

Lo scompenso cardiaco avanzato nel paziente anziano comorbido

Francesco Cacciatore

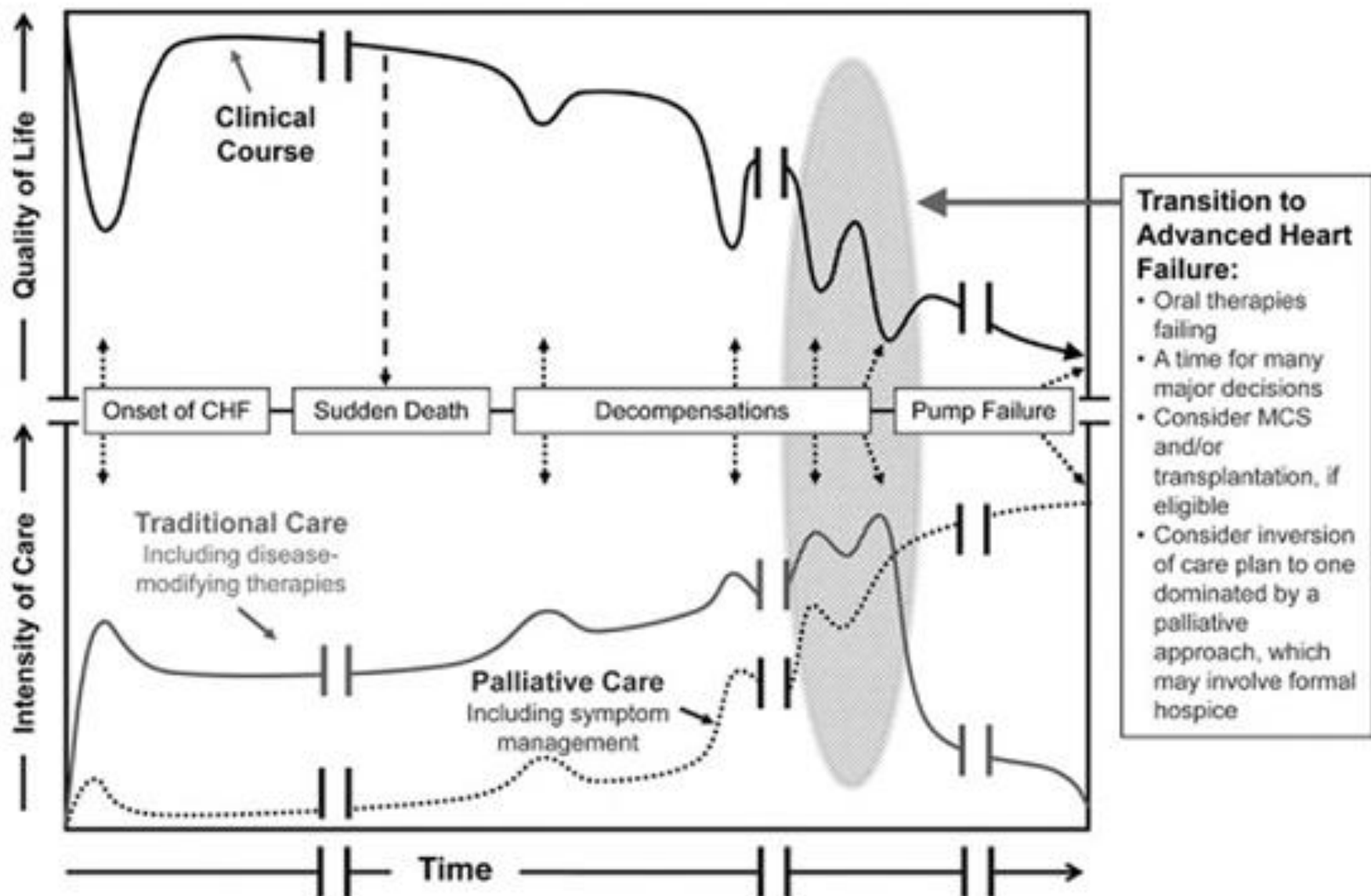
UOSD Chirurgia dei Trapianti ed
Assistenza meccanica del Circolo

AORN – Ospedale Monaldi - Napoli

Advanced Heart Failure



- Advanced heart failure is a term used when the condition has progressed to a point where traditional therapies and symptom management are no longer working.
- Of the more than 6 million American adults living with heart failure, about ten percent have advanced heart failure, and treatment decisions can become more complex



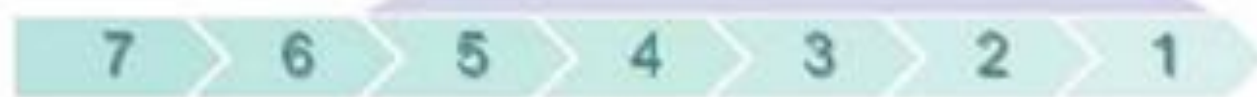
ACC/AHA – HFSA – ESC criteria to identify Advanced Heart Failure

	Refractory Symptoms				Exercise Intolerance	Objective Evidence of Severe Cardiac Dysfunction				
	Severe Symptoms	Multiple Hospitalizations	Optimal Therapy	Inotropic Support	Fluid Retention and/or Peripheral Hypoperfusion	Severe Functional Capacity Impairment	Reduced Ejection Fraction	Doppler Echocardiography	Hemodynamics	Elevated Natriuretic Peptides
ACC/AHA	X	X	X	—	—	X	X	—	—	—
HFSA	X	X	X	X	—	X	—	—	—	—
ESC	X	X	X	—	X	X	X	X	X	X

AHA/ACC Stages



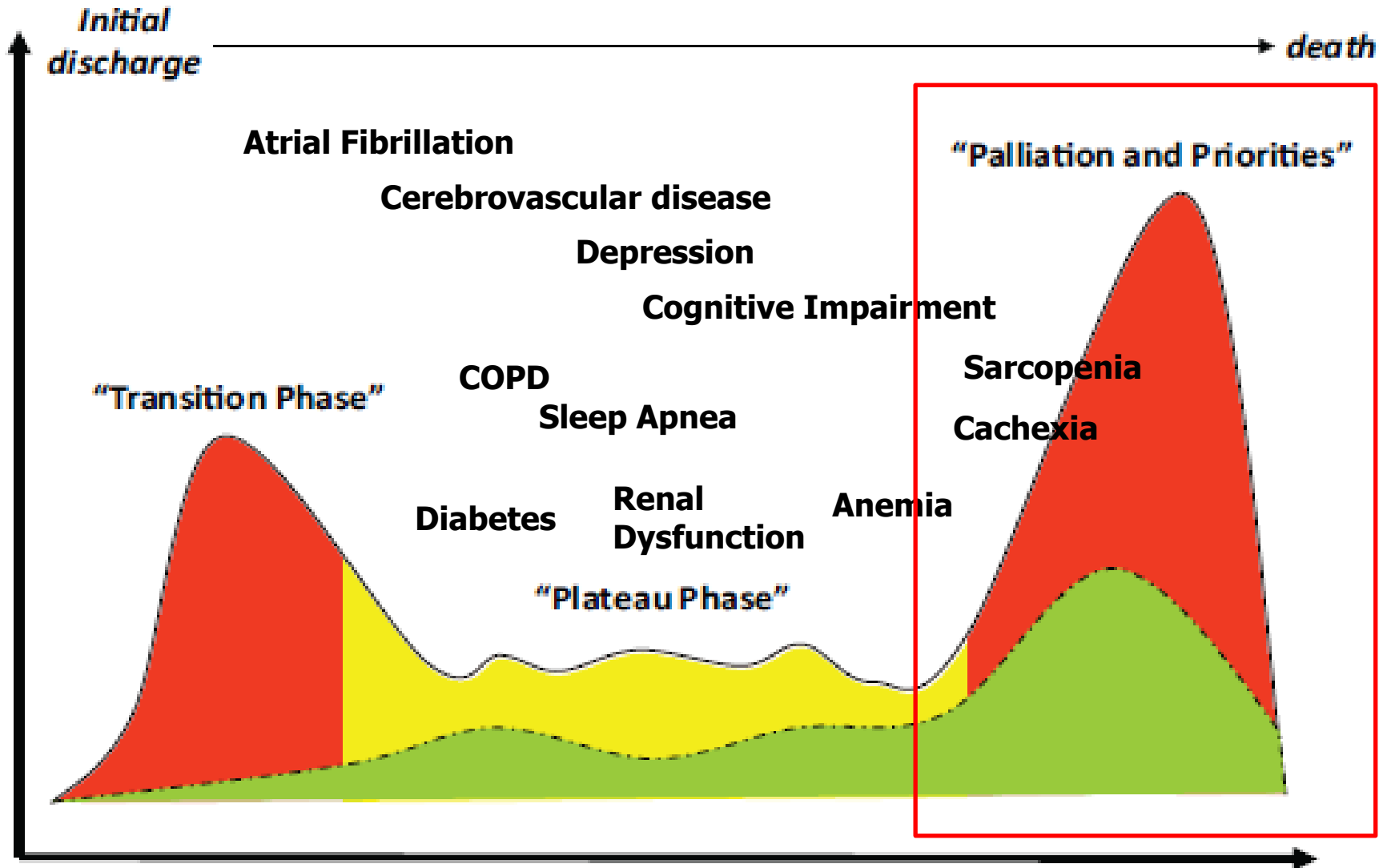
INTERMACS Profiles



INTERMACS (Interagency Registry for Mechanically Assisted Circulatory Support) Scale for Classifying Patients With Advanced Heart Failure

Profiles	Definition	Description
INTERMACS 1	<i>"Crash and burn"</i>	Hemodynamic instability in spite of increasing doses of catecholamines and/or mechanical circulatory support with critical hypoperfusion of target organs (severe cardiogenic shock)
INTERMACS 2	<i>"Sliding on inotropes"</i>	Intravenous inotropic support with acceptable blood pressure but rapid deterioration of kidney function, nutritional status, or signs of congestion
INTERMACS 3	<i>"Dependent stability"</i>	Hemodynamic stability with low or intermediate, but necessary due to hypotension, doses of inotropics, worsening of symptoms, or progressive kidney failure
INTERMACS 4	<i>"Frequent flyer"</i>	Temporary cessation of inotropic treatment is possible, but the patient presents frequent symptom recurrences and typically with fluid overload
INTERMACS 5	<i>"Housebound"</i>	Complete cessation of physical activity, stable at rest, but frequently with moderate water retention and some level of kidney dysfunction
INTERMACS 6	<i>"Walking wounded"</i>	Minor limitation on physical activity and absence of congestion while at rest. Easily fatigued by light activity
INTERMACS 7	<i>"Placeholder"</i>	Patient in NYHA functional class II or III with no current or recent unstable water balance

Natural History of Heart Failure



Median Time from hospital discharge

Comorbidity Assessment as Bridge to Decision in Advanced Heart Failure

- Surgery
- Device
- Pharmacological treatment
- Life-style modification – Fluid/salt management
- Rehabilitation
- Palliative care

Advanced Heart Failure



Take steps to manage HF.



Monitored
Cardiac Rehab



Lifestyle
Changes



Prescription
Medications



Implanted
Devices



Surgical
Procedures

Your action plan may include a combination of these steps.

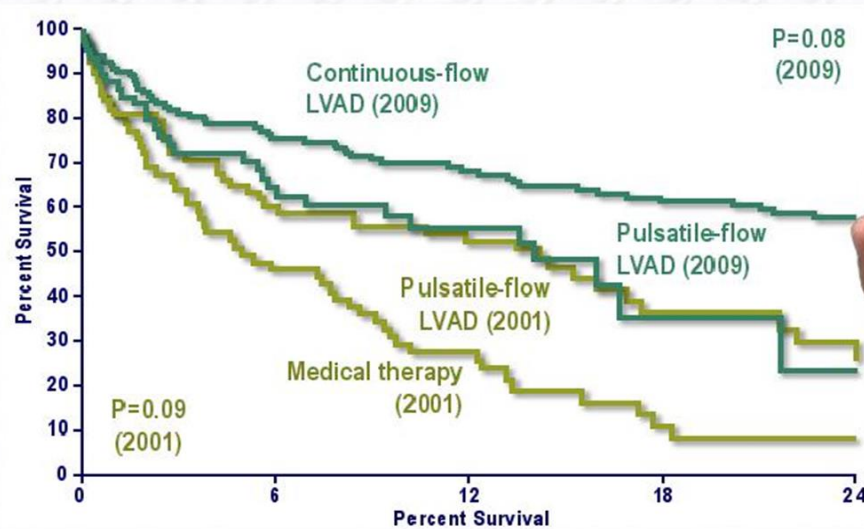
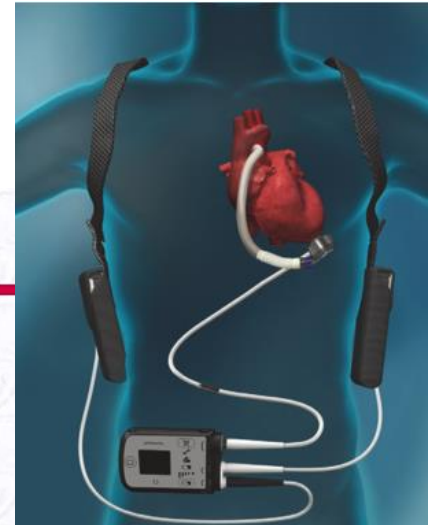
14,560 patients on the active organ waiting list on January 1, 2016

10,808 registrations on the waiting list in 2015

7,145 organ transplants from deceased donors in 2015

Indications for MCS

- Increasing waiting lists for heart transplantation.
- Limited organ availability.
- Improvements of LVAD technology.



Indications for MCS

Upgrade of LVAD indication for destination therapy

Recommendations	Class	Level	Ref
An LVAD or BiVAD is recommended in selected patients with end-stage HF despite optimal pharmacological and device treatment and who are otherwise suitable for heart transplantation, to improve symptoms and reduce the risk of HF hospitalization for worsening HF and to reduce the risk of premature death while awaiting transplantation.	I	B	254 255 258

LVAD as destination: pts not suitable for TX but with a survival > 1 year with a good functional status to improve symptoms, reduce hospitalization and improve survival

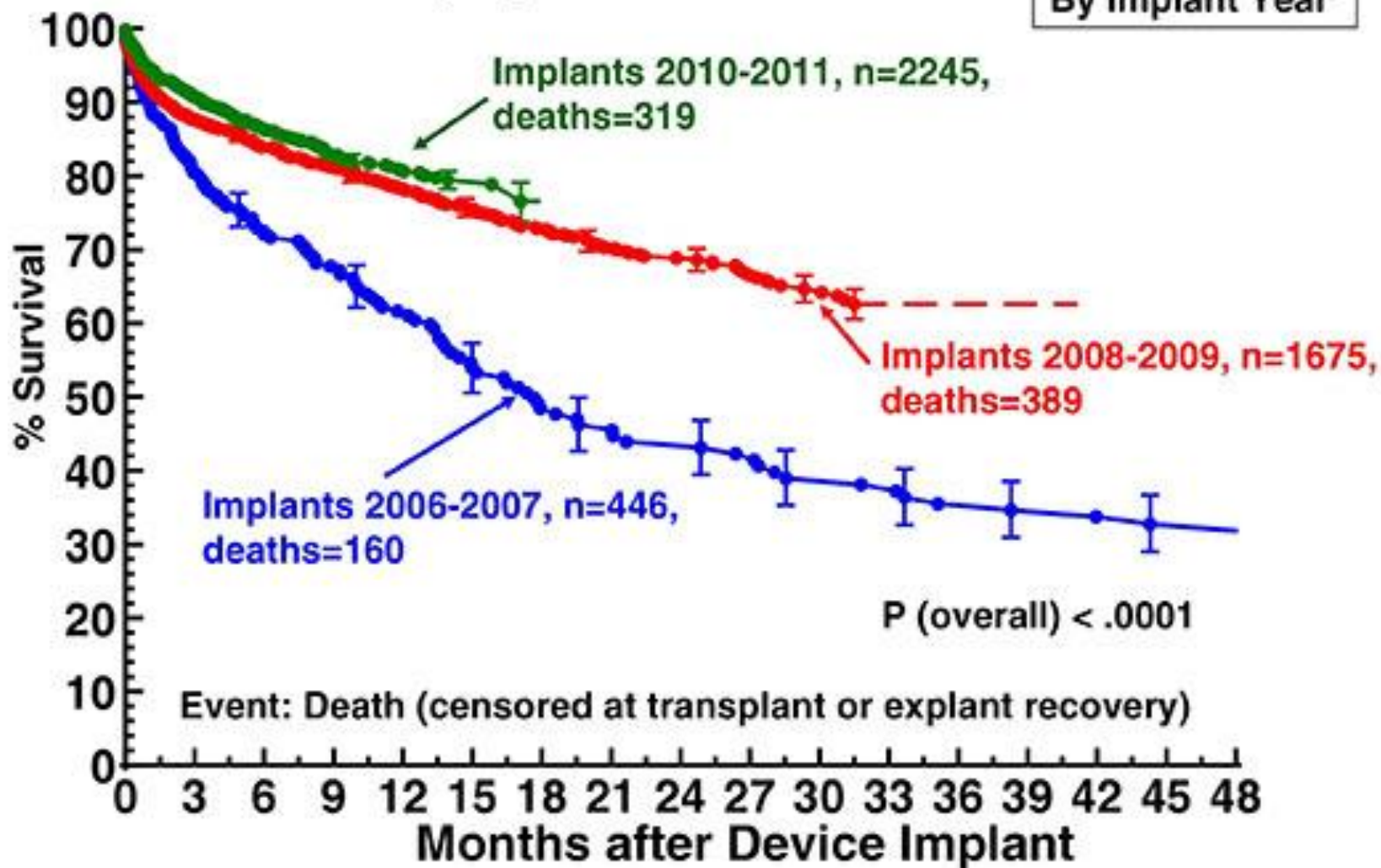
Patients eligible for LVAD or BiVAD implantation

Patients with >2 months of severe symptoms despite optimal medical and device therapy and more than one of the following:

- LVEF <25% and, if measured, peak VO_2 <12 mL/kg/min.
- ≥ 3 HF hospitalizations in previous 12 months without an obvious precipitating cause.
- Dependence on i.v. inotropic therapy
- Progressive end-organ dysfunction (worsening renal and/or hepatic function) due to reduced perfusion and not to inadequate ventricular filling pressure (PCWP ≥ 20 mmHg and SBP ≤ 80 –90 mmHg or CI ≤ 2 L/min/m²).
- Deteriorating right ventricular function.

Primary implants: n=4366

By Implant Year



ADDITIONAL NOTES

-No alarms have been logged in the last 14 days of available data.

OSPEDALE: AORN Monaldi - Napoli

ID PAZIENTE: DC15052015
DATA IMPIANTO: 15/05/15
POSIZIONAMENTO OUTFLOW: sorta ascendente

Misura	23-giu-16	21-lug-16	8-set-16	27-ott-16	24-nov-16	25-gen-17	23-feb-17	22-mar-17	27-apr-17	25-mag-17	29-giu-17	3-ago-17	14-set-17	12-ott-17	9-nov-17
Flusso [l/min]	4,2	3,9	4,0	3,5	4,0	3,9	4,3	4,0	3,8	3,9	3,8	4,3	4,1	3,6	3,1
Velocità [giri/min]	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
Potenza [W]	3,0	2,9	3,0	2,9	2,9	2,9	3,0	2,9	2,9	2,9	3,0	3,1	3,0	3,1	3,0
Allarmi	Normal Power Consumption	Normal Power Consumption	Normal Power Consumption	Normal Power Consumption	Normal Power Consumption	Normal Power Consumption	Normal Power Consumption	Normal Power Consumption	Normal Power Consumption	Normal Power Consumption	Normal Power Consumption with Intermittent Suction	Normal Power Consumption	Normal Power Consumption NOTA: effettuata sostituzione Controller con versione Con 2.0	Normal Power Consumption	Normal Power Consumption

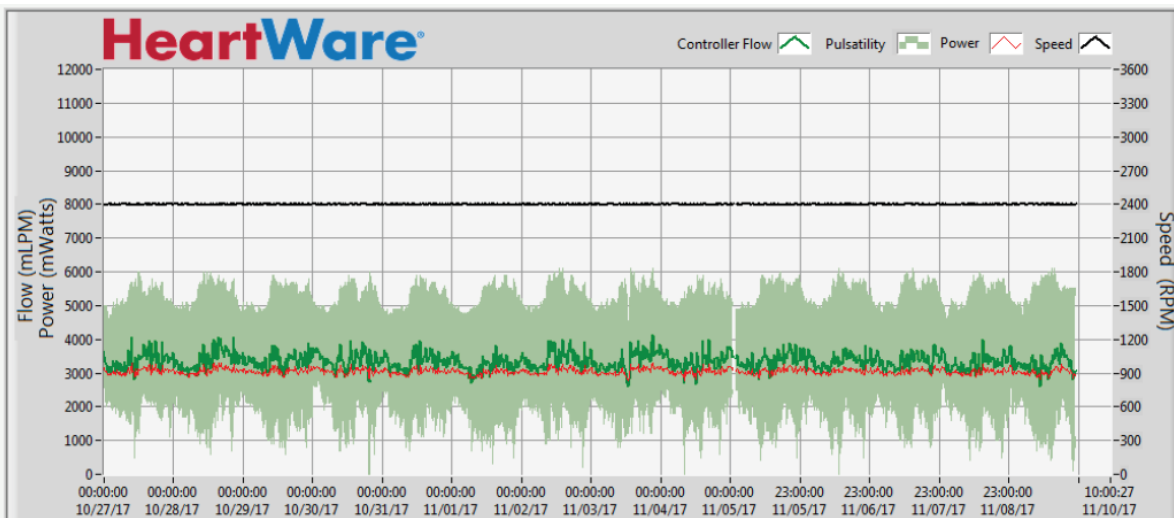


Figure 1: VAD parameters over the last 14 days

BATTERY SUMMARY

Battery ID	Cycle Count
203428	203
217903	84
219721	44
510871	12

CURRENT VAD PARAMETERS

SPEED (RPM): 2400

FLOW (LPM): 4.1

POWER (W): 3.0

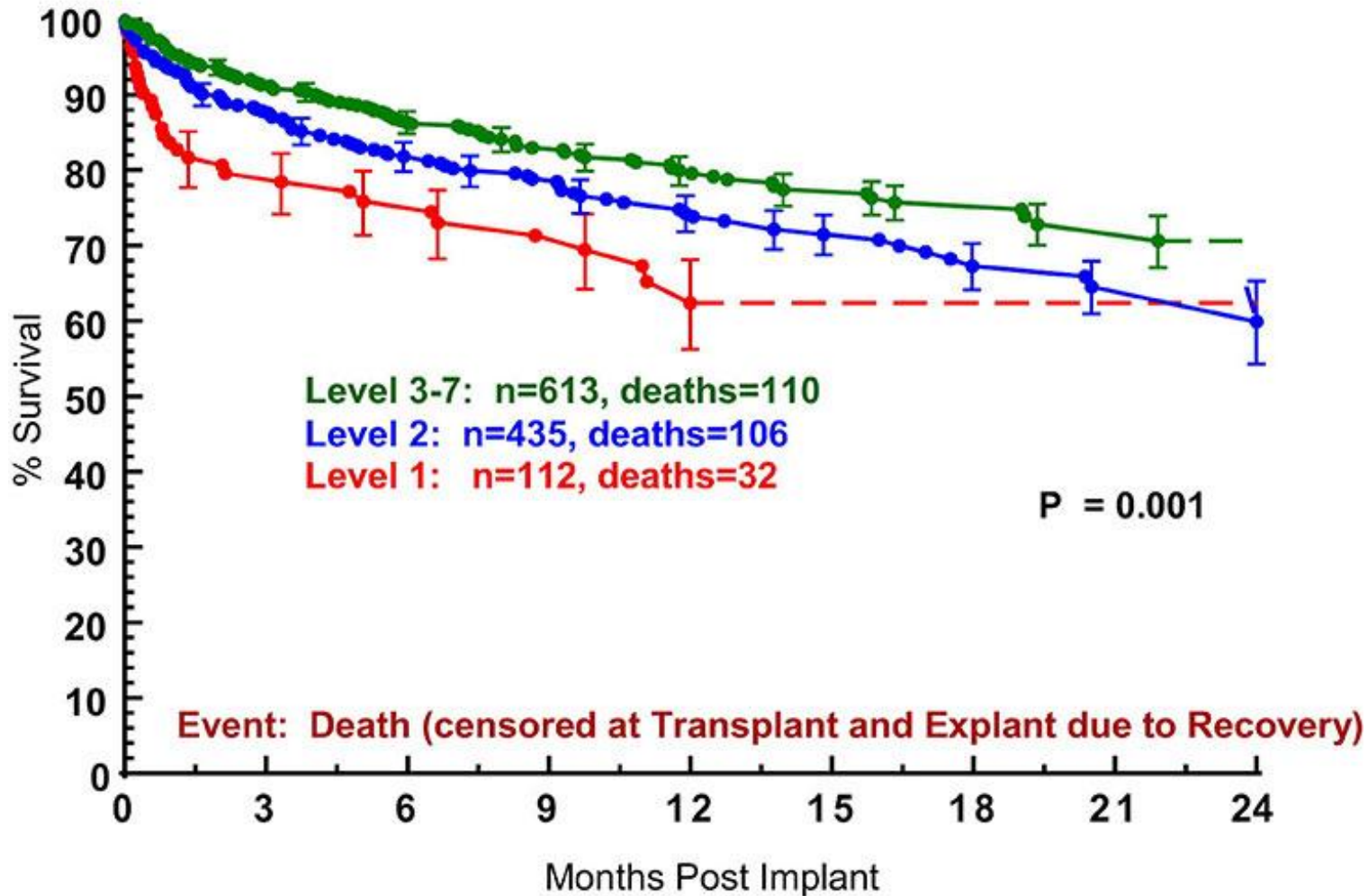
NORMAL POWER CONSUMPTION

(see additional notes)

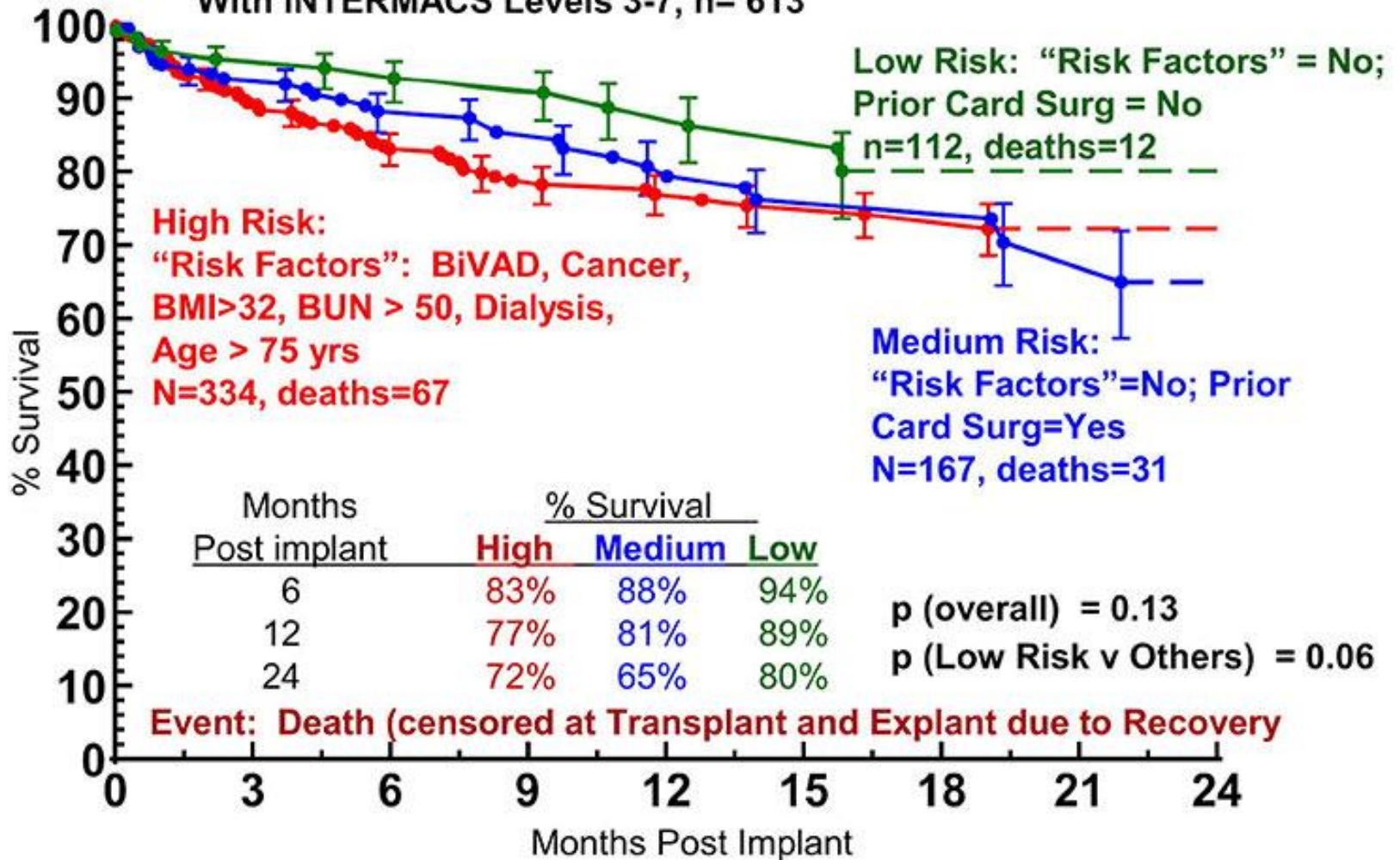


Survival and INTERMACS

Continuous Flow LVAD* Destination Therapy, n=1160



**Continuous Flow LVAD* Destination Therapy
With INTERMACS Levels 3-7, n= 613**



Frailty predicts long-term mortality in elderly subjects with chronic heart failure

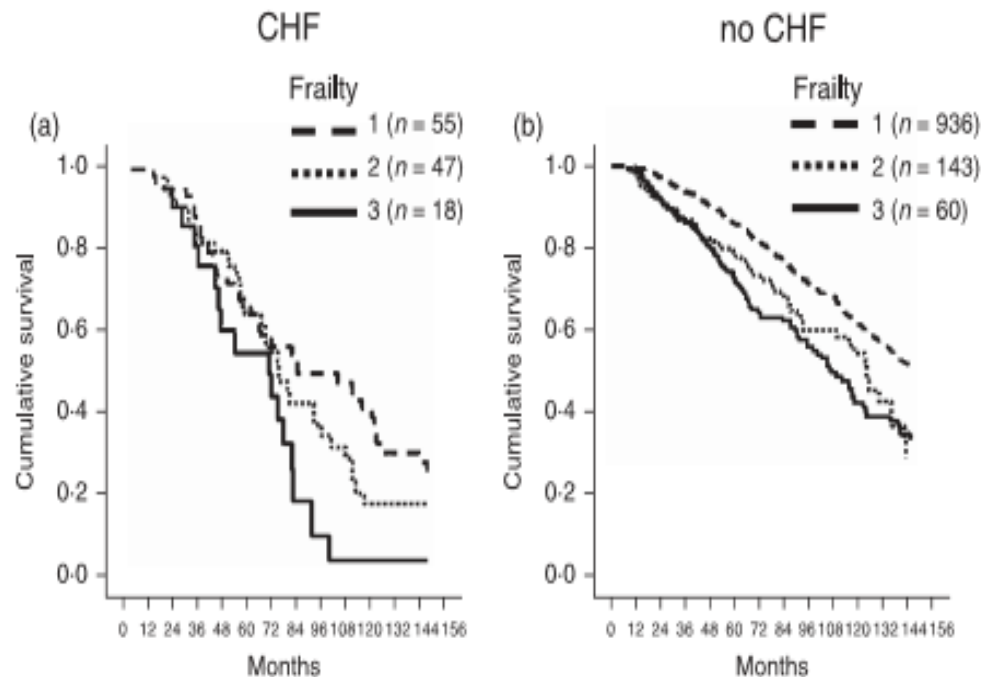
F. Cacciatore*, P. Abete†, F. Mazzella†, L. Viati*, D. Della Morte†, D. D'Ambrosio†, G. Gargiulo†, G. Testa†, D. De Santis†, G. Galizia†, N. Ferrara** and F. Rengo**†



Variable	CHF			No CHF		
	HR	95% CI	P	HR	95% CI	P
Frailty	1.48	1.04–2.11	0.032	1.36	1.17–1.57	0.000
Dummy variable	HR	95% CI	P	HR	95% CI	P
Frailty class						
1 vs. 2	1.44	0.82–2.53	0.200	1.74	1.37–2.21	0.000
2 vs. 3	1.49	1.00–2.22	0.047	1.06	0.73–1.52	0.758
3 vs. 1	1.62	1.08–2.45	0.020	1.24	1.04–1.47	0.014

*Adjusted for age, sex, NYHA class, comorbidity, systolic blood pressure, diastolic blood pressure, diuretics, ACE-inhibitors, nitrates and digoxin and ischaemic aetiology.

HR, hazard ratio; CI, confidence interval.



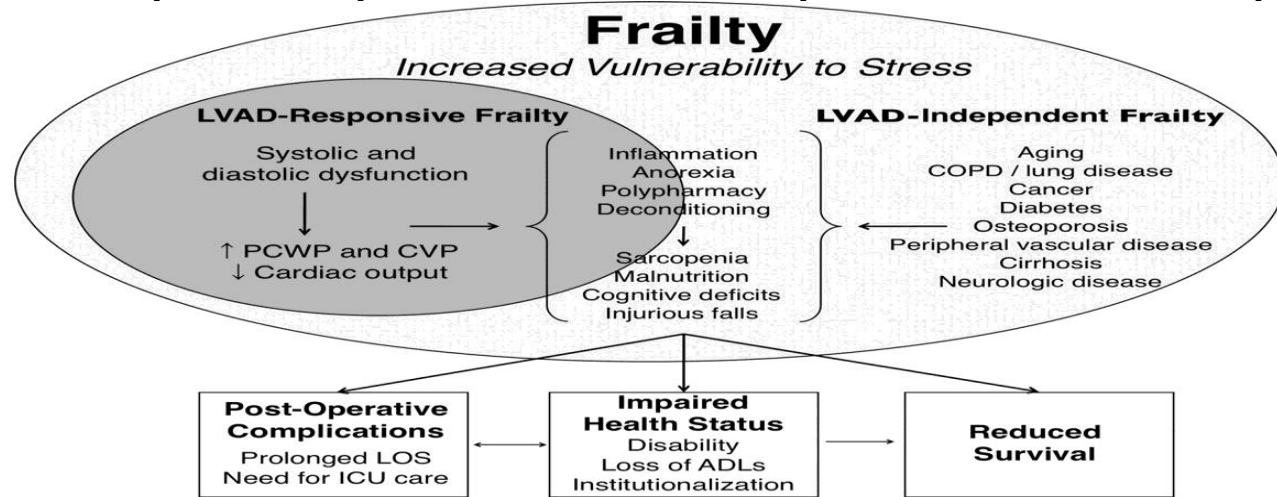
Frailty and the Selection of Patients for Destination Therapy Left Ventricular Assist Device

by Kelsey M. Flint, Daniel D. Matlock, JoAnn Lindenfeld, and Larry A. Allen

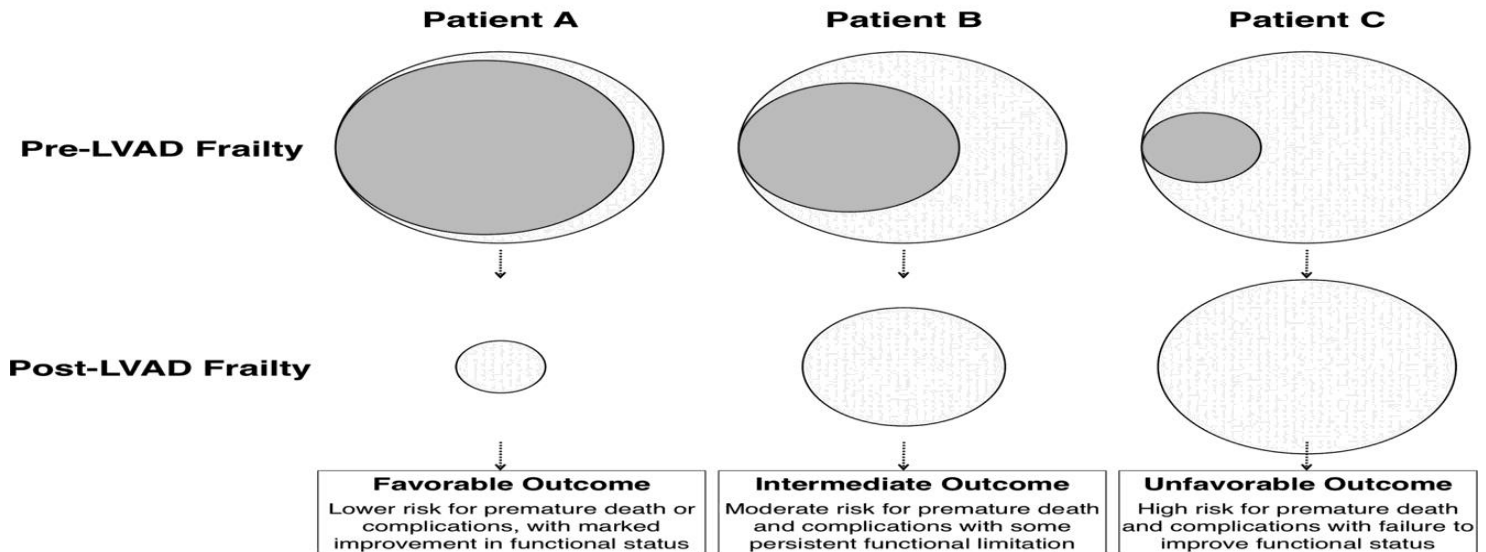
Circ Heart Fail
Volume 5(2):286-293
March 20, 2012

A, Breakdown of frailty into its underlying causes, manifestations, and clinical outcomes separated by LVAD-responsive and LVAD-independent causes of frailty.

A



B



Can a Left Ventricular Assist Device in Individuals with Advanced Systolic Heart Failure Improve or Reverse Frailty?

Frailty, defined as having 3 or more of the Fried frailty criteria, was assessed before LVAD implantation and 1, 3, and 6 months after implantation

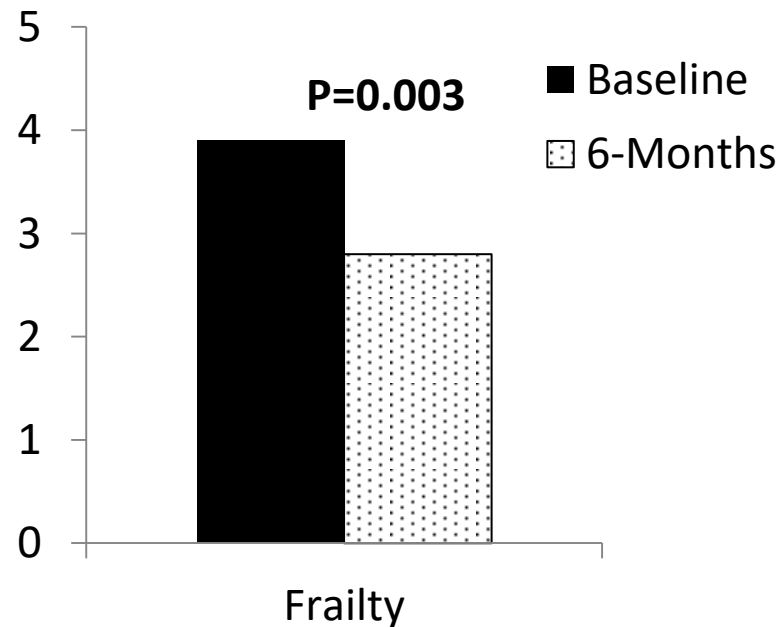
N = 29; mean age 70.6 ± 5.5 , 72.4% male

Improvements were observed after 3 to 6 months of LVAD support, although 10 (52.6%) participants still had 3 or more Fried criteria, and all subjects had at least one at 6 months.

Changes in frailty were associated with improvement in QOL but not with changes in mood or cognition.

Higher EGFR at baseline was independently associated with a decrease in frailty.

Mathew S. Maurer , nov 2017



Advanced Heart Failure



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Monitored
Cardiac Rehab



Lifestyle
Changes



Prescription
Medications



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Devices



Surgical
Procedures

Your action plan may include a combination of these steps.

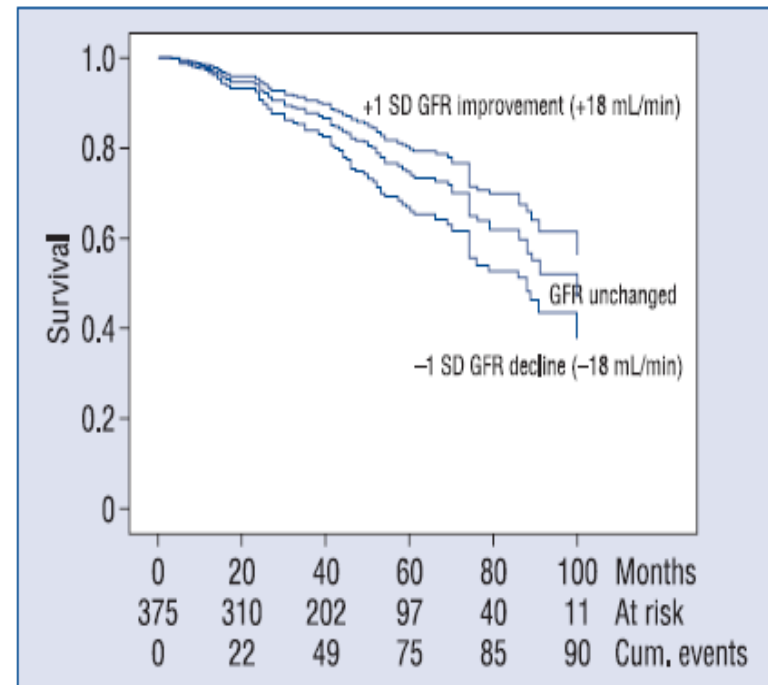
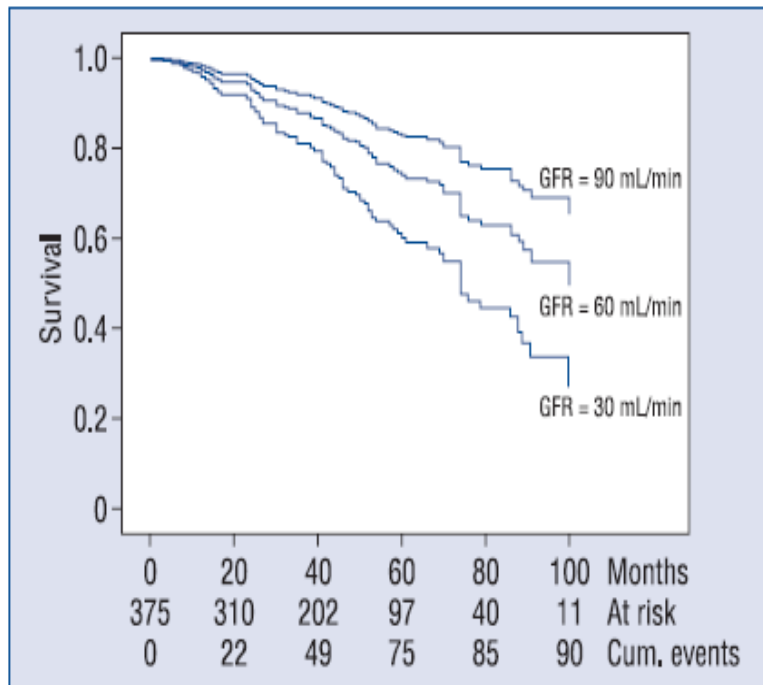
2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

Recommendations for cardiac resynchronization therapy implantation in patients with heart failure

Recommendations	Class ^a	Level ^b
CRT is recommended for symptomatic patients with HF in sinus rhythm with a QRS duration ≥ 150 msec and LBBB QRS morphology and with LVEF $\leq 35\%$ despite OMT in order to improve symptoms and reduce morbidity and mortality.	I	A
CRT should be considered for symptomatic patients with HF in sinus rhythm with a QRS duration ≥ 150 msec and non-LBBB QRS morphology and with LVEF $\leq 35\%$ despite OMT in order to improve symptoms and reduce morbidity and mortality.	IIa	B
CRT is recommended for symptomatic patients with HF in sinus rhythm with a QRS duration of 130–149 msec and LBBB QRS morphology and with LVEF $\leq 35\%$ despite OMT in order to improve symptoms and reduce morbidity and mortality.	I	B
CRT may be considered for symptomatic patients with HF in sinus rhythm with a QRS duration of 130–149 msec and non-LBBB QRS morphology and with LVEF $\leq 35\%$ despite OMT in order to improve symptoms and reduce morbidity and mortality.	IIb	B
CRT rather than RV pacing is recommended for patients with HFrEF regardless of NYHA class who have an indication for ventricular pacing and high degree AV block in order to reduce morbidity. This includes patients with AF (see Section 10.1).	I	A
CRT should be considered for patients with LVEF $\leq 35\%$ in NYHA Class III–IV ^d despite OMT in order to improve symptoms and reduce morbidity and mortality, if they are in AF and have a QRS duration ≥ 130 msec provided a strategy to ensure bi-ventricular capture is in place or the patient is expected to return to sinus rhythm.	IIa	B
Patients with HFrEF who have received a conventional pacemaker or an ICD and subsequently develop worsening HF despite OMT and who have a high proportion of RV pacing may be considered for upgrade to CRT. This does not apply to patients with stable HF.	IIb	B
CRT is contra-indicated in patients with a QRS duration < 130 msec.	III	A

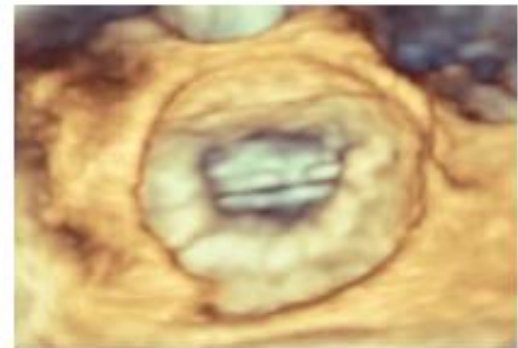
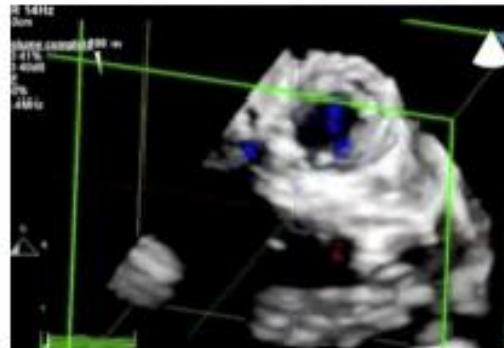
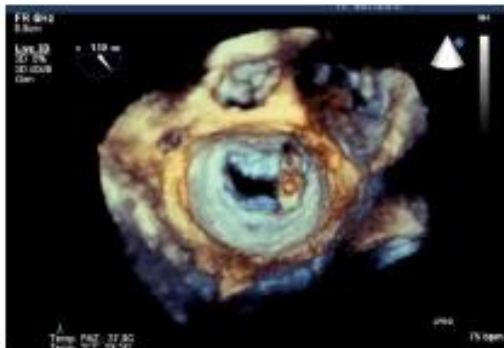
Renal function impairment predicts mortality in patients with chronic heart failure treated with resynchronization therapy

Edoardo Gronda¹, Stefano Genovese¹, Luigi Padeletti^{2,3}, Francesco Cacciatore⁴,
Dino Franco Vitale⁴, Renato Bragato⁵, Lisa Innocenti², Concetta Schiano⁶,
Linda Sommese⁷, Maria Rosaria De Pascale⁷, Luca Genovese¹,
Pasquale Abete⁸, Francesco Donatelli^{1,9}, Claudio Napoli^{6,7}

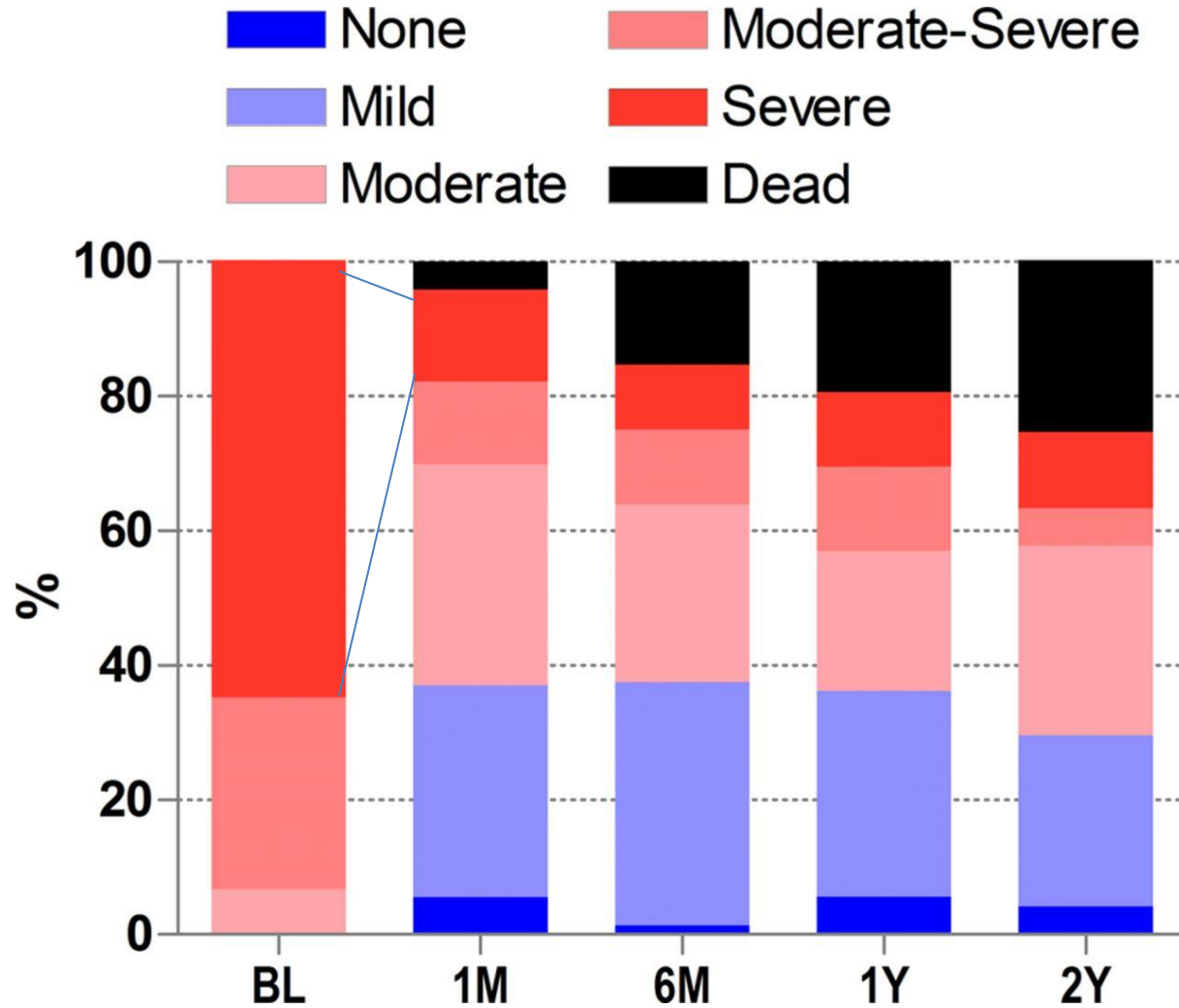


Percutaneous MR devices

- Presence of MR is one of the most powerful prognostic factors increasing mortality and health care expenses in Heart Failure patients
- Non-surgical treatments of MR are emerging as a viable and effective method to improve survival and contain costs
- MitraClip is the most common therapy today, but more options will become available in the next future including “surgical like” percutaneous annuloplasty and replacement



Severity of MR at BL, and at 1 month, 6 months, 1 year and 2 years post MitraClip.



Stefan Toggweiler et al. Open Heart 2014;1:e000056

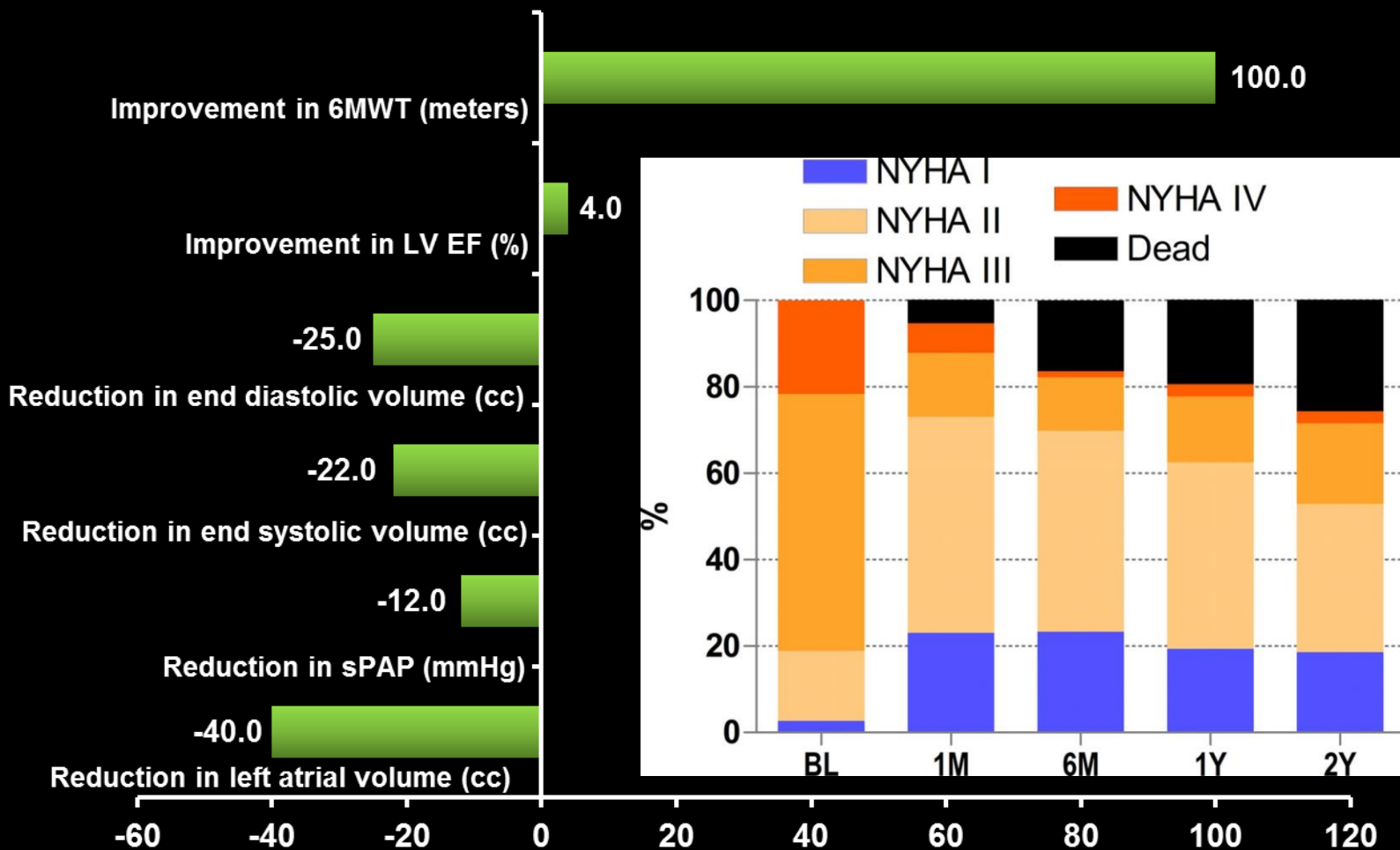
Meta-Analysis of the Usefulness of Mitraclip in Patients With Functional Mitral Regurgitation



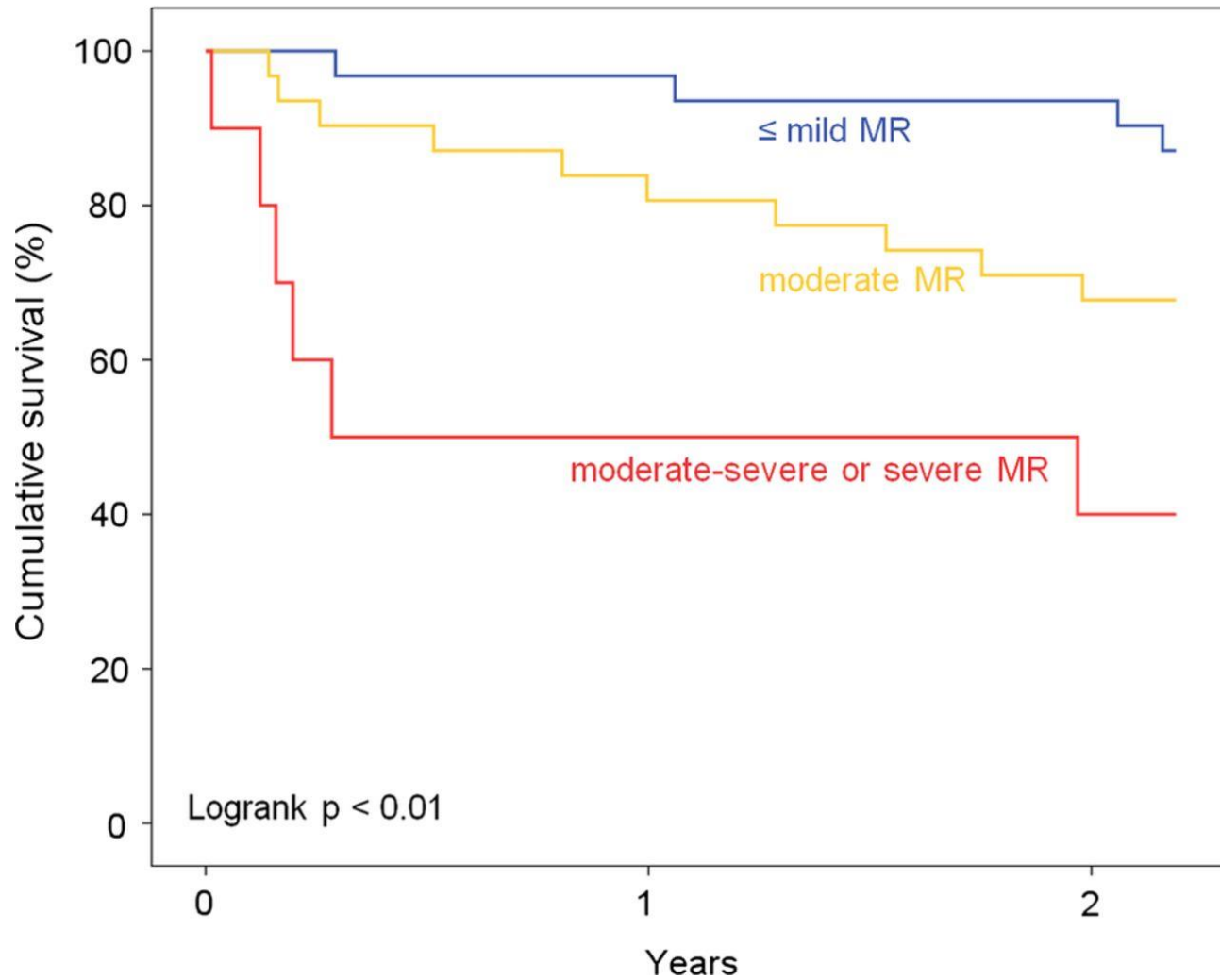
Fabrizio D'ascenzo, MD^a, Claudio Moretti, MD^a, Walter Grosso Marra, MD^a, Antonio Montefusco, MD^a, Pierluigi Omede, MD^a, Salma Taha, MD^{a,b,*}, Davide Castagno, MD^a, Oliver Gaemperli, MD^c, Maurizio Taramasso, MD^d, Simone Frea, MD^a, Stefano Pidello, MD^e, Volker Rudolph, MD^f, Olaf Franzen, MD^g, Daniel Braun, MD^h, Cristina Giannini, MDⁱ, Huseyin Ince, MD^j, Leor Perl, MD^k, Giuseppe Zoccai, MD^l, Sebastiano Marra, MD^a, Maurizio D'Amico, MD^a, Francesco Maisano, MD^m, Mauro Rinaldi, MD^a, and Fiorenzo Gaita, MD^a

(Am J Cardiol 2015;116:325–331)

Change of Functional and Echocardiographic Data at Follow-Up



Survival according to residual MR post MitraClip.



Stefan Toggweiler et al. Open Heart 2014;1:e000056

Advanced Heart Failure



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Monitored
Cardiac Rehab



Lifestyle
Changes



Prescription
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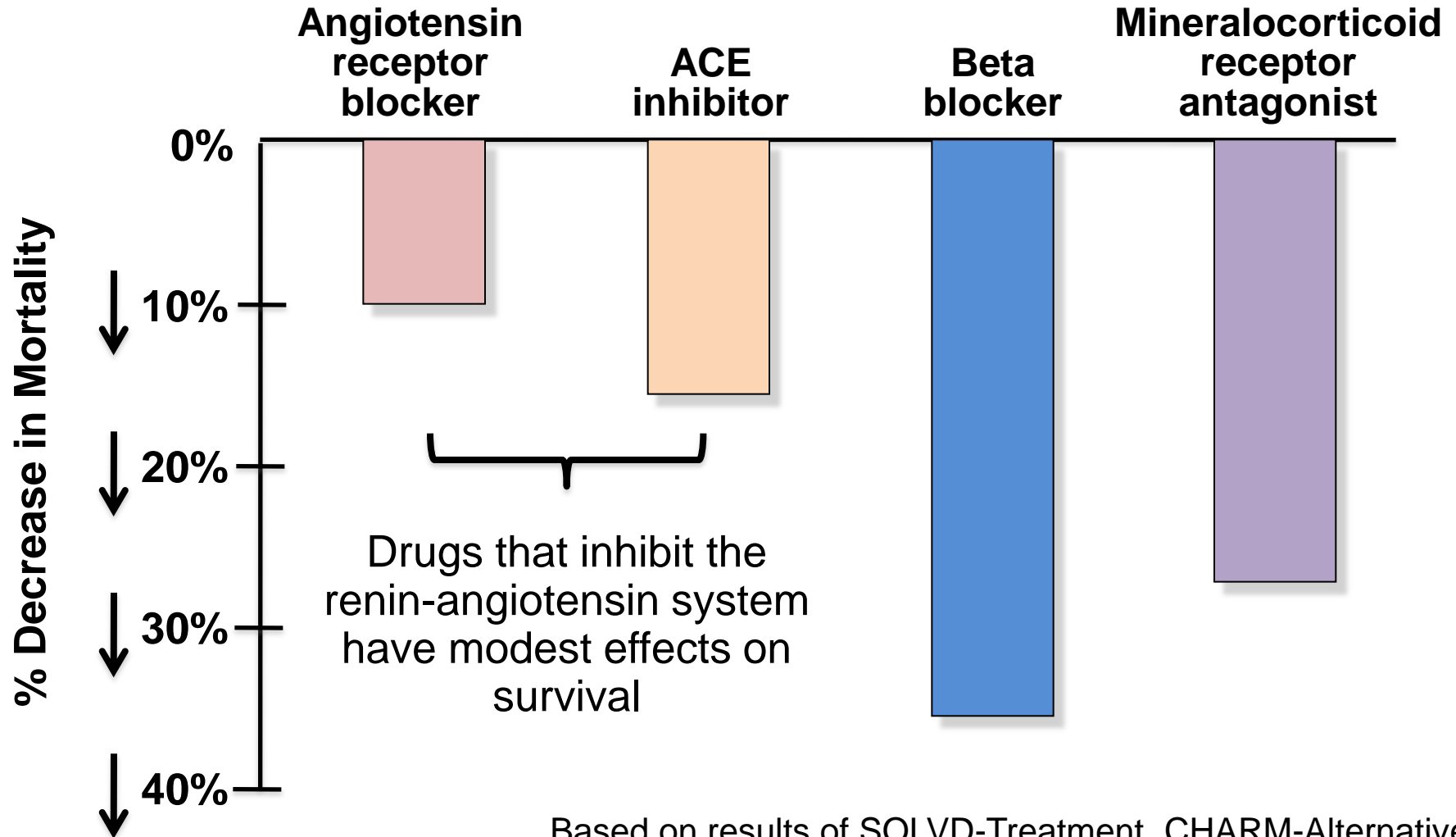
Implanted
Devices



Surgical
Procedures

Your action plan may include a combination of these steps.

Drugs That Reduce Mortality in Heart Failure With Reduced Ejection Fraction



Based on results of SOLVD-Treatment, CHARM-Alternative, COPERNICUS, MERIT-HF, CIBIS II, RALES and EMPHASIS-HF

The NEW ENGLAND
JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

SEPTEMBER 11, 2014

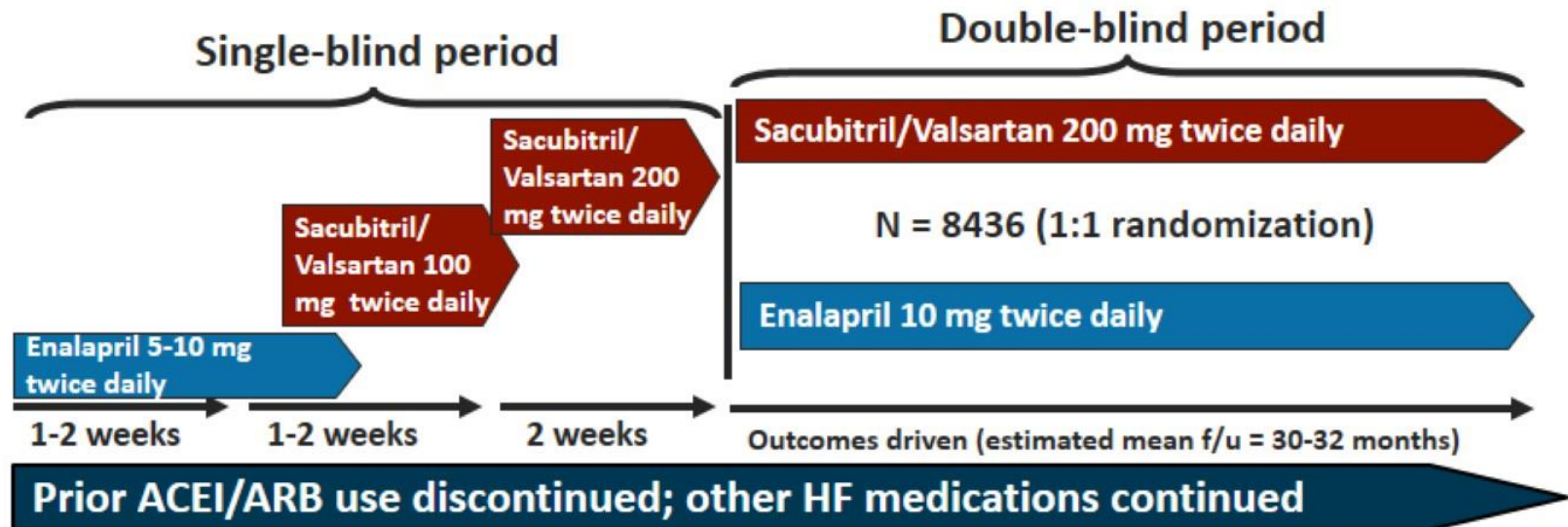
VOL. 371 NO. 11

Angiotensin–Neprilysin Inhibition versus Enalapril
in Heart Failure

John J.V. McMurray, M.D., Milton Packer, M.D., Akshay S. Desai, M.D., M.P.H., Jianjian Gong, Ph.D.,
Martin P. Lefkowitz, M.D., Adel R. Rizkala, Pharm.D., Jean L. Rouleau, M.D., Victor C. Shi, M.D.,
Scott D. Solomon, M.D., Karl Swedberg, M.D., Ph.D., and Michael R. Zile, M.D.,
for the PARADIGM-HF Investigators and Committees*

PARADIGM-HF

A multicenter, randomized, double-blind, parallel group, active-controlled study to evaluate the efficacy and safety of sacubitril/valsartan compared with enalapril on morbidity and mortality in patients with chronic HF and reduced EF



Primary objectives Evaluate if sacubitril/valsartan is superior in delaying time to first occurrence of either **CV mortality or HF hospitalization** in CHF pts (NYHA Class II – IV) with reduced EF

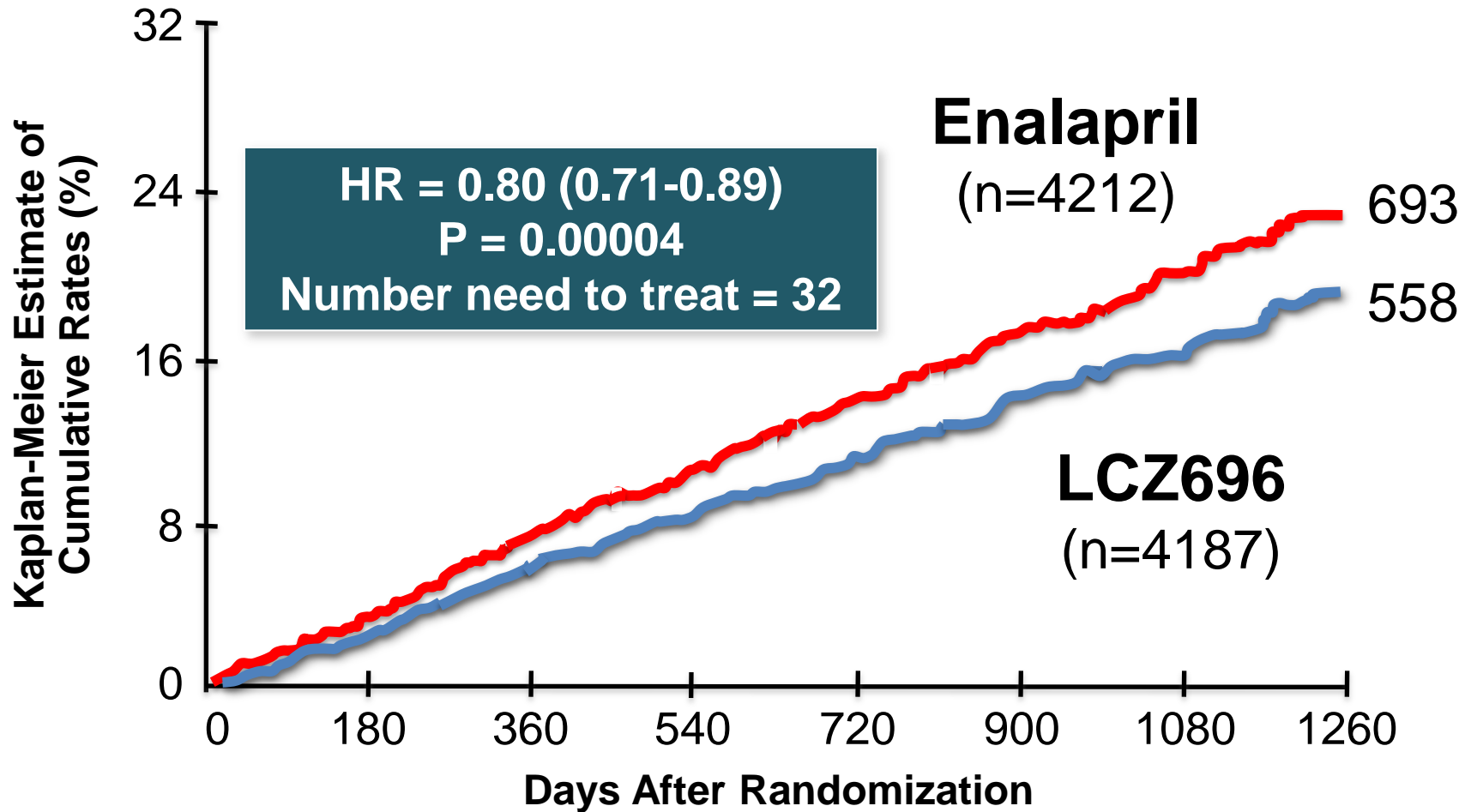
Secondary objectives

- All-cause mortality
- Renal progression (eGFR change)
- Clinical summary score (assessed by KCCQ)

Patient population

- 8436 patients with CHF NYHA class II-IV and reduced EF (LVEF < 40%)
- BNP \geq 150 pg/mL (NT-proBNP \geq 600 pg/mL) at screening or BNP \geq 100 pg/mL (NT-proBNP \geq 400 pg/mL) and hospitalization within the last 12 months

PARADIGM-HF: Cardiovascular Death



Patients at Risk

LCZ696	4187	4056	3891	3282	2478	1716	1005	280
Enalapril	4212	4051	3860	3231	2410	1726	994	279

PARADIGM-HF: Summary of Findings

In heart failure with reduced ejection fraction, when compared with recommended doses of enalapril:

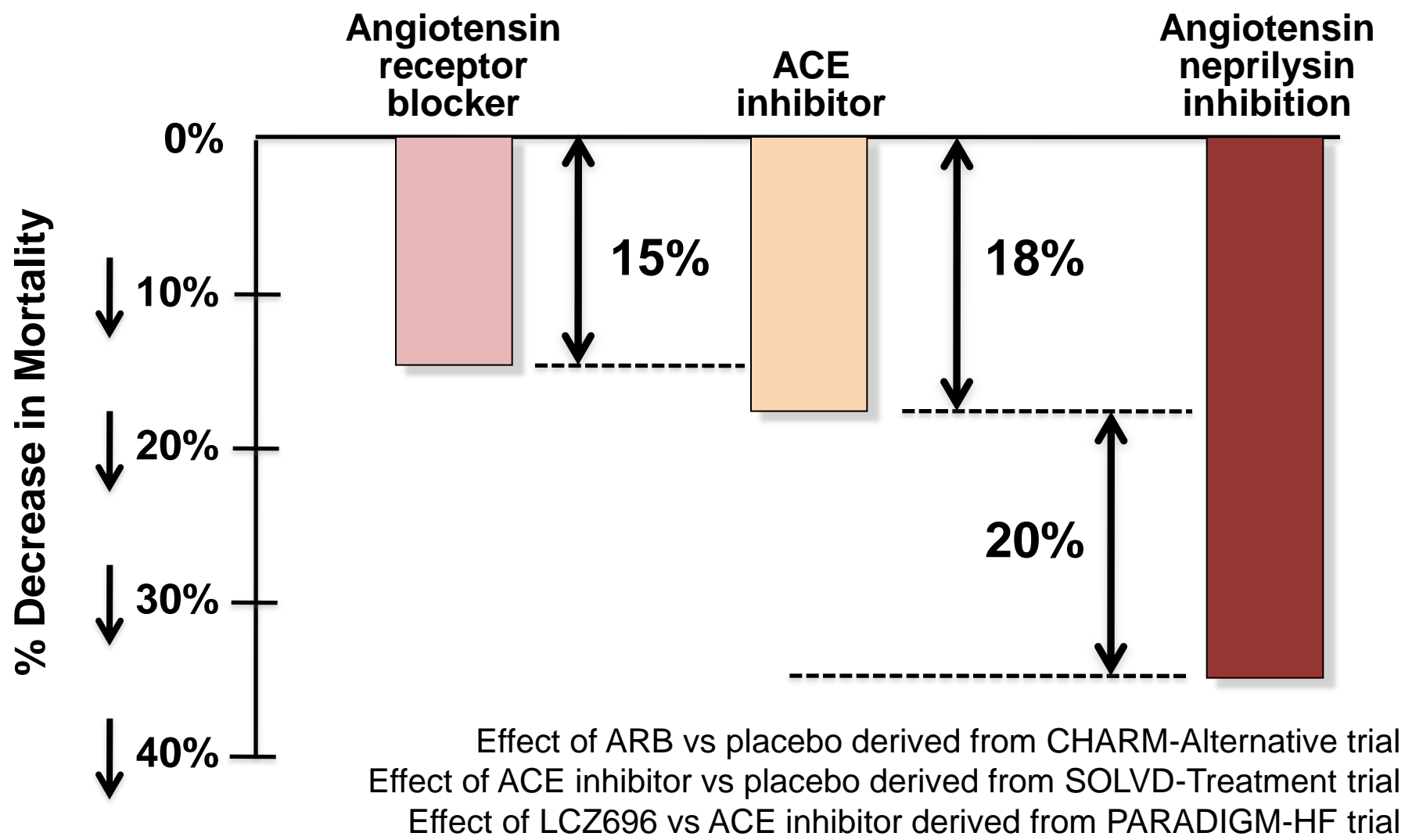
LCZ696 was *more effective* than enalapril in . . .

- Reducing the risk of CV death and HF hospitalization
- Reducing the risk of CV death by *incremental* 20%
- Reducing the risk of HF hospitalization by *incremental* 21%
- Reducing all-cause mortality by *incremental* 16%
- *Incrementally* improving symptoms and physical limitations

LCZ696 was *better tolerated* than enalapril . . .

- Less likely to cause cough, hyperkalemia or renal impairment
- Less likely to be discontinued due to an adverse event
- More hypotension, but no increase in discontinuations
- Not more likely to cause serious angioedema

Angiotensin Neprilysin Inhibition With LCZ696 Doubles Effect on Cardiovascular Death of Current Inhibitors of the Renin-Angiotensin System



Efficacy and safety of LCZ696 (sacubitril-valsartan) according to age: insights from PARADIGM-HF

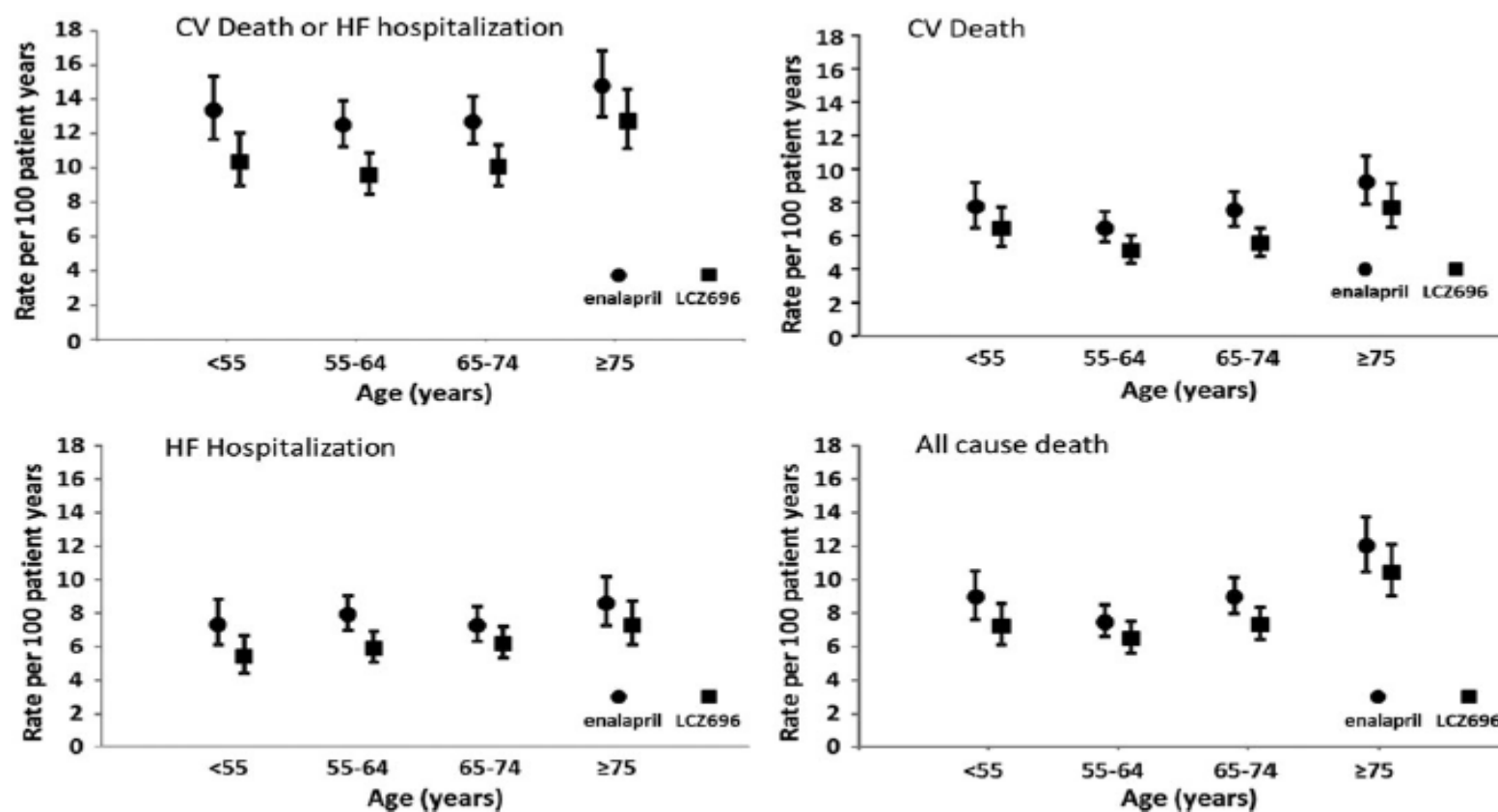


Figure 1 Clinical outcomes of cardiovascular death or heart failure hospitalization, cardiovascular death, heart failure hospitalization, and all-cause mortality by age category and treatment group. Rates are expressed as a rate per 100 patient-years of treatment (error bars are 95% confidence intervals).

Efficacy and safety of LCZ696 (sacubitril-valsartan) according to age: insights from PARADIGM-HF

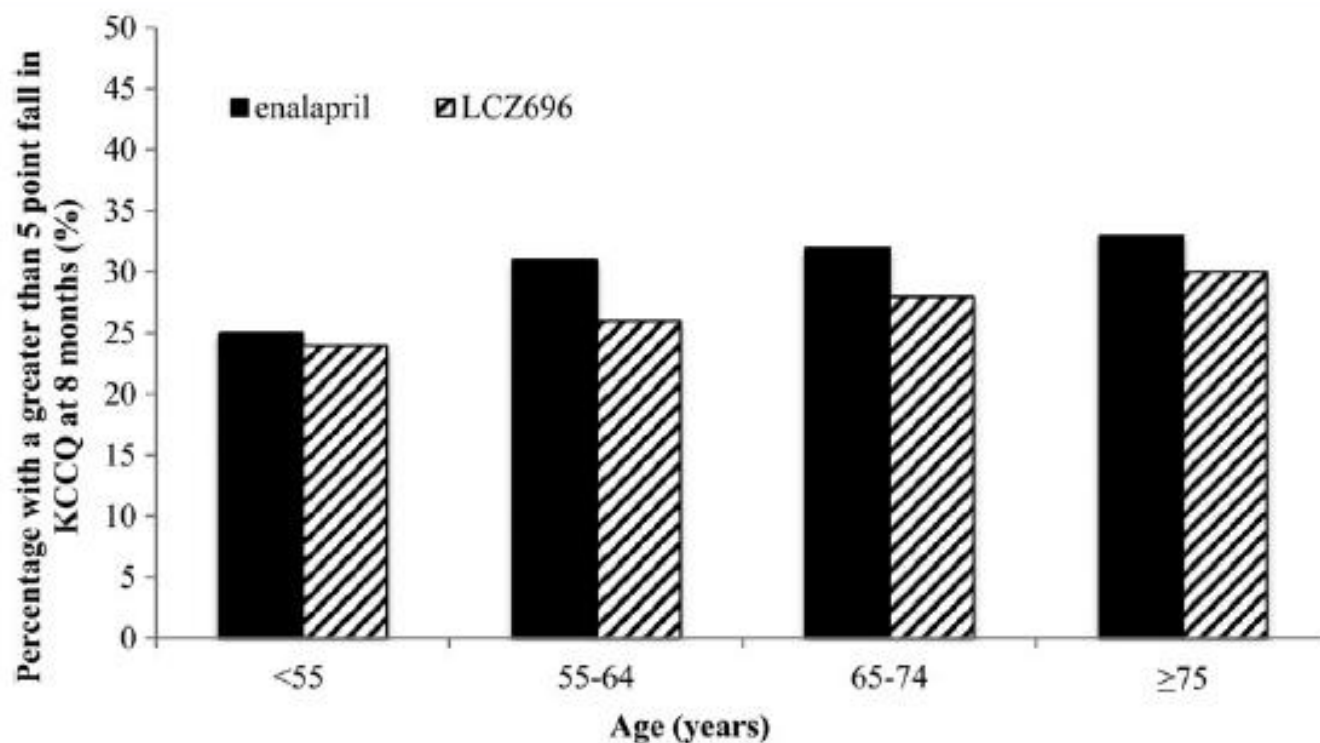
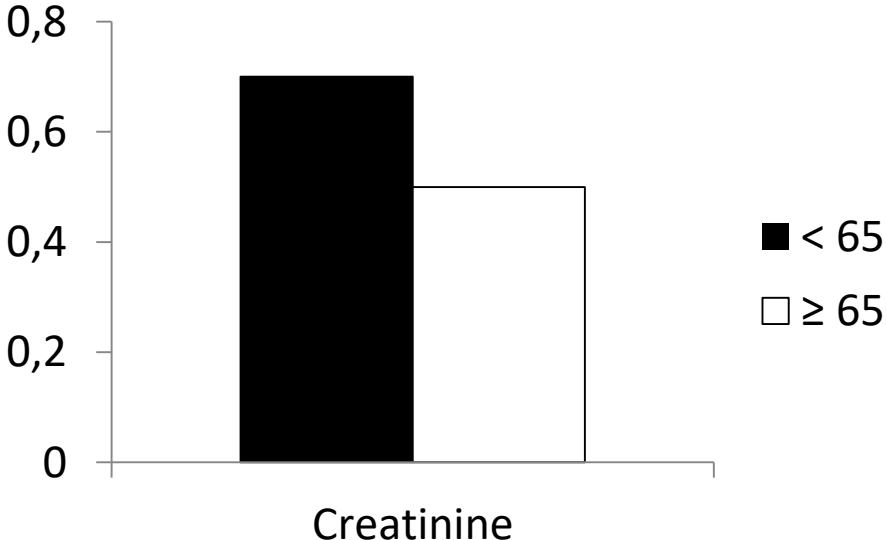
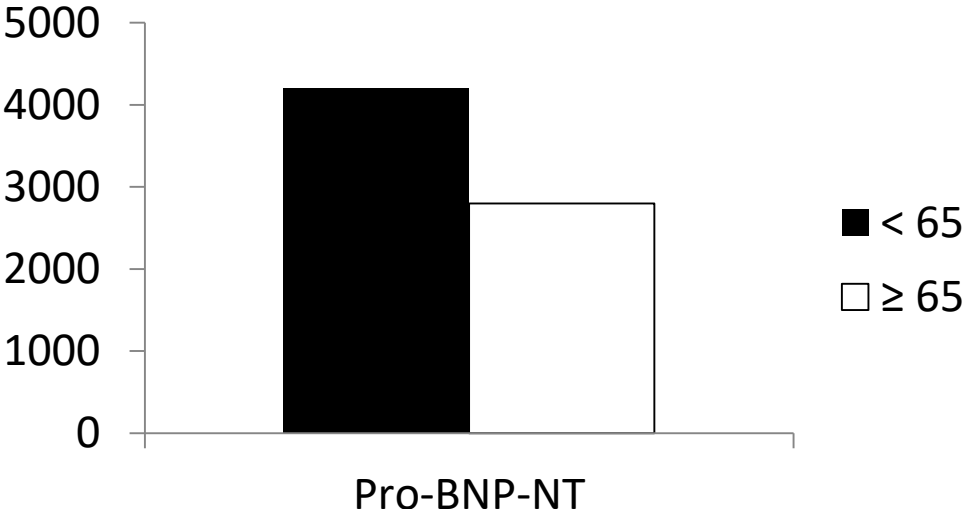
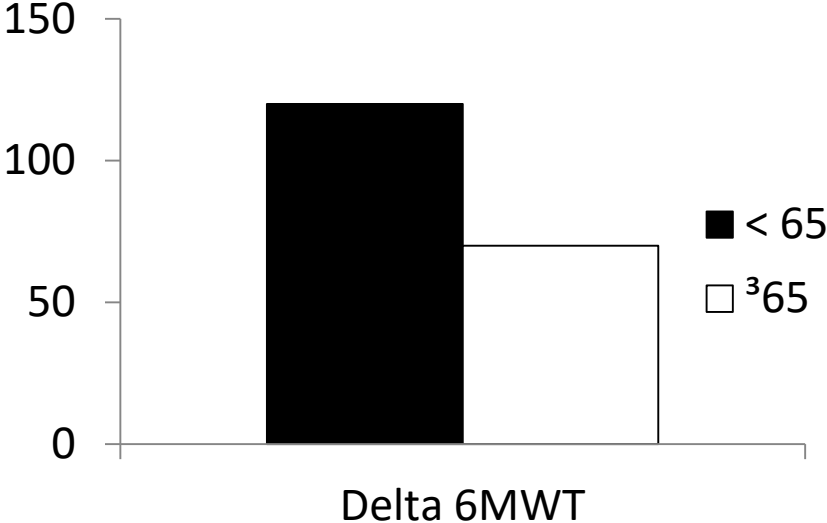


Figure 3 Proportion of patients with a five-point or greater fall (deterioration) in Kansas City Cardiomyopathy Questionnaire at 8 months by age category and treatment.

	<55 years (n = 1624)		55–64 years (n = 2655)		65–74 years (n = 2557)		≥75 years (n = 1563)		P-value [†]
	Enalapril	LCZ696	Enalapril	LCZ696	Enalapril	LCZ696	Enalapril	LCZ696	
Hypotension									
Symptomatic hypotension	60 (7.6)	96 (11.5)	111 (8.0)	158 (12.4)	124 (9.8)	195 (15.1)	93 (11.9)	139 (17.7)	0.95
Symptomatic hypotension with SBP <90 mmHg	12 (1.5)	24 (2.9)	12 (0.9)	33 (2.6)	21 (1.7)	32 (2.5)	14 (1.8)	23 (2.9)	0.77
Leading to discontinuation	3 (0.4)	5 (0.6)	7 (0.5)	5 (0.4)	9 (0.7)	12 (0.9)	10 (1.3)	14 (1.8)	0.94
Renal impairment, N (%)									
Serum creatinine ≥ 2.5 mg/dL	20 (2.6)	10 (1.2)	48 (3.5)	34 (2.7)	74 (5.9)	62 (4.8)	46 (5.9)	33 (4.2)	0.49
Serum creatinine ≥ 3.0 mg/dL	12 (1.5)	5 (0.6)	27 (2.0)	18 (1.4)	28 (2.2)	26 (2.0)	16 (2.1)	14 (1.8)	0.28
Leading to discontinuation	9 (1.1)	9 (1.1)	14 (1.0)	4 (0.3)	20 (1.6)	11 (0.9)	16 (2.1)	5 (0.6)	0.10
Hyperkalaemia, N (%)									
Serum potassium > 5.5 mmol/L	89 (11.4)	97 (11.7)	254 (18.5)	220 (17.4)	232 (18.4)	218 (16.9)	152 (19.5)	139 (17.7)	0.70
Serum potassium > 6.0 mmol/L	23 (2.9)	28 (3.4)	82 (6.0)	57 (4.5)	75 (6.0)	58 (4.5)	56 (7.2)	38 (4.8)	0.17
Leading to discontinuation	0 (0)	3 (0.4)	3 (0.2)	1 (0.1)	8 (0.6)	3 (0.2)	4 (0.4)	4 (0.5)	0.97
Cough, N (%)									
Any cough	137 (17.4)	106 (12.6)	198 (14.3)	130 (10.2)	167 (13.2)	161 (12.5)	99 (12.7)	77 (9.8)	0.58
Leading to discontinuation	4 (0.5)	0 (0)	14 (1.0)	4 (0.3)	7 (0.6)	3 (0.2)	5 (0.6)	1 (0.1)	0.73
Angioedema (adjudicated)									
No treatment/antihistamines only	2 (0.3%)	1 (0.1%)	1 (0.1%)	3 (0.2%)	1 (0.1%)	5 (0.4%)	1 (0.1%)	1 (0.1%)	0.20
Catecholamines/corticosteroids without hospitalization	1 (0.1%)	2 (0.2%)	2 (0.1%)	3 (0.2%)	0 (0.0%)	1 (0.1%)	1 (0.1%)	0 (0.0%)	0.58
Hospitalized/no airway compromise	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (0.2%)	1 (0.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0.52
Airway compromise	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	–
Any adverse event leading to study-drug discontinuation, N (%)	16 (2.0%)	14 (1.7%)	35 (2.5%)	14 (1.1%)	43 (3.4%)	29 (2.2%)	35 (4.5%)	22 (2.8%)	0.85

Outcome at 6 months of ARNI treatment in Young (#62) and Elderly (#12) patients with advanced heart failure



Advanced Heart Failure



Take steps to manage HF.



Monitored
Cardiac Rehab



Lifestyle
Changes



Prescription
Medications



Implanted
Devices

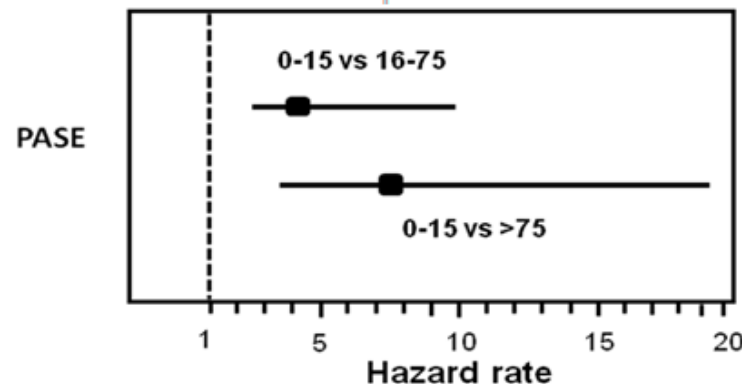
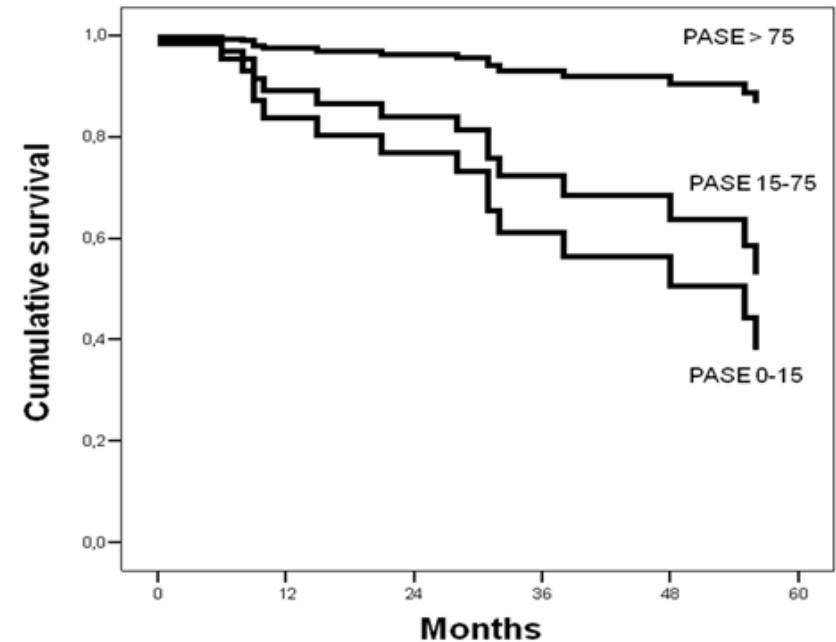
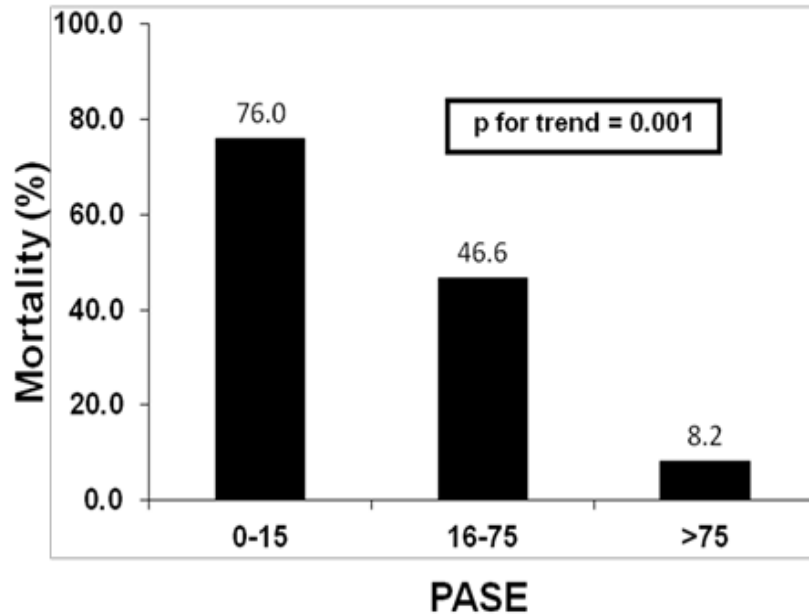


Surgical
Procedures

Your action plan may include a combination of these steps.

- Quitting smoking
- Losing or maintaining your weight
- Tracking your daily fluid intake
- Avoiding alcohol
- Eating a heart-healthy diet
- Being physically active
- Managing stress
- Keeping track
- Monitoring your blood pressure
- Getting adequate rest
- Developing support
- Avoiding flu and pneumonia with vaccinations

Physical activity is inversely related to mortality in elderly patients with decompensation of advanced (III B) heart failure



Advanced Heart Failure



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Your action plan may include a combination of these steps.

ExTraMATCH: Mortality

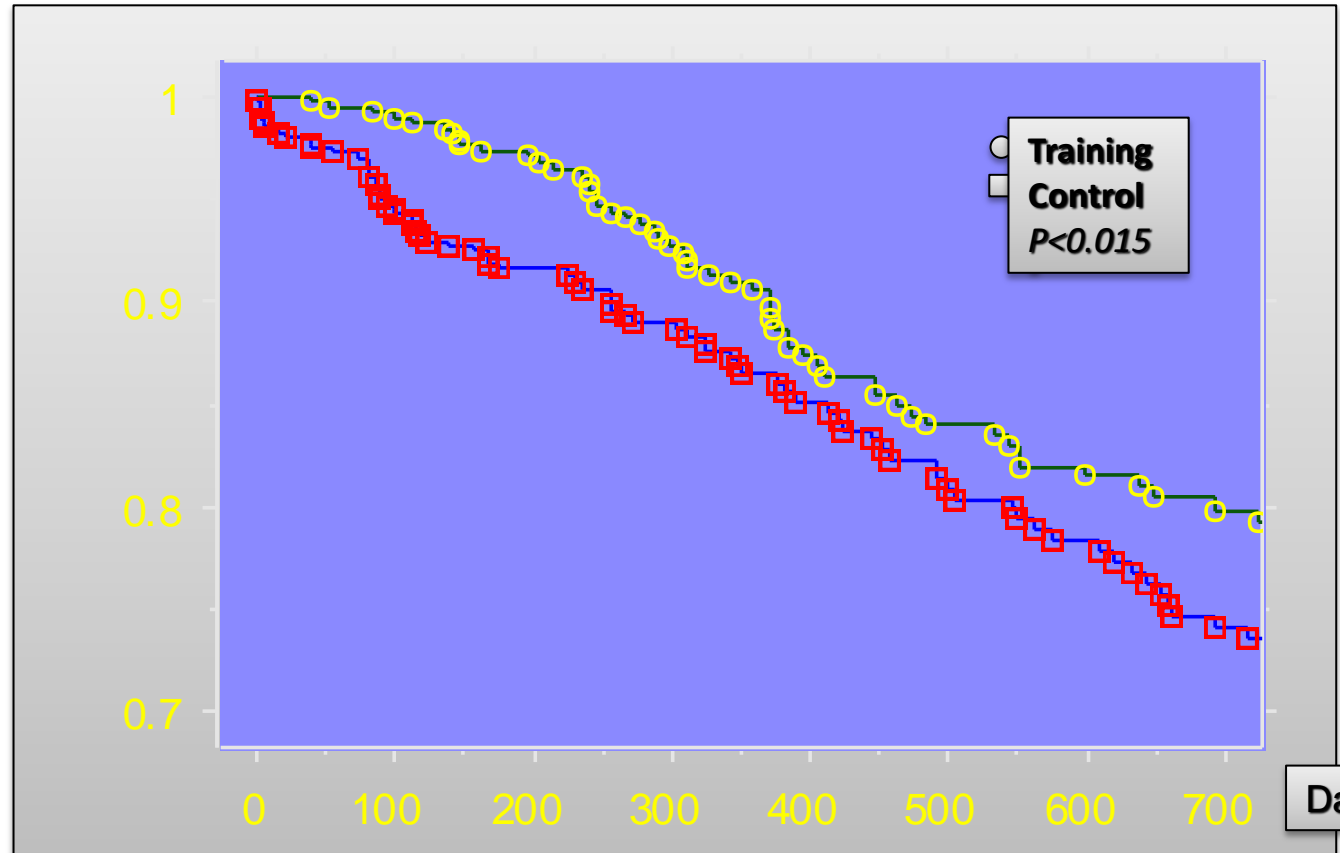
BMJ

24 January 2011



Exercise training in heart failure
Reduces mortality and improves symptoms

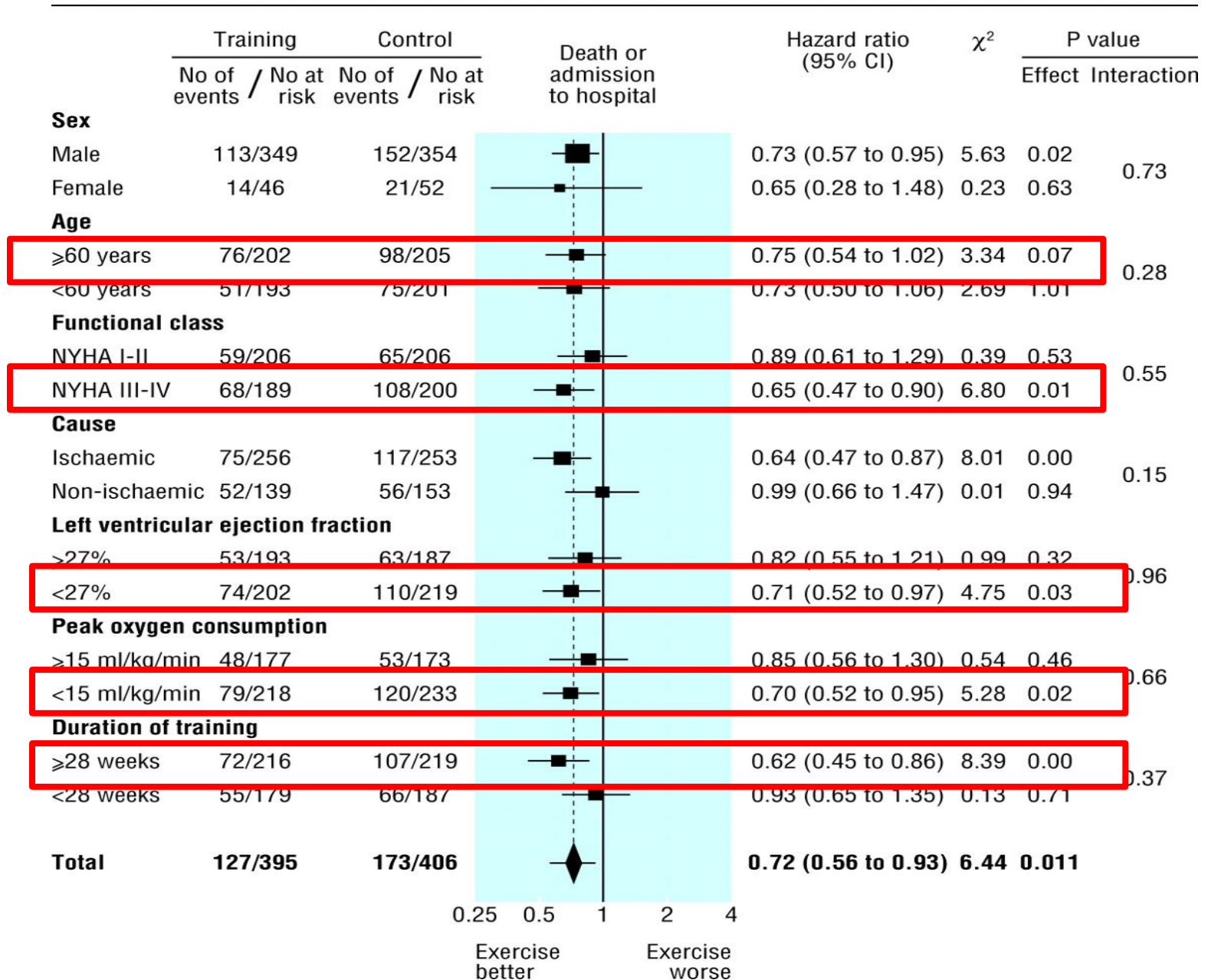
- At two years, Kaplan-Meier mortality was
 - 20.7% (95% CI 15.4%-25.8%) in the exercise
 - 26.5% (95% CI 20.7%-31.8%) in the control
- Exercise significantly reduced mortality
 - HR 0.65 CI 0.46-0.92, log-rank $\chi^2=5.9$ $p=0.015$.



Piepoli M, BMJ, 2004

Days

Effect of exercise training on death or admission to hospital.



**E per il nostro paziente fragile –
complesso – ospedalizzato ed
instabile ?**





Cardiac Rehabilitation in the Elderly Patients

Francesco Cacciatore^{1,2}, Nicola Ferrara¹, Alessandro Mezzani³, Ciro Maiello², Cristiano Amarelli², Francesco Curcio¹, Ilaria Liguori¹ and Pasquale Abete¹*

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³Department of Cardiac Rehabilitation, Istituto Scientifico Di Veruno, Italy

Table 1: Individualized protocols of training based on disability status

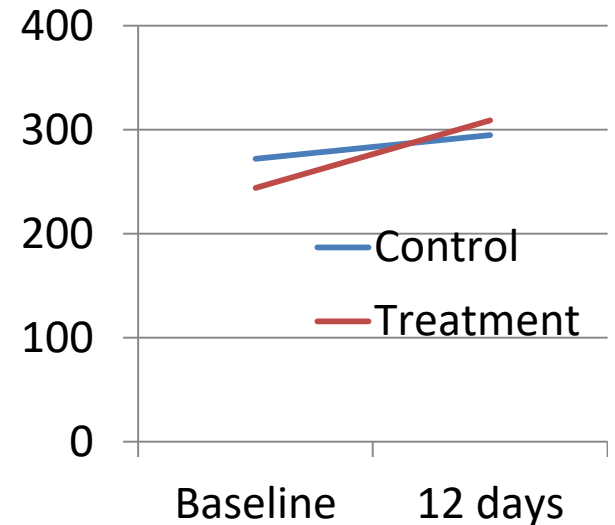
Severe chronic Disability	Temporary severe Disability	Mild / moderate Disability	Without disability
Mobilization sessions active / passive	Mobilization sessions active / passive	Training sessions of variable load exercise with Assistive Movement Training Apparatus	Sessions of variable load exercise bike and treadmill as effective workout stimulus increasing intensity and sessions
Diaphragmatic respiratory gymnastics	Diaphragmatic respiratory gymnastics	Diaphragmatic respiratory gymnastics	Diaphragmatic respiratory gymnastics
Posture changes	Posture changes	Sessions of breathing exercises and calisthenics at a reduced energy expenditure, low, medium or high	Sessions of breathing exercises and calisthenics at a reduced energy expenditure, low, medium or high
Re-education sessions in motor impairment	Re-education sessions in motor impairment	Sessions of strengthening of individual muscle groups	Sessions of strengthening of individual muscle groups
Sessions of bronchial unblocking	Sessions of bronchial unblocking		
Sessions of calisthenics exercises	Sessions of calisthenics exercises		
Sessions with a muscle stimulation	Sessions with a muscle stimulation		
Muscular strengthening sessions	Muscular strengthening sessions		
	Training sessions gait and walk.		

EaRly-start ExerciSe training aTer acute hemodynAmic decompensation in patients with chRonic hearT failure (RE-START). A multicenter, randomized, controlled trial on short-term feasibility and impact on functional capacity, symptoms and neurohumoral activation .

Mezzani A, Cacciatore F, Catanzaro R, Gualco A, Guzzetti D, Leosco D, Monelli M, Tarro Genta F, Totaro P, Traversi E, Zanelli E, Giannuzzi P.



6 - MWT



<i>giorni</i>	<i>attività</i>	<i>Durata sessioni</i>
1-2	mobilizzazione attiva assistita in posizione distesa/seduta	2 da 30'
3-4	mobilizzazione attiva assistita in posizione distesa/seduta cicloergometro da camera senza carico	1 da 30' 3 da 5'-10'
5-6	cicloergometro da camera a 10 W	3 da 15'-20'
7-12	cicloergometro da camera a 20-30 W	3 da 15'-20'

Comorbidity Assessment as Bridge to Decision in Advanced Heart Failure

- Life-style modification – Fluid/salt management
- Pharmacological treatment
- Device
- Surgery
- Rehabilitation
- Palliative care

When to Refer HF Patients for Palliative Care?

- Symptoms
 - NYHA class III/IV symptoms
 - Frequent HF readmissions
 - Recurrent ICD shocks
 - Refractory angina
 - Anxiety or depression adversely affecting QOL or ability to perform self-care
- Milestones
 - Ventricular assist device
 - Transplant
 - Trans aortic valve replacement (TAVR)
 - Home inotropic therapy
- Caregiver distress
 - Caregiver support needed for a longer period of time due to early loss of functional status

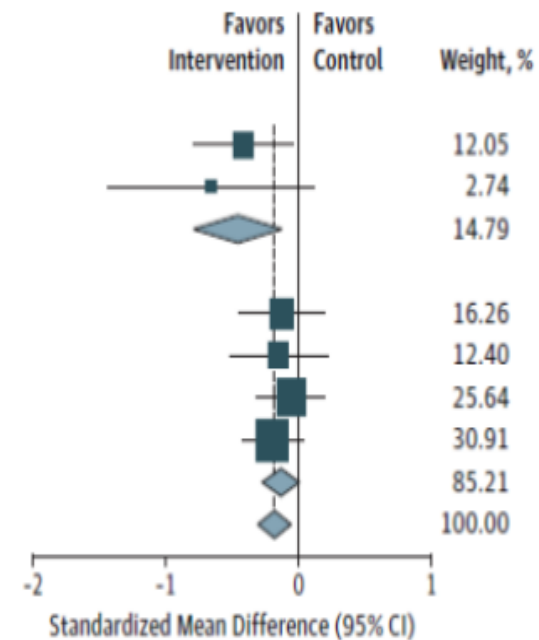


Association Between Palliative Care and Patient and Caregiver Outcomes

A Systematic Review and Meta-analysis

Palliative care associated with statistically and clinically significant improvements in

- Patient QOL at 1- to 3-month follow-up (standardized mean difference, 0.46)
- Symptom burden at 1- to 3-month (standardized mean difference, -0.66) and 4-6 month follow-up (Figure)
- [Note associations less convincing when *sensitivity analyses* were restricted to trials at low risk of bias]
- Improved advance care planning, greater patient and caregiver satisfaction with care, and lower health care utilization
- [Note mixed evidence on site of death; patient mood; health care expenditures; and caregiver QOL, mood, or burden]



Association between Palliative Care and Symptom Burden at 4-6 months Follow-Up (NS at 1-3 months)

(Kavalieratos et al, 2016)

Conclusion

Advanced Heart Failure is a critical moment of natural history of disease where decisions on treatment became crucial.

A comorbidity and frailty driven decision is fundamental.

Consider a better management of comorbidity affecting HF symptoms

Consider ARNI if blood pressure and renal function permit

Consider device as CRT

Consider LVAD as destination treatment if no contraindicating comorbidity exists and if there is a removable frailty

Palliative care should be considered for patients with high level of comorbidity and not removable frailty