593.

Alegre O, Ariza-Solé A, Vidán MT, Formiga F, Martínez-Sellés M, Bueno H et al. Impact of Frailty and Other Geriatric Syndromes on Clinical Management and Outcomes in Elderly Patients With Non-ST-Segment Elevation Acute Coronary Syndromes: Rationale and Design of the LONGEVO-SCA Registry. Clin Cardiol. 2016;39:373-7.

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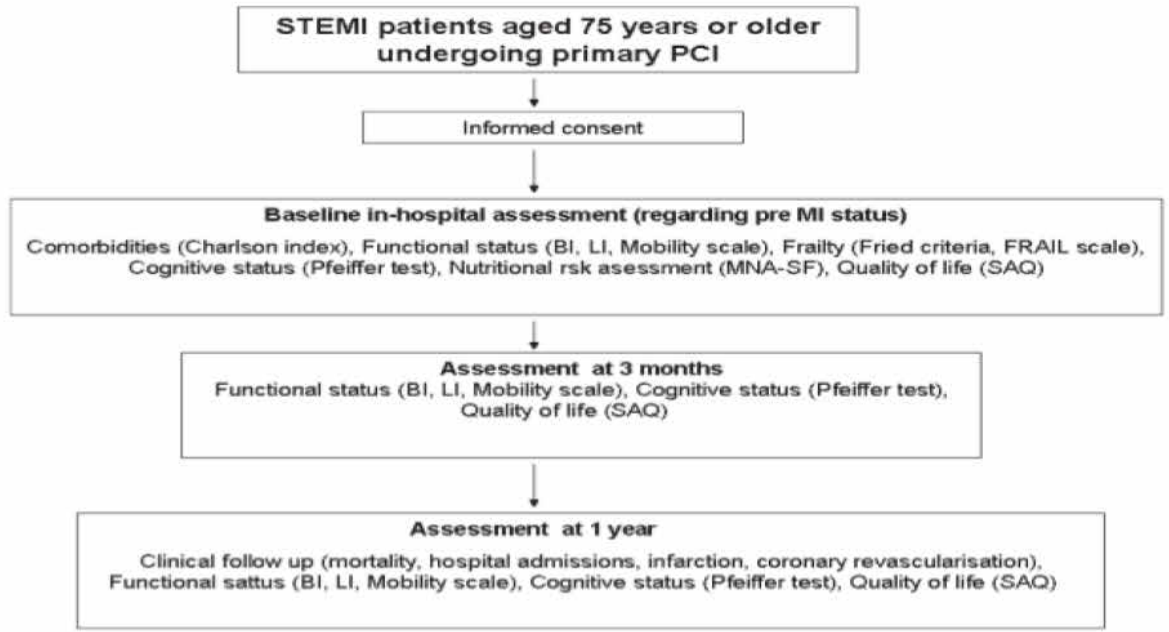
Trial Designs

Impact of Frailty and Functional Status on Outcomes in Elderly Patients With ST-Segment Elevation Myocardial Infarction Undergoing Primary Angioplasty: Rationale and Design of the IFFANIAM Study



Ariza-Solé A, Formiga F, Vidán MT et al. Clin Cardiol.2013;36:565-569.

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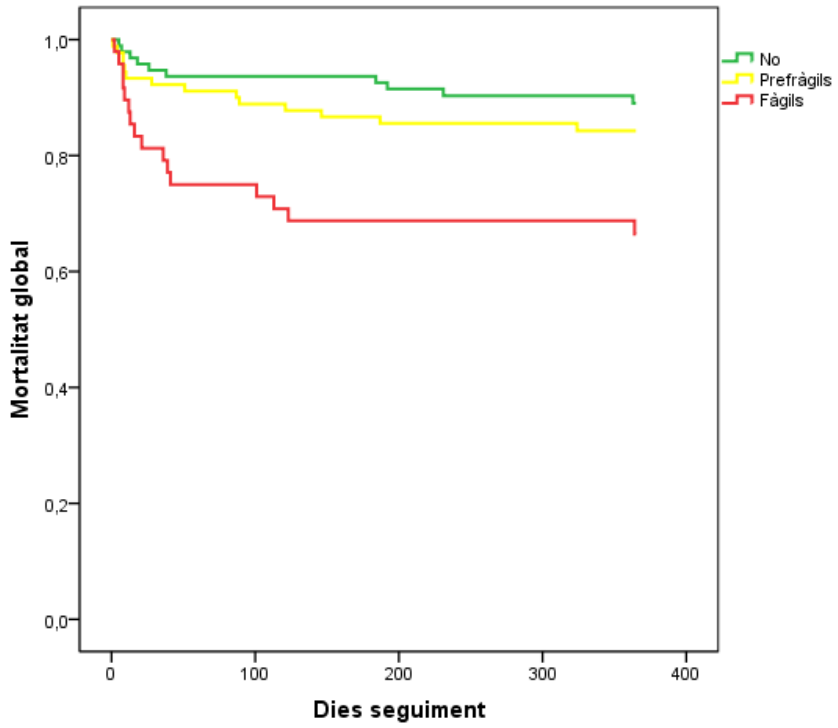
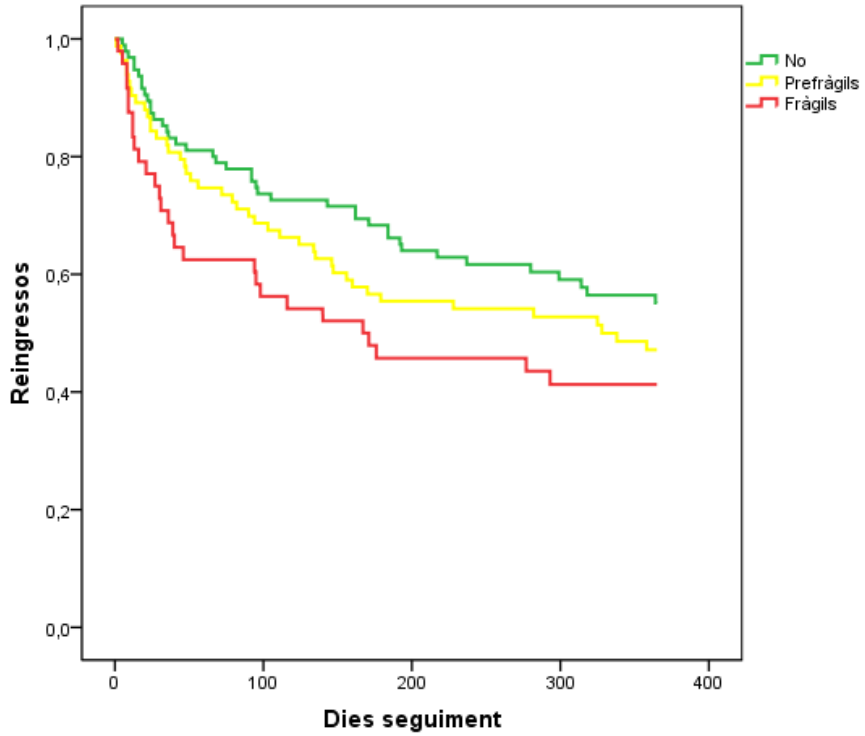
Fragilitat i pronòstic

Mortalitat



Mort o reingrés



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Conclusions

- L' evidència sobre el maneig dels pacients d'alt risc i amb comorbilitats es molt escassa.
- La fragilitat i altres variables vinculades a l'envelliment poden contribuir a caracteritzar l' edat biològica dels pacients amb SCA.
- La seva associació amb la mortalitat i el desenvolupament d'esdeveniments cardiovasculars es molt potent i consistent.

Conclusions

- De forma consistent els pacients fràgils son tractats de forma conservadora i menys adequada a les recomanacions.
- Aquesta estratègia no està basada en evidència sòlida i podria no ser la més idònia.
- La inclusió del pacient fràgil en assaigs aleatoritzats i el registre sistemàtic de la fragilitat i altres variables vinculades a l'envelliment podria reduir la incertesa al voltant del maneig de la SCA en la gent gran.