Session 11 **Coronary artery disease in the elderly**

Chairpersons: F. Pinneri - M. Sicuro — *Sala Agnelli*

15:30 What is more dangerous in old people? *M. Bo*

15.30 What might be «inappropriate» in older patients?

ELDERLY PATIENTS CENTERED CARE

- ***TARGETED INDIVIDUALIZED APPROACH, where MORE sometimes may be LESS and LESS is often MORE***

- ***GLOBAL HEALTH OUTCOMES, prioritizing functional and qualitative subjective outcomes over target organ measures***

- ***UNCERTAIN BENEFIT OF unproved medical therapies in these patients***

The American Journal of Medicine (2017) 130, 1205-1210

Troponin Testing in Patients Without Chest Pain or Electrocardiographic Ischemic Changes

THE AMERICAN JOURNAL of MEDICINE®

OBJECTIVES: to determine **clinical utility**, and **downstream testing** in **patients with elevated troponin values but without chest pain or ECG changes**

RESULTS: Troponin measurements were **sent in 52.5% of all patients** hospitalized in cardiology and internal medicine departments…and were **elevated in 29.9%.** Nearly two-thirds of patients (**63.3%**) reviewed **had neither chest pain nor ischemic ECG changes**…The **elevated troponin values were the sole reason of hospitalization in 2%**....

Table 2 Selected Patients with Elevated Troponin Values

Variable	Subgroup n = 723	All Patients n = 4938
Age, y (mean ± SD)	78.3 ± 12.8	79.6 ± 12.0*
Females (yes)	314 (44.8)	2272 (46.0)
Troponin (ng/L); median (1st-3rd quartiles)	70 (45-181)	70 (44-160)
Mortality odds per troponin quartile† (95% CI)	1.57 (1.15-2.14)	1.56 (1.42-1.71)

- Half of patients hospitalized in cardiology and internal medicine departments had troponin testing.
- The proportion of elevated troponin test results was 30%.
- Most elevated troponin test results were in patients without chest pain or ischemic electrocardiographic changes.
- Elevated test results had no clinical utility and resulted in increased downstream testing in those patients.

Length of Stay in the Emergency Department and Occurrence of Delirium in Older Medical Patients

J Am Geriatr Soc 64:1114–1119, 2016.

Mario Bo, MD, PhD, Martina Bonetto, MD,† Giuliana Bottignole, MD,* Paola Porrino, MD,* Eleonora Coppo, MD,* Michela Tibaldi, MD,* Giacomo Ceci, MD,* Silvio Raspo, MD,† Giorgetta Cappa, MD,† and Giuseppe Bellelli, MD‡*

1112 patients 75+ years

Delirium was diagnosed in 52 participants during the first 3 days after admission to the ward (15.8%)

Table 3. Variables Independently Associated with Incident Delirium

Variable	B (Standard Error)	Exp (B) (95% Confidence Interval)
Length of stay in ED >10 hours 75th percentile	0.80 (0.35)	2.23 (1.13–4.41)
Moderate to severe cognitive impairment	1.70 (0.35)	5.47 (2.76–10.85)
Age	0.65 (0.03)	1.07 (1.01–1.13)

Ospedalizzazione per l'anziano significa anche maggior rischio di:

- **Procedure invasive non sempre indispensabili**
- **Infezioni nosocomiali**
- **Allettamento ed immobilizzazione**
- **Depressione**
- **Confusione mentale, delirium, somministrazione di tranquillanti maggiori**
- **Danni iatrogeni da farmaci e procedure**
- **Cadute e traumatismi**

MAGGIOR MORTALITA'

PEGGIOR QUALITA' DELLA VITA e STATO FUNZIONALE

Journal of Gerontology: MEDICAL SCIENCES
Cite journal as: J Gerontol A Biol Sci Med Sci
doi:10.1093/gerona/glr171

Risk of Continued Institutionalization After Hospitalization in Older Adults

762243 *pazienti >=66 anni ricoverati 1.149568 volte nel periodo gennaio aprile 1996-2008 confrontati con 3.880.292 pazienti non ospedalizzati; outcome: residenza in NH dopo 6 mesi*

In a multivariable analysis, including both the hospitalized and nonhospitalized cohorts and controlling for the factors listed in Table 1, prior hospitalization was associated with a 5.31 higher odds of subsequent residence in long-term care. Looking at total new nursing home placements in the hospitalized and nonhospitalized groups, prior hospitalization was associated with 75.11% of all nursing home placements.

Cardiac and Inflammatory Biomarkers and In-hospital Mortality in Older Medical Patients

JAMDA 15 (2014) 68–72

Monica Comba MD [a], Gianfranco Fonte MD [a], Gianluca Isaia MD, PhD [b,*], Larisa Pricop MD [a], Irene Sciarrillo MD [a], Giuliana Michelis MD [a], Mario Bo MD, PhD [a]

ELSEVIER

1621 patients

Age, y, mean ± SD	82.0 ± 7.7
Male sex, n (%)	571 (35.2)
Systolic blood pressure, mm Hg, mean ± SD	127.7 ± 21.2
Diastolic blood pressure, mm Hg, mean ± SD	73.7 ± 10.6
Heart rate, beats per minute, mean ± SD	83.4 ± 16.9

Variables Associated With In-Hospital Mortality: Multivariate Analysis

Variable	B	SE	*P*	Or
Male sex	2.0864	0.8764	.0173	8.0560
SPMSQ, score categories: 0–2/3–4/5–7/8–10	0.6375	0.3427	.0628	1.8918
Systolic blood pressure, mm Hg	−0.0810	0.0258	.0017	0.9222
SPPB, for each point	−0.8303	0.4249	.0507	0.4359

Conclusions: The main finding of the present study is that these biomarkers, although associated with in-hospital mortality, do not have independent predictive significance when a comprehensive and multi-dimensional evaluation is conducted. The main clinical implication is that our findings should discourage the indiscriminate recourse to measurement of cardiac and inflammatory biomarkers, at least in older medical inpatients, thereby reducing a patient's hospital cost and potentially minimizing further unnecessary diagnostic procedures.

• The American Journal of Medicine (2017) 130, 1144–1147

Mrs. JR is an 85-year-old woman with 7 chronic conditions (diabetes mellitus, hypertension, hyperlipidemia, moderate chronic obstructive pulmonary disease, depression, stage 3 chronic kidney disease [creatinine clearance approximately 50 mL/min], and prior cerebrovascular accident with minimal residual deficits). Mrs. JR lives in a single-family home where she cares for her ailing husband. She has a supportive family that helps with scheduling appointments, paying bills, and transportation.

Mrs. JR presents with fatigue, 3 days of increasing shortness of breath, and chest pain with a pleuritic quality. On admission she is in mild distress with an increased breathing rate.

Her vital signs include an oxygen saturation of 88% on room air rising to 95% on 2L nasal cannula, a temperature of 100.3°F, a blood pressure of 110/60 mm Hg, a heart rate of 90 beats per minute, and a weight of 75 kg. A chest x-ray demonstrates a possible right lower lobe infiltrate and vascular markings consistent with mild pulmonary edema. Electrocardiogram results are essentially normal, without ST-segment deviation. Laboratory data reveal an elevated white blood cell count, creatinine of 1.1 mg/dL, mild anemia (hemoglobin 10 mg/dL), and a positive high-sensitivity cardiac troponin T of 0.20 ng/mL (99% upper reference limit 0.014 ng/mL). Mrs. JR is admitted to the cardiology floor for treatment of presumed community-acquired pneumonia and myocardial infarction. She is placed on telemetry, and antibiotics and anticoagulation are initiated.

Subsequent troponins trend upward at 0.24 ng/mL and 0.26 ng/mL. An echocardiogram shows a normal ejection fraction of 60% with no significant valvular disease.

Mrs. JR has a non–ST-segment elevation myocardial infarction demonstrated by an abnormal rise in troponin level and possible ischemic symptoms. Given her concurrent pneumonia the myocardial infarction can be further categorized as type 2 (as opposed to the more common type 1), which arises from a supply–demand mismatch triggering ischemic injury in the absence of plaque rupture or thrombosis.

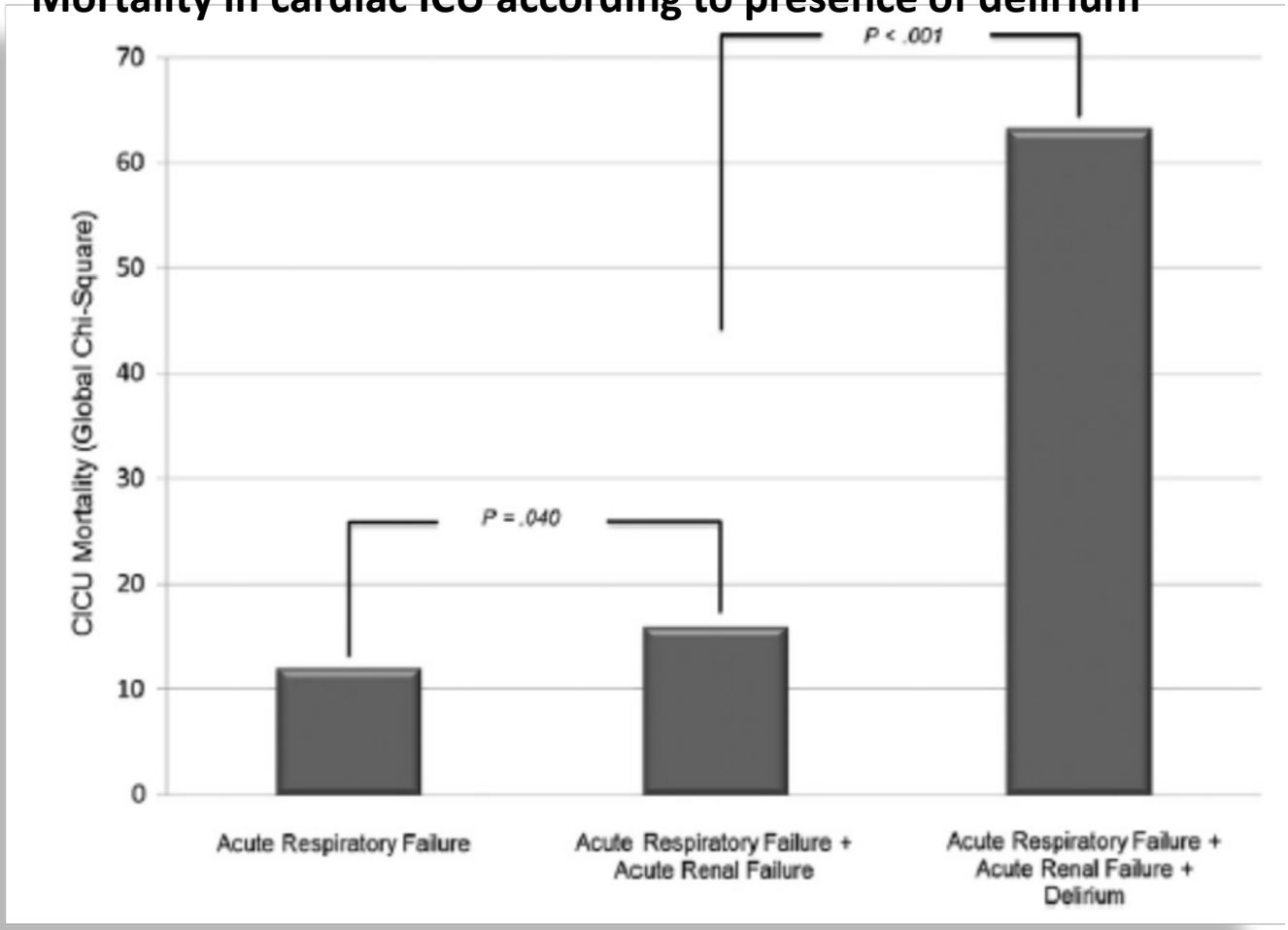
Delirium is a robust predictor of morbidity and mortality among critically ill patients treated in the cardiac intensive care unit (Am Heart J 2015;170:79-86.e1.)

590 patients, delirium prevalence 20.3%

Estimated **risk of delirium** occurrence in this patient (85 yr, polypathology, previous CV accident, acute respiratory distress, infection):

15-20%

Mortality in cardiac ICU according to presence of delirium



Hospital use, institutionalisation and mortality associated with delirium

Age and Ageing 2010; **39:** 470–475
doi: 10.1093/ageing/afq052

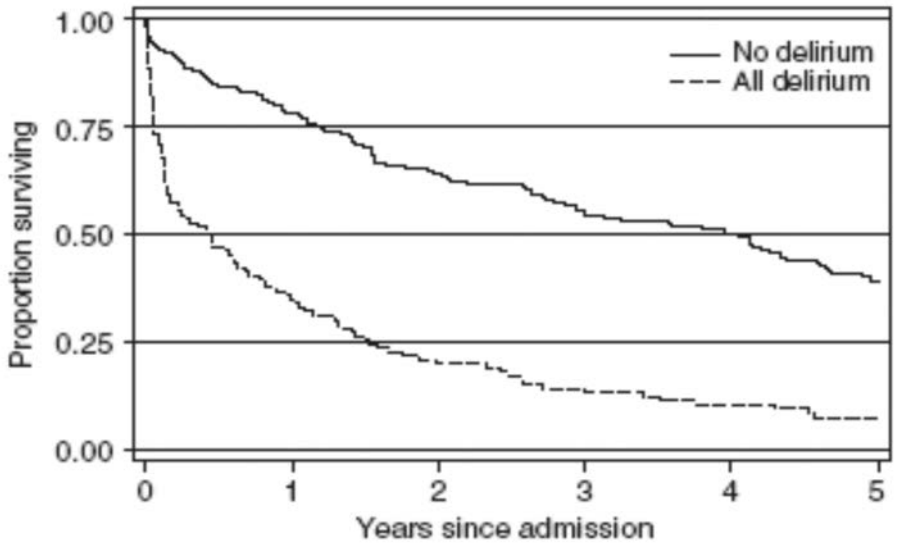


Figure 1. Five-year survival in patients aged ≥75 years admitted to a general medical service.

278 pazienti>75 anni ricoverati in ospedale

Table 3. Rate of institutionalisation (residential or nursing home) over the 5-year post-index admission

	Institutionalisation % (*n*=number of survivors)		
	Delirium	No delirium	*P*-value
Year 1	40.5%, 37	17.6%, 136	0.03*
Year 2	33%, 21	15.1%, 112	0.05
Year 3	28.5%, 14	13.7%, 95	0.15
Year 4	18%, 11	12.6%, 87	0.61
Year 5	13%, 8	11.5%, 61	0.85

Delirium in elderly home-treated patients: a prospective study with 6-month follow-up

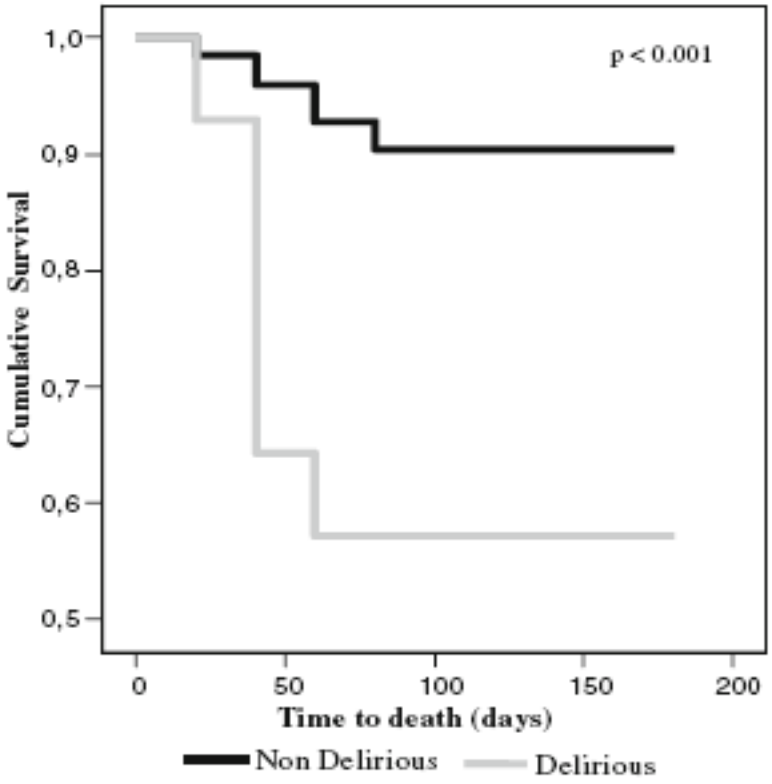
AGE (2009) 31:109–117

Gianluca Isaia · Marco A. Astengo · Vittoria Tibaldi · Mauro Zanocchi · Benedetta Bardelli · Rossella Obialero · Alessandra Tizzani · Mario Bo · Corrado Moiraghi · Mario Molaschi · Nicoletta Aimonino Ricauda

We performed a prospective, non-randomised, observational study with 6-month follow-up on 144 subjects aged 75 years and older consecutively admitted to the hospital for an acute illness and followed in a geriatric hospital ward (GHW) or in a geriatric home hospitalisation service (GHHS).

The incidence of delirium was 16.6% in GHW and 4.7% in GHHS. All

	β	S.E.	RR (CI)	*P*-value
GHW vs GHHS	1.35	0.65	3.84 (1.8–3.7)	0.04
Previous history of delirium: positive vs negative	1.53	1.04	4.64 (0.6–35.7)	0.14
Gender: male vs female	1.02	0.61	2.77 (0.8–9.1)	2.77



Sopravvivenza a 6 mesi, in pazienti con e **senza** delirio durante il ricovero

European Heart Journal (2016) **37**, 267–315

2015 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation

2.1.1.2 Type 2 MI

Type 2 MI is myocardial necrosis in which a condition other than coronary plaque instability contributes to an imbalance between myocardial oxygen supply and demand.[2] Mechanisms include coronary artery spasm, coronary endothelial dysfunction, tachyarrhythmias, bradyarrhythmias, anaemia, respiratory failure, hypotension and severe hypertension. In addition, in critically ill patients and in patients undergoing major non-cardiac surgery, myocardial necrosis may be related to injurious effects of pharmacological agents and toxins.[6]

Antithrombotic treatment (number of patients)	HR for fatal/non fatal bleeding events (95% CI)
Aspirin (47541)	0.93 (0.88-0.98)
Clopidogrel (3717)	1.06 (0.87-1.29)
Clopidogrel+aspirin (2859)	1.66 (1.34-2.04)
Warfarin+aspirin (18345)	1.83 (1.72-1.96)
Warfarin+clopidogrel (1430)	3.08 (2.32-3.91)
Warfarin+aspirin+clopidogrel (1261)	3.70 (2.89-4.76)

Arch Intern Med. *2010;170(16):1433-1441*

E la telemetria?

Journal of Gerontology: MEDICAL SCIENCES
2004, Vol. 59A, No. 7, 755–761

The Deleterious Effects of Bed Rest Among Community-Living Older Persons

Thomas M. Gill, Heather Allore, and Zhenchao Guo

680 community-dwelling subjects aged 70+

"…have you stayed in bed for at least half a day due to an illness, injury, or other problem?"

Table 3. Regression Coefficients for the Effects of Months With Bed Rest on Functional Outcomes*

	TOTALE			FRAGILI NO			FRAGILI SI'		
Functional Outcome†	β	*SE*	*p* Value	β	*SE*	*p* Value	β	*SE*	*p* Value
Disability Measure									
IADL	0.082	0.017	<.001	0.171	0.037	<.001	0.038	0.016	.015
Mobility	0.027	0.009	.003	0.077	0.018	<.001	0.013	0.011	.249
Ability Measure									
Physical activity	−0.088	0.042	.035	−0.141	0.064	.029	−0.049	0.056	.383
Social activity	−0.026	0.007	<.001	−0.036	0.010	<.001	−0.018	0.009	.062

Notes: *Results are adjusted for the baseline value of the respective functional … ace/ethnicity, living situation, years of education, number of chronic conditions, physical frailty (for overall results only), cognitive impairm… toms, and temperature (for physical activity only) as described in Methods.

†A positive β represents functional decline for the disability outcomes, while a … functional decline for the ability outcomes.

SE = standard error; IADL = instrumental activities of daily living.

GERIATRIC-BASED MINDSET

A geriatric-based mindset would view Mrs. JR's myocardial infarction in context of her overall health status, as well as her presenting disease state (acute pneumonia). She has a type 2 myocardial infarction in the setting of multiple chronic conditions, frailty, and some disability in instrumental activities of daily living. Current non–ST-elevation myocardial infarction guidelines do not provide information about type 2 myocardial infarction occurring in the context of other acute conditions.[5] Furthermore, commonly used clinical prediction models supported in guideline statements are developed from randomized clinical trials that include relatively few older participants, and even fewer participants with multiple chronic conditions and concomitant frailty.

• The American Journal of Medicine (2017) 130, 1144–1147

Contextualizing Myocardial Infarction: Comorbidities and Priorities in Older Adults

THE AMERICAN JOURNAL of MEDICINE®

Table Mindset Comparison for Cardiovascular Care

Variable	Evidence-Based Mindset	Geriatric-Based Mindset
Focus	Heart	Heart + host
Multiple chronic conditions	Rare	Common
Care model	Acute episodes	Outpatient continuity
Elevated troponin	Likely type 1 myocardial infarction	May be type 1, 2, injury no infarction
Polypharmacy	Not a concern	Nearly universal
Health outcomes	Cardiovascular events	Patient-centered health outcomes
Examples	Death, myocardial infarction, stroke, revascularization	Events + quality of life, function, symptoms, life prolongation, well-being.
Costs	Financial costs	Treatment burden and financial costs
Examples	Financial cost ($)	Clinic visits, medications per day, side effects of therapy, testing, and financial cost.

- Older adults may present with abnormal cardiac biomarkers in the setting of multiple noncardiac conditions.
- Guideline-based recommendations do not include consideration of myocardial injury due to demand ischemia from another acute condition.
- Awareness of geriatric syndromes and multi-morbidity can enhance decision making for vulnerable older adults.

ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation

European Heart Journal (2011) **32**, 2999–3054

Therapeutic considerations

The elderly are at higher risk of side effects from medical treatment. This is particularly true for the risk of bleeding with antiplatelet agents and anticoagulants, but also for hypotension, bradycardia, and renal failure. In addition to the intrinsic bleeding risk of the elderly, older patients are more frequently exposed to excessive dose of antithrombotic drugs that are excreted by the kidney.[231]

Elderly patients are substantially less likely to undergo an invasive strategy after NSTE-ACS. However, reports from individual trials suggested that the benefit from the invasive strategy was mainly observed in patients >65 years of age.[233,234]

Decisions on how to manage individual elderly patients should be based on ischaemic and bleeding risk, estimated life expectancy, co-morbidities, quality of life, patient wishes, and the estimated risks and benefits of revascularization.

Recommendations for elderly patients

Recommendations	Class [a]	Level [b]	Ref [c]
Because of the frequent	I	C	15, 230
	I	C	230
Choice and dosage of	I	C	230
invasive strategy with	IIa	B	233–235

Temporal trends in the treatment and outcomes of elderly patients with acute coronary syndrome

European Heart Journal (2016) **37**, 1304–1311

13662 ACS patients >=70 years enrolled in the AMIS cohort between 2001 and 2012 according to 4-year periods

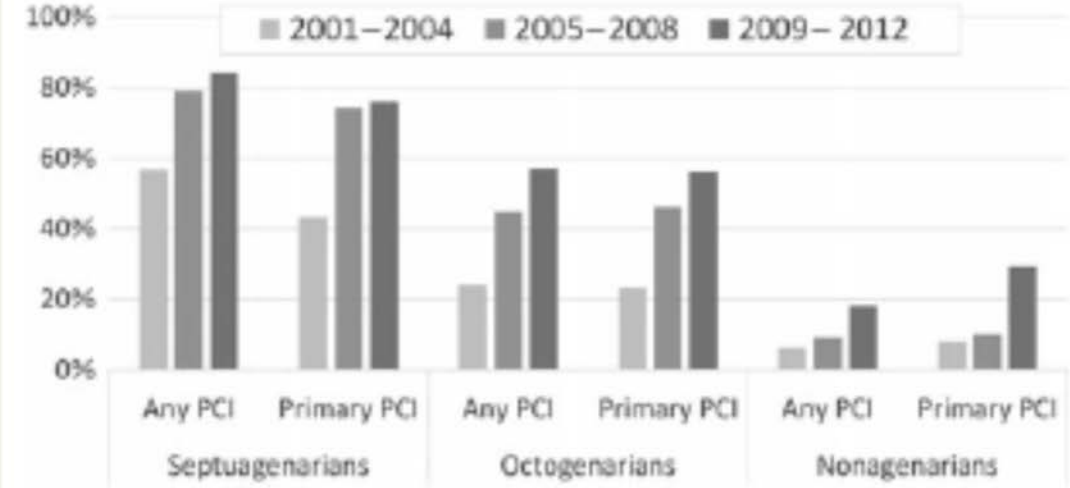
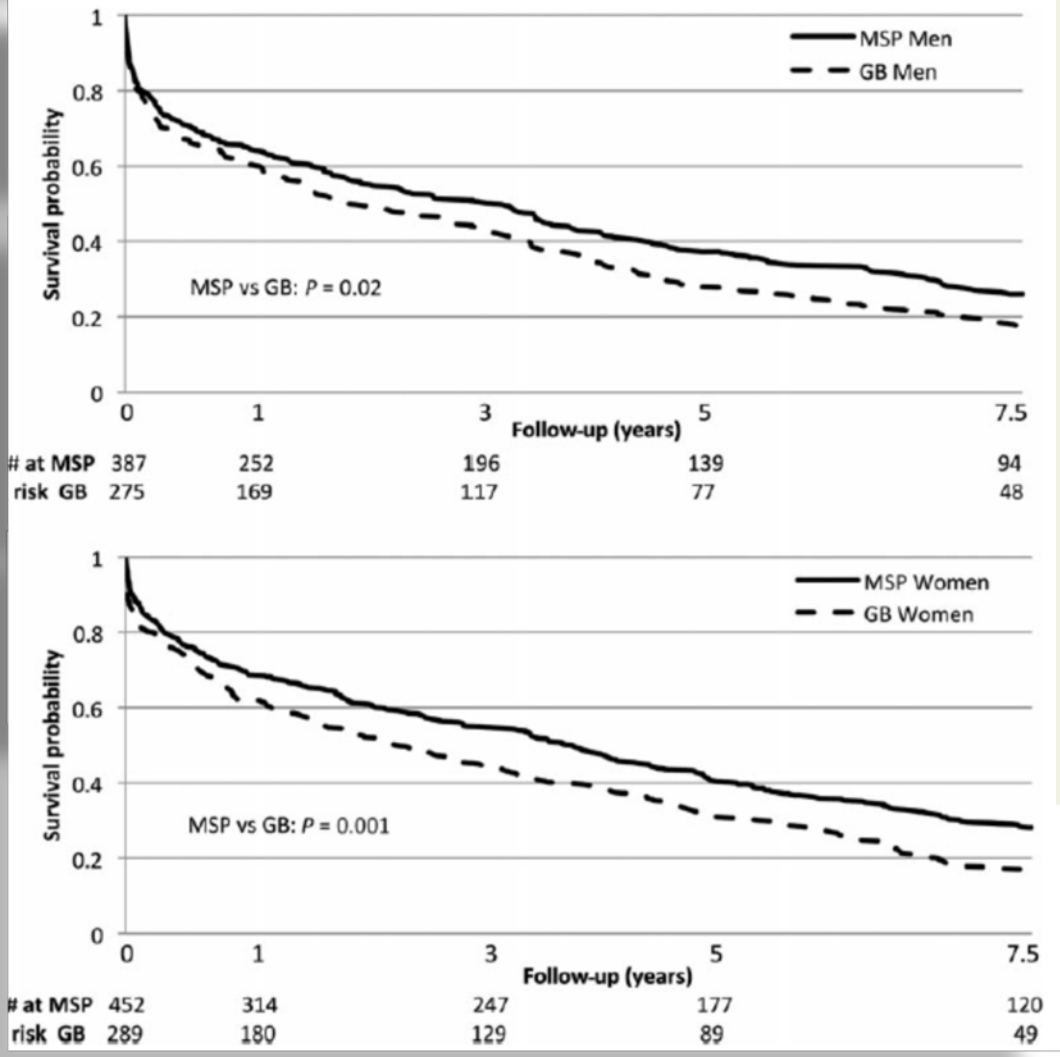


Figure 1 Temporal trends in the use of percutaneous coronary intervention. Use of any percutaneous coronary intervention during the index hospitalization in all study patients and use of primary percutaneous coronary intervention (defined as percutaneous coronary intervention performed within 24 h after hospital admission) in the subgroup of patients with ST-elevation myocardial infarction are displayed separate for septua-, octo-, and nonagenarians.

International comparison of treatment and long-term outcomes for acute myocardial infarction in the elderly: Minneapolis/St. Paul, MN, USA and Göteborg, Sweden

Patients >=75 with AMI



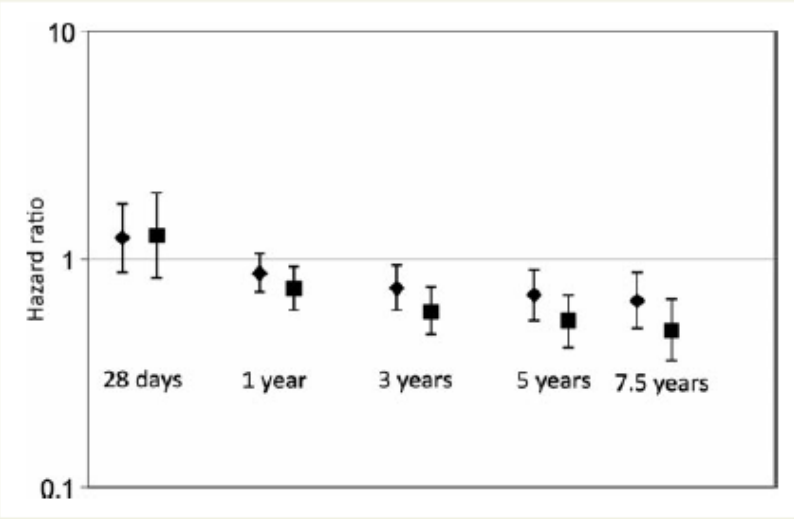


Figure 2 Adjusted for age; history of hypertension, diabetes mellitus, heart failure, PCI/CABG; PCI; thrombolysis; in-hospital use of aspirin, β-blockers, and ACE inhibitors; discharge prescription of aspirin, β-blockers, ACE inhibitors, and lipid lowering agents. Reference: Göteborg, Sweden. Diamonds represent men and squares represent women.

European Heart Journal (2013) **34**, 3191–3197

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: 1057–65

	Invasive strategy group (n=229)	Conservative strategy group (n=228)	Rate ratio	p value
Primary endpoint				
Composite endpoint	93 (41%)	140 (61%)	0·48 (0·37–0·63)	0·0001
Follow-up patient years	419·54	307·07		
Components of the primary endpoint				
Myocardial infarction	39 (17%)	69 (30%)	0·50 (0·33–0·75)	0·0003
Follow-up patient years	510·76	444·37		
Need for urgent revascularisation	5 (2%)	24 (11%)	0·19 (0·05–0·52)	0·0001
Follow-up patient years	588·12	536·69		
Stroke	8 (3%)	13 (6%)	0·61 (0·22–1·60)	0·26
Follow-up patient years	590·41	577·45		
Death from any cause	57 (25%)	62 (27%)	0·87 (0·59–1·27)	0·53
Follow-up patient years	496·92	481·26		
Complications (bleeding)				
Major	4 (2%)	4 (2%)	NA	NA
Gastrointestinal	2 (1%)	2 (1%)	NA	NA
Pericardial tamponade	1 (<1%)	0	NA	NA
Traumatic epidural haematoma	1 (<1%)	0	NA	NA
Traumatic subdural haematoma	0	1 (<1%)	NA	NA

Interpretation In patients aged 80 years or more with NSTEMI or unstable angina, an invasive strategy is superior to a conservative strategy in the reduction of composite events. Efficacy of the invasive strategy was diluted with increasing age (after adjustment for creatinine and effect modification). The two strategies did not differ in terms of bleeding complications.

Frailty and other geriatric conditions for risk stratification of older patients with acute coronary syndrome

(Am Heart J 2014;168:784-791.e2.)

*342 patients >=65years with SCA (mean age 77), evaluated for **frailty, physical or instrumental disability, cognitive impairment and comorbidity**; outcome: post-discharge mortality and 30 day AMI/death*

Fried score[8] (0-5 points)

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

Validity of Charlson Comorbidity Index in patients hospitalised with acute coronary syndrome. Insights from the nationwide AMIS Plus registry 2002–2012

Dragana Radovanovic,[1] Burkhardt Seifert,[2] Philip Urban,[3] Franz R Eberli,[4] Hans Rickli,[5] Osmund Bertel,[6] Milo A Puhan,[2] Paul Erne,[7] on behalf of the AMIS Plus Investigators

Heart 2014; 100:288-94

N = 29,620 ACS (2002-2012)
47% age >65 years

CCI = Charlson Comorbidity Index

	CCI=0	CCI=1	CCI=2	CCI≥3	p Values
Patients, n (%)	15 754	6708	3334	3824	
Male gender (%)	11 896/15 754 (75.5)	4815/6708 (71.8)	2237/3334 (67.1)	2638/13 824 (69.0)	<0.001
Mean age (SD), years	62.3 (12.9)	67.9 (12.6)	72.2 (11.9)	74.9 (10.9)	<0.001
Immediate therapy					
Aspirin (%)	15 219/15 705 (96.9)	6292/6681 (94.2)	3083/3321 (92.8)	3369/3805 (88.5)	<0.001
P2Y12 blocker (%)*	12 746/15 669 (81.3)	5030/6662 (75.5)	2216/3307 (67.0)	2245/3791 (59.2)	<0.001
GPIIb/IIIa inhibitors (%)	5243/15 438 (34.0)	1755/6581 (26.7)	699/3265 (21.4)	561/3745 (15.0)	<0.001
Heparinst (%)	13 979/15 639 (89.4)	5734/6658 (86.1)	2799/3303 (84.7)	3054/3791 (80.6)	<0.001
β blocker (%)	10 395/15 571 (66.8)	4416/6631 (66.6)	2147/3304 (65.0)	2296/3779 (60.8)	<0.001
Statin (%)	12 222/15 603 (78.3)	4955/6645 (74.6)	2333/3778 (64.6)	2441/3778 (64.6)	<0.001
ACEI/ARB (%)	7841/15 564 (50.4)	3583/6632 (54.0)	1839/3303 (55.7)	2022/3786 (53.4)	<0.001
Any PCI (%)	13 241/15 752 (84.1)	5047/6708 (75.2)	2145/3334 (64.3)	1874/3824 (49.0)	<0.001
Reperfusion in STEMI patients	9480	3453	1538	1690	
Thrombolysis (%)	681 (7.2)	199 (5.8)	68 (4.4)	48 (2.8)	<0.001
Primary PCI (%)	7496 (79.1)	2434 (70.5)	928 (60.3)	794 (47.0)	<0.001

ORIGINAL ARTICLE

Di Bari M, *et al. Heart* 2014;**0**:1–6.

Decreased usage and increased effectiveness of percutaneous coronary intervention in complex older patients with acute coronary syndromes

Studio osservazionale su **698 pazienti >75 anni** (**83 anni**, 358 F) dal registro AMI in Firenze comprensivo di tutte le **SCA** ricoverate in un anno

Table 3 M
application o

Variable
History of coron
History of heart
Silver code scor
Admission to h
Type of infarcti
Killip class in a
Haemoglobin <
GFRc <30 mL/m

SILVER CODE *Di Bari M, et al. J Gerontol A Biol Sci Med Sci. 2009*	
75-79 anni	Rif.
80-84 anni	3
85+ anni	9
Sesso (M vs. F)	2
Stato civile (Non coniugato/ vedovo/ divorziato vs. Coniugato)	1
Ricovero in DH (Sì vs. No)	5
Ricovero ordinario e diagnosi:	
Nessun ricovero	rif.
Mal. Respiratorie	6
Neoplasie (<5 anni)	11
Altre	2
N° farmaci (8+ vs. <8)	2

ession model

p Value
<0.001
<0.001
0.039
0.086
0.003
0.003
0.086
0.014

ORIGINAL ARTICLE

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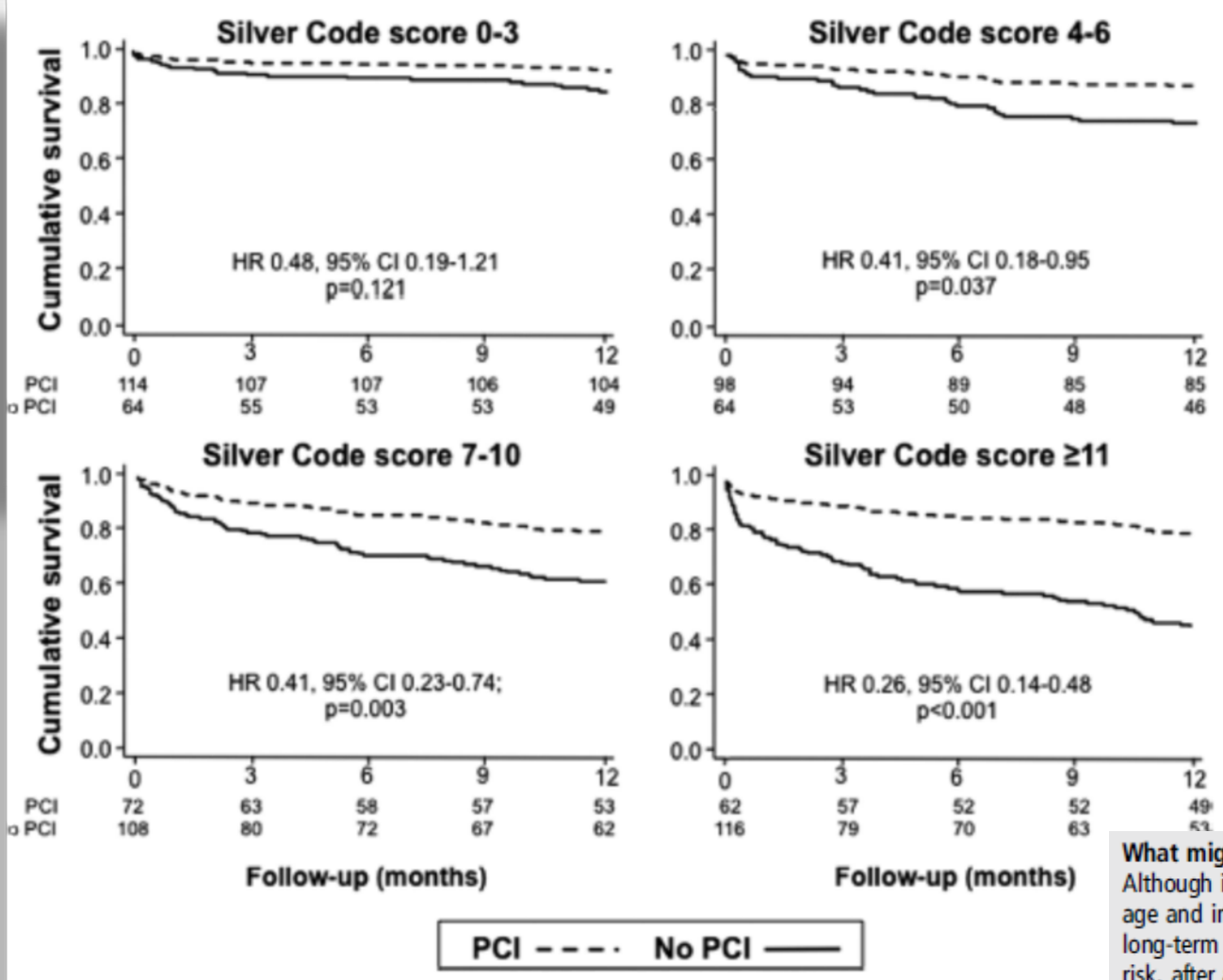


What might this study add?
Although its application progressively decreased with advancing age and increasing background risk, PCI offered greater long-term survival benefit in older subjects with more severe risk, after adjusting for possible contraindications.

Education in Heart

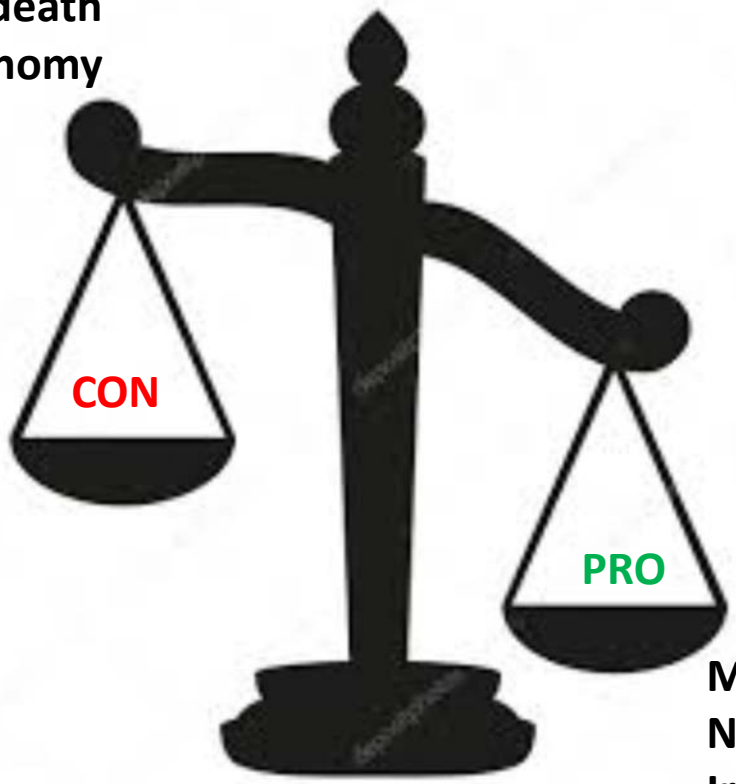
To cite: Cockburn J, Hildick-Smith D, Trivedi U, *et al*. *Heart* 2017;**103**:316–324.

ACUTE CORONARY SYNDROMES

Coronary revascularisation in the elderly

James Cockburn, David Hildick-Smith, Uday Trivedi, Adam de Belder

Low risk SCA
Other competing risk of death
Loss of autonomy



Moderate-High risk SCA
No/few competing risk of death
Irrespective of «frailty»

• The American Journal of Medicine (2017) 130, 1144–1147

Contextualizing Myocardial Infarction: Comorbidities and Priorities in Older Adults

THE AMERICAN JOURNAL of MEDICINE®

Table Mindset Comparison for Cardiovascular Care

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Multiple chronic conditions	Rare	Common
Care model	Acute episodes	Outpatient continuity
Elevated troponin	Likely type 1 myocardial infarction	May be type 1, 2, injury no infarction
Polypharmacy	Not a concern	Nearly universal
Health outcomes	Cardiovascular events	Patient-centered health outcomes
Examples	Death, myocardial infarction, stroke, revascularization	Events + quality of life, function, symptoms, life prolongation, well-being.
Costs	Financial costs	Treatment burden and financial costs
Examples	Financial cost ($)	Clinic visits, medications per day, side effects of therapy, testing, and financial cost.

Ci sono dei motivi «extracoronarici/extracardiaci» per cui in alcuni pazienti anziani con SCA/NSTEMI moderata l'approccio invasivo potrebbe essere vantaggioso per il paziente?

ORIGINAL CONTRIBUTION

JAMA, 2004;292:2115-2124 www.jama.com

Hospitalization, Restricted Activity, and the Development of Disability Among Older Persons

Table 4. Association Between New Intervening Events and Disability According to Physical Frailty at Baseline

	Hazard Ratio (95% Confidence Interval)*		
OSPEDALIZZAZIONE	QUALSIASI DISABILITA'	DISABILITA' PERMANENTE	DISABILITA' & ISTITUZIONALIZZAZIONE
GIA' FRAGILI			
NON FRAGILI			
Restricted activity only§			
Physically frail at baseline	4.13 (2.87-5.95)	2.76 (1.39-5.46)	4.52 (1.95-10.5)
Not physically frail at baseline	6.45 (4.06-10.3)	3.30 (2.15-5.07)	1.71 (0.35-8.29)

*Hazard ratios are adjusted for age, sex, race/ethnicity, living alone, years of education, chronic conditions, cognitive impairment, depressive symptoms, and prior intervening events.

†The exposure period was the month prior to the assessment of disability. The comparison group included participants without an acute hospital admission or restricted activity.

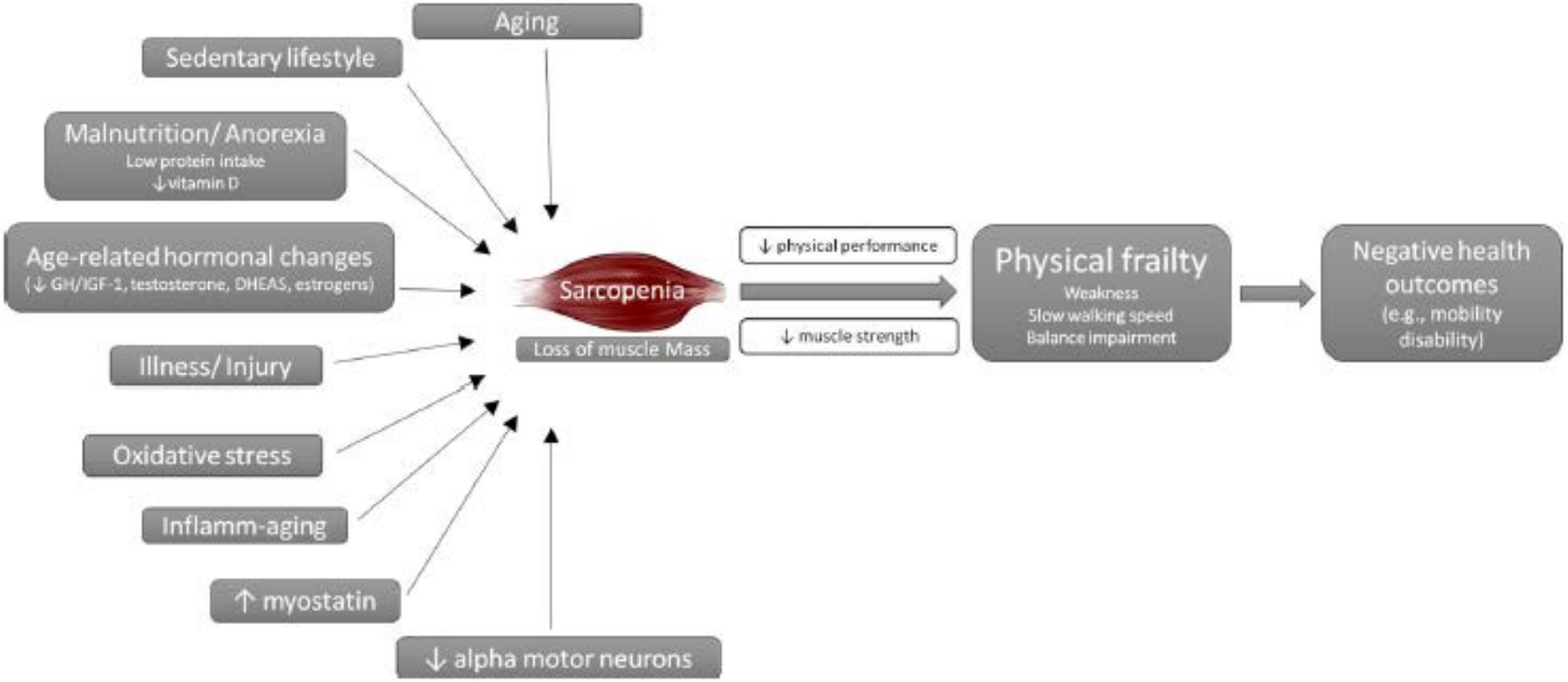
‡There was a statistical interaction with physical frailty for any disability ($P<.001$) and persistent disability ($P = .002$), but not for disability with nursing home admission ($P = .22$).

§There were no statistical interactions with physical frailty for any of the 3 disability outcomes.

European Geriatric Medicine 7 (2016) 197–200

Sarcopenia and frailty: From theoretical approach into clinical practice

F. Landi [a,*], A. Cherubini [b], M. Cesari [c], R. Calvani [a], M. Tosato [a], A. Sisto [a], A.M. Martone [a], R. Bernabei [a], E. Marzetti [a]



Importance of frailty in patients with cardiovascular disease

European Heart Journal (2014) 35, 1726–1731
doi:10.1093/eurheartj/ehu197

Mandeep Singh[1]*, Ralph Stewart[2], and Harvey White[2]

Table 5 Reasons for evaluating whether frailty is present in patients with cardiovascular diseases

1	Population ageing is increasing the number of frail patients with CVD
2	Eye ball or end of the bed assessments of frailty may not be reliable
3	Frailty increases the risks of cardiac surgery and other cardiovascular interventions
4	Frailty increases the risk of cardiovascular and non-cardiovascular mortality and the need for future institutional care
5	Frail patients may have more complications from medical treatments
6	The benefits of some cardiac interventions may be less in frail elderly patients because of competing risks. Non-cardiac deaths dominate following TAVR, PCI, and CABG

Determinants of recourse to hospital treatment in the elderly

Alessandro Sona[1], Guido Maggiani[1], Marco Astengo[1], Monica Comba[1], Valentina Chiusano[1], Gianluca Isaia[1], Chiara Merlo[1], Larisa Pricop[1], Eleonora Quagliotti[1], Corrado Moiraghi[2], Gianfranco Fonte[1], Mario Bo[1]

European Journal of Public Health, Vol. 22, No. 1, 76–80

Table 2 Conditions independently associated with hospital admission

	β	SE (β)	OR	*P*-value
Access code	0.174	0.066	1.189	0.009
Visited by GP	0.566	0.151	1.7625	<0.001
Number of prescribed drugs	0.052	0.024	0.949	0.032
Age	0.032	0.009	0.967	<0.001
ADL	0.198	0.052	0.819	<0.001
APACHE II	0.092	0.225	0.911	<0.001
COPD	0.707	0.267	0.493	0.008
Heart failure				

Table 3 Conditions independently associated with a frequent use of the emergency department

	β	SE (β)	OR	*P*-value
Level of education	−0.153	0.074	0.857	0.037
Arrhythmia	0.499	0.151	1.647	0.001
Pulmonary neoplasm	0.909	0.445	2.482	0.041
ADL	−0.435	0.083	0.647	<0.001
Number of prescribed drugs	0.136	0.023	1.145	<0.001
CI	0.122	0.033	1.130	<0.001

Table 4 Conditions independently associated with repeated hospitalization

	β	SE (β)	OR	*P*-value
Arrhythmia	0.425	0.167	1.530	0.011
Bowel diseases	0.955	0.458	2.600	0.037
ADL	−0.380	0.093	0.683	<0.001
Number of prescribed drugs	0.125	0.026	1.133	<0.001
CI	0.133	0.043	1.143	0.002

V.S.P., maschio, 89 anni

Ipertensione arteriosa. IRC moderata. Lieve anemia ipocromica.

Ecocardio 20 g Omnic

Cognitivame

Nella notte PA e rialzo

cTnT. Trasfer trivasale (DA

prox critica, n indicazione a

completame ervata

Crea 1.44 in one 13.4

Dimesso **4/9** Lasix 25 bid

Cardioasa 1

Accede in PS **80 max**

Trasfuso e ri

EGDscopia n

Alla dimissio

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	

IPOTENSIONE

Diuretici

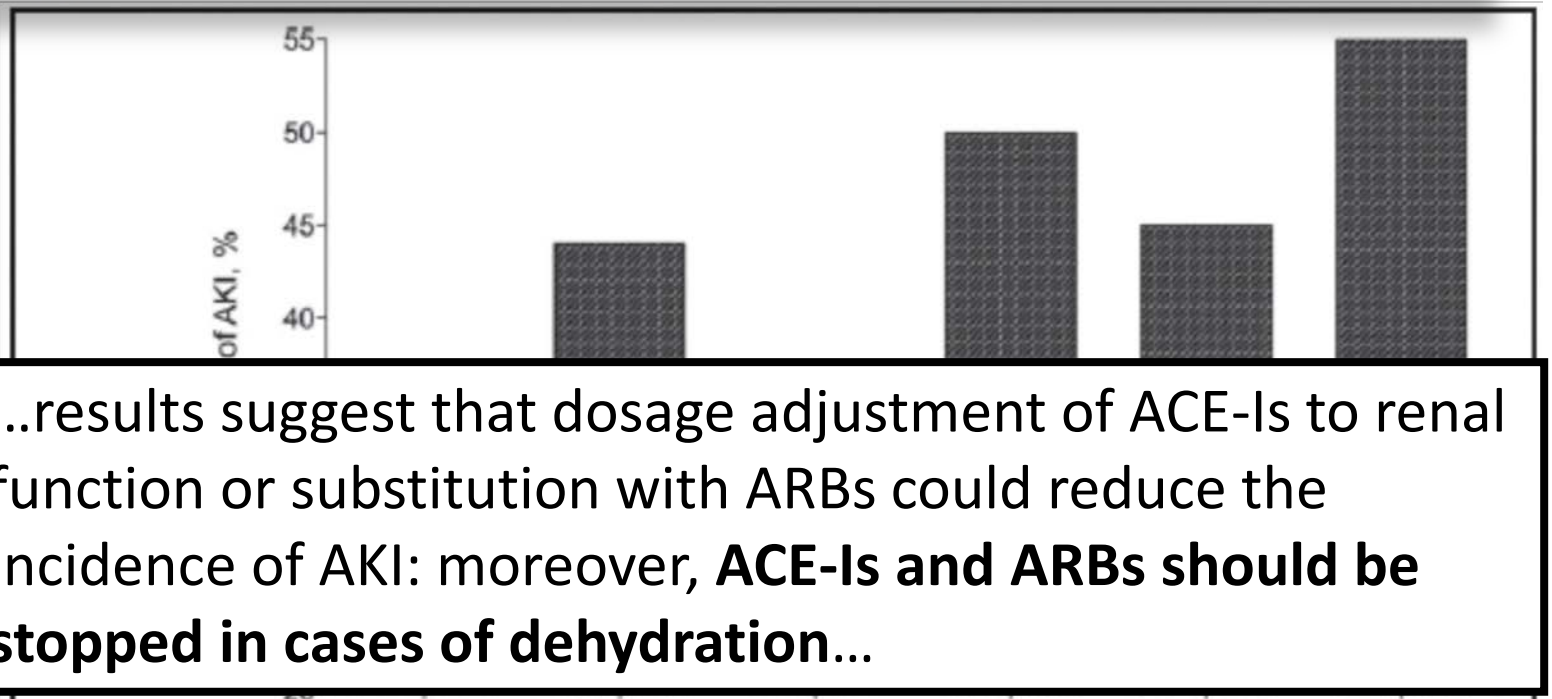
TRIPLE WHAMMY

ACE-inibitori

The Journal of Clinical Hypertension Vol 18 | No 6 | June 2016

Acute Kidney Injury in Elderly Patients With Chronic Kidney Disease: Do Angiotensin-Converting Enzyme Inhibitors Carry a Risk?

Ville	All Patients (N=324)	No AKI (n=195)	AKI (n=129)	*P* Value
Age, y	77±12.1	77.9±12	75.6±12.2	.0379
Men, %	49.1	44.6	55.8	.0484



…results suggest that dosage adjustment of ACE-Is to renal function or substitution with ARBs could reduce the incidence of AKI: moreover, **ACE-Is and ARBs should be stopped in cases of dehydration**…

	RAS blockers	ARBs	ACEis	ACEis OVD-	ACEis OVD+
Pr>chi2 =	**0.0272**	0.4614	**0.0054**	0.0676	**0.0045**
OR (95%CI)	1.70 (1.03-2.82)	na	2.10 (1.20-3.70)	na	2.56 (1.26-5.20)

2013 ESH/ESC Guidelines for the management of arterial hypertension

The Task Force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC)

Sections 4.2.6 and 4.3.4.2 mentioned that RCTs of antihypertensive treatment do not provide consistent evidence that SBP target should be <130 mmHg in hypertensive patients with overt CHD, nor is there consistent evidence that antihypertensive treatment should be initiated with high normal BP. On the contrary, a number of the correlative analyses raising suspicion about the existence of a J-curve relationship between achieved BP and CV outcomes included a high proportion of CHD patients,[317,318,322,323] and it is not unreasonable that, if a J-curve occurs, it may occur particularly in patients with obstructive coronary disease. The recommendation to lower SBP to <140 mmHg is indir-

Treatment of hypertension in patients 80 years and older: the lower the better? A meta-analysis of randomized controlled trials

Journal of Hypertension 2010, 28:1366–1372

*The meta-regression suggested that a **reduction in mortality was achieved in trials with the least BP reductions and the lowest intensity of therapy**.*

Documento ANMCO/GICR-IACPR/GISE
L'organizzazione dell'assistenza nella fase post-acuta delle sindromi coronariche

Commissione ANMCO/GICR-IACPR/GISE

3.2.2 Le indicazioni delle linee guida

Le linee guida sulla gestione della malattia coronarica cronica stabile della Società Europea di Cardiologia raccomandano in classe IA, l'uso degli ACE-inibitori (o degli ARB, quando i primi non sono tollerati) per la prevenzione delle recidive di eventi dopo SCA[59]. Entrambe le classi di farmaci hanno dimostrato di ridurre l'incidenza di mortalità totale, reinfarto, ictus e SC in alcuni sottogruppi di pazienti, particolarmente quelli con SC, pregressa malattia vascolare isolata[100-102] o diabete ad alto rischio[103]. È pertanto appropriato **considerare l'uso degli ACE-inibitori, a meno di controindicazioni, per la terapia di pazienti con cardiopatia ischemica cronica stabile, specialmente se coesistono ipertensione arteriosa, disfunzione sistolica ventricolare sinistra (FE 40%), diabete o nefropatia cronica**. Le stesse indicazioni sono riportate nelle linee guida statunitensi[104]. **D'altra parte non tutti i trial clinici hanno dimostrato che gli ACE-inibitori riducono gli eventi fatali e non fatali anche nei pazienti con aterosclerosi e funzione ventricolare sinistra preservata**.

Quale prevenzione e su quali basi di evidenza scientifica l'uso di ACE inibitori in un paziente di 89 anni rivascolarizzato per NSTEMI con funzione sistolica conservata, ipertensione arteriosa lieve (grado 1), con IRC?

Studio EUROPA; perindopril, età media 60 anni, pazienti con IRC esclusi

poiché l'anziano è più sensibile e vulnerabile agli eventi avversi delle terapie mediche ***la prevenzione cardiovascolare nel vecchio deve mirare anche e soprattutto a***

- ***Mantenimento e miglioramento dell'autonomia funzionale***
- ***Mantenimento della performance psico-cognitiva***
- ***Prevenzione del danno iatrogeno***
- ***Prevenzione delle cadute***

JAMA October 1, 2014 Volume 312, Number 13

VIEWPOINT

Evidence-Based Practice Is Not Synonymous With Delivery of Uniform Health Care

We are now in an evidence free zone, and there are problems with using experience as a guide, which sometimes gets it wrong

…one size does not fit all…

JAMA October 1, 2014 Volume 312, Number 13

VIEWPOINT

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We are now in an evidence free zone, and there are problems with using experience as a guide, which sometimes gets it wrong

Patient centered care and health outcomes

Moving from GLs, define individual therapeutic approach and target

Avoid polypharmacy; individualized and wise use of drugs with consistent prospective of clinical net benefit in the short period

Education in Heart

ACUTE CORONARY SYNDROMES

Coronary revascularisation in the elderly

James Cockburn, David Hildick-Smith, Uday Trivedi, Adam de Belder

To cite: Cockburn J, Hildick-Smith D, Trivedi U, *et al*. *Heart* 2017;**103**:316–324.

Either way, each patient deserves to be judged on their individual performance status as biological age often does not represent chronological age with considerable individual variation in comorbidities and physical capabilities. As such, the pragmatic approach is to treat them on an individual basis, assessing them on their history and the 'end of the bed test'.