



A comprehensive follow-up programme of HF patients after hospital discharge: exequible capital gain?

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2018



DEPARTAMENTO
CORAÇÃO e VASOS

Background

- **Prevalence** is raising.
- **Mortality** is decreasing, but still remains high:
 - During hospitalization: **5-8%**;
 - Year after hospitalization: **17-20%**.
- **High readmission rate:**
 - 1st month after discharge: **20-30%**;
 - 1st year after discharge: **60-70%**.

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- **High readmission rate:**
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 - 1st year after discharge: **60-70%**.

Readmissions are responsible
for **80% of costs** related to HF

Follow-up programmes of HF patients: a way to solve the problem?

Background

It is recommended that patients with HF are enrolled in a multidisciplinary care management programme to reduce the risk of HF hospitalization and mortality.

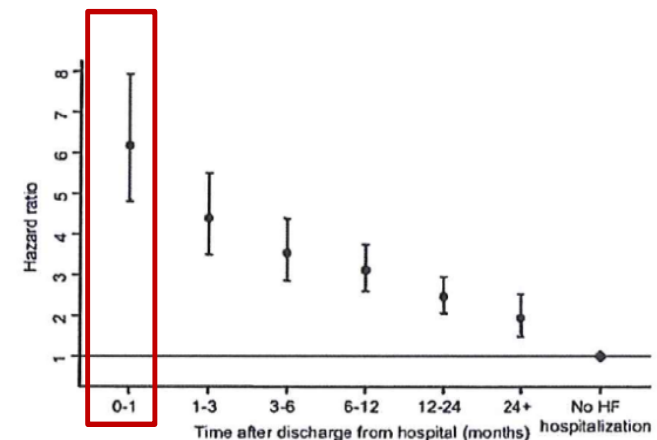
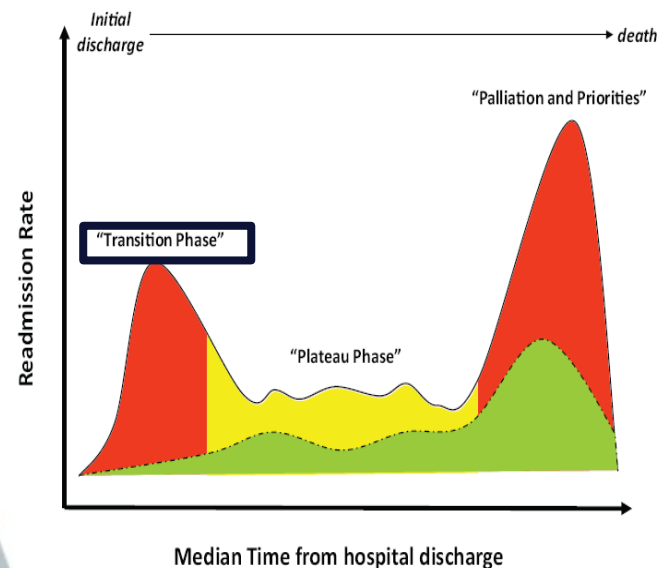
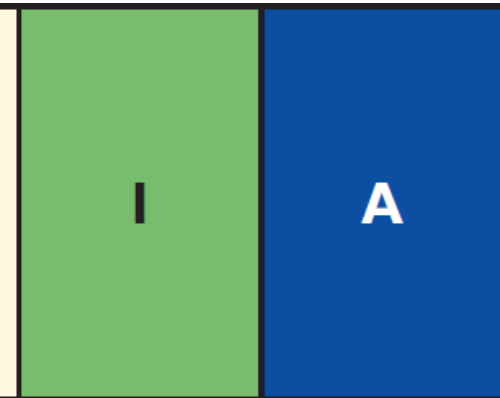
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Follow-up programmes of HF patients: a way to solve the problem?

Background

Comprehensive Discharge Planning With Postdischarge Support for Older Patients With Congestive Heart Failure

A Meta-analysis

Christopher O. Phillips, MD, MPH

- Single home visit;
- Increased Clinic follow-up;
- Multiple home visits;
- Frequent telephone contact;
- Day Hospital Services.

Follow-up programmes of HF patients: a way to solve the problem?

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Source	Duration of Follow-up, mo	Intervention Events/ Patients (%)	Control Events/ Patients (%)	Absolute Risk Reduction, %	Relative Risk Reduction (95% CI)	P Value for Heterogeneity
readmission		555/1590 (35)	741/1714 (43)	8	0.75 (0.64-0.88)	<.001
Death or readmission		250/567 (44)	354/587 (60)	16	0.73 (0.62-0.87)	.02
CHF or CVD readmission		118/522 (23)	210/631 (33)	10	0.65 (0.54-0.79)	.06
Death		191/1348 (14)	247/1499 (17)	3	0.87 (0.73-1.03)	.06†

Follow-up programmes of HF patients: a way to solve the problem?

Background

REVIEW

Annals of Internal Medicine

Transitional Care Interventions to Prevent Readmissions for Persons With Heart Failure

A Systematic Review and Meta-analysis

Cynthia Feltner, MD, MPH; Christine D. Jones, MD, MS; Crystal W. Cené, MD, MPH; Zhi-Jie Zheng, MD, PhD, MPH; Carla A. Sueta, MD, PhD; Emmanuel J.L. Coker-Schwimmer, MPH; Marina Arvanitis, MD; Kathleen N. Lohr, PhD, MPhil, MA; Jennifer C. Middleton, PhD; and Daniel E. Jonas, MD, MPH

Intervention Category	All-Cause Readmissions		HF-Specific Readmissions		Composite End Point		Mortality	
	30 d	3–6 mo	30 d	3–6 mo	30 d	3–6 mo	30 d	3–6 mo
Home-visiting program	Low†‡	High†	–§	Moderate†	Low†	Moderate†	Insufficient	Moderate†
STS	Insufficient	Moderate	Insufficient	High†	–§	Low	–§	Moderate†
Telemonitoring	Insufficient	Moderate	–§	Moderate	–§	–§	–§	Low
MDS-HF clinic	–§	High†	–§	Insufficient	–§	Moderate	–§	Moderate†
Nurse-led clinic	–§	Low	–§	Insufficient	–§	Insufficient	–§	Low
Primary care clinic	–§	Insufficient	–§	–§	–§	–§	–§	Insufficient
Primarily educational	–§	Insufficient	–§	Insufficient	–§	Low	–§	Low
Other	Insufficient	–§	–§	–§	–§	–§	Insufficient	–§

Figure 1. All-cause readmissions for transitional care interventions compared with usual care, by intervention category and outcome timing.

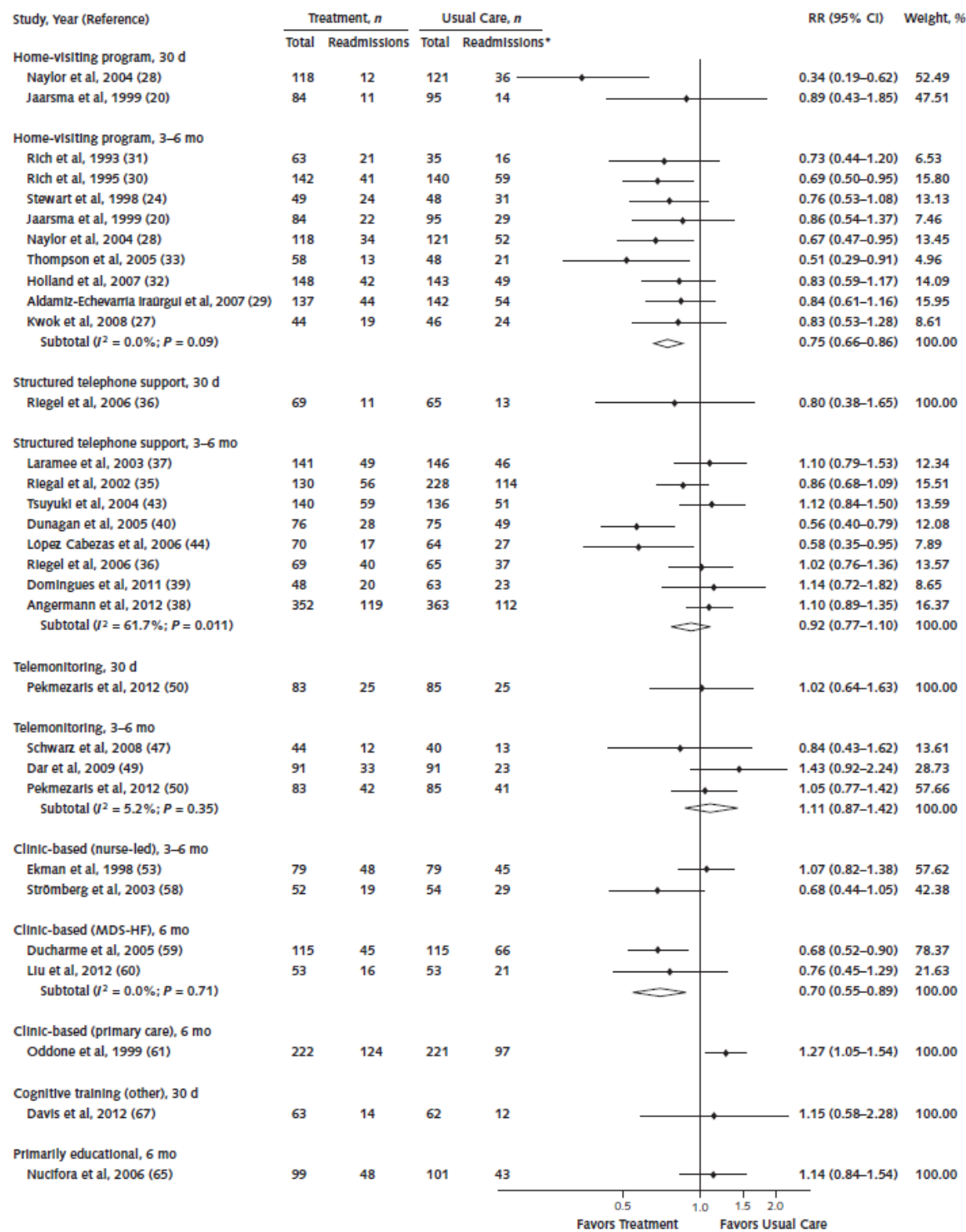
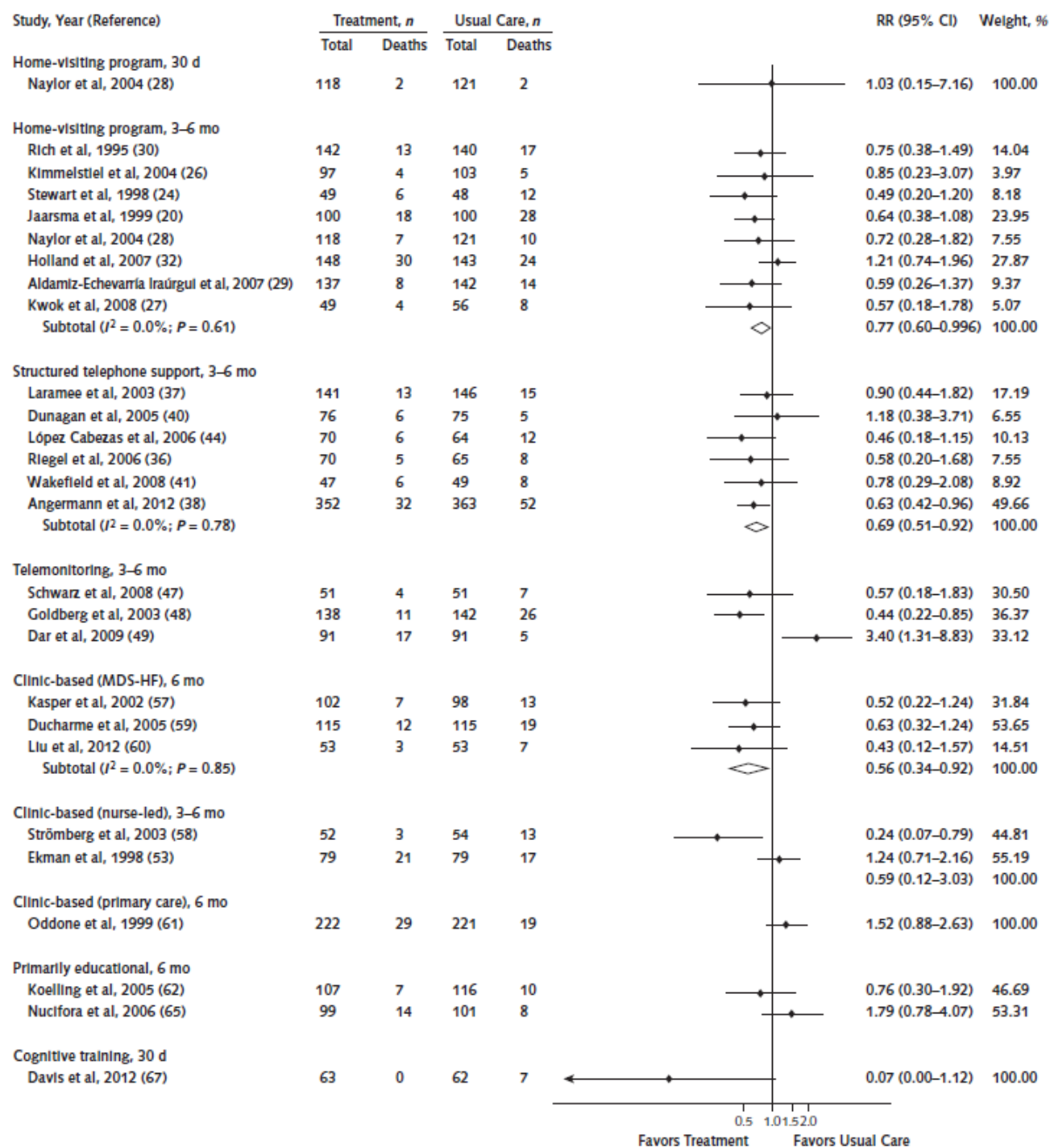


Figure 2. Mortality rate among persons receiving transitional care interventions compared with usual care, by intervention category and outcome timing.

RIC





RICA**HF***team*

Included Patients

- Patients admitted to the Cardiology Department ward for **acute HF**:
 - **Decompensated chronic HF**
 - **New-onset HF**
- **First Patient:** April 2016
- **Fiftieth Patient:** November 2017

Differentiating Interventions

- **Consultations with cardiologists at 7-10 days, 3, 6 and 12 months after discharge;**
- Clinical evaluation directed to the identification of signs or symptoms of decompensation;
- Laboratorial evaluation that includes monitoring of NTproBNP, target organ dysfunction and comorbidities;
- Electrocardiogram and echocardiography between the 3rd and 6th month of follow-up;

Differentiating Interventions

- **Consultations with cardiologists at 7-10 days, 3, 6 and 12 months after discharge;**
- Assessment of compliance and tolerance to therapy and individualized titration;
- Patient educating about self-care and lifestyle modification;
- Quality of life evaluation (Kansas City Cardiomyopathy Questionnaire).

Population Characteristics

N = 50

Age – average (SD), years	67 ± 11
Male sex – N (%)	38 (76%)
LVEF – Median (IQR), %	27 (20-35)
HFrEF – N (%)	43 (86%)
HFmrEF – N (%)	6 (12%)
HFpEF – N (%)	1 (2%)
NYHA Functional Class – N (%)	
I	15 (30%)
II	32 (64%)
III	3 (6%)

Population Characteristics

N = 50

Etiology – N (%)	
Dilated Cardiomyopathy	28 (56%)
Ischemic Cardiomyopathy	14 (28%)
Valvular Heart Disease	5 (10%)
Hypertensive Heart Disease	1 (5%)
Restrictive Cardiomyopathy	1 (5%)
Tachycardiomyopathy	1 (5%)

Control Group

- **50 patients;**
- Selected from a cohort of patients admitted for acute HF **prior to the implementation of the protocol.**
- **Nested-case control design:**
 - NYHA Functional Class;
 - Left Ventricular Ejection Fraction;
 - Age.

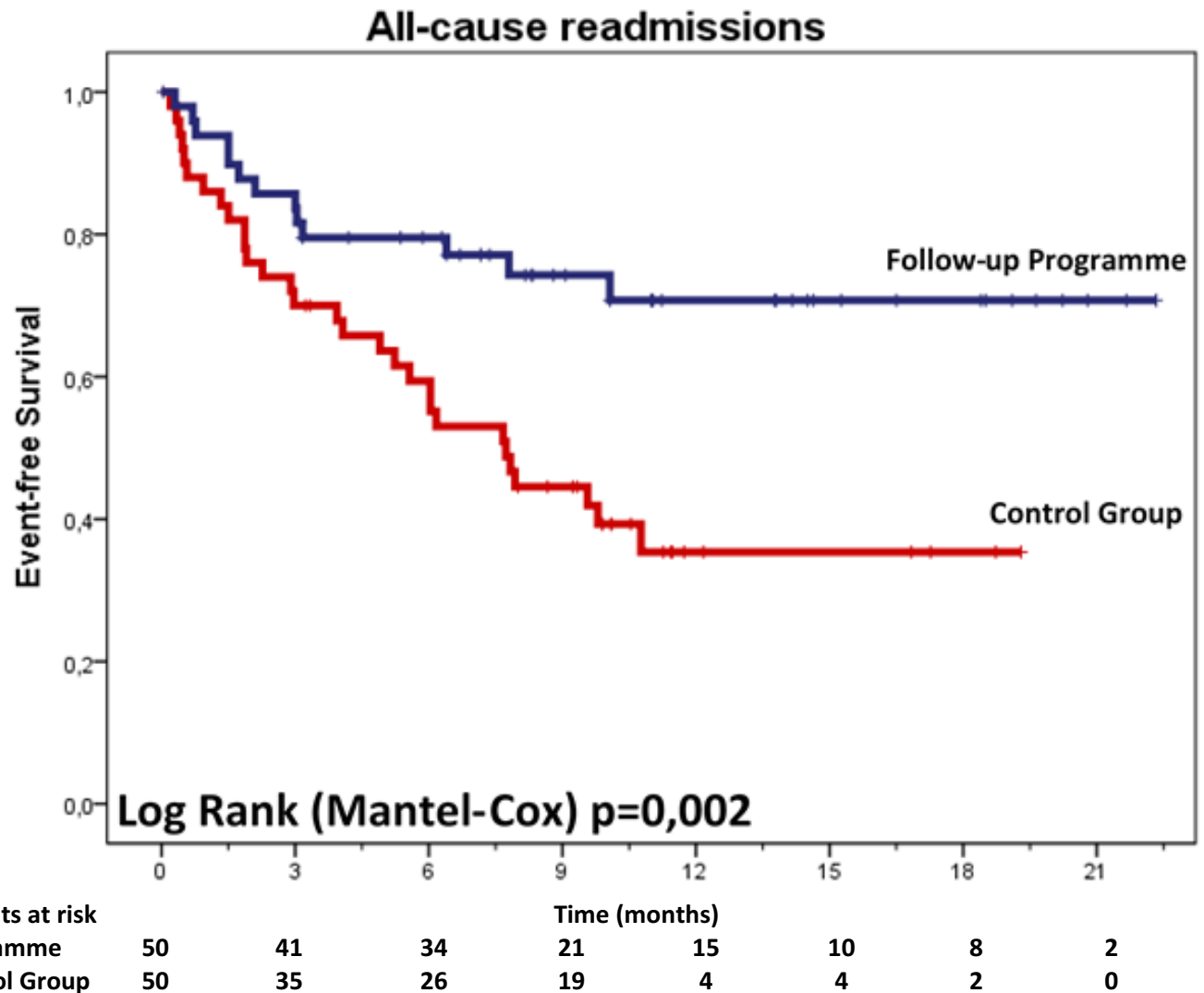
Control Group

	Programme	Control
Age – average (SD), years	67 ± 11	69 ± 13
LVEF – Median (IQR), %	27 (20-35)	29 (24-41)
NYHA Functional Class – N (%)		
I	15 (30%)	19 (38%)
II	32 (64%)	29 (58%)
III	3 (6%)	2 (4%)
Follow-up – average (SD), months	11 ± 5.3	11 ± 5.5

p = NS

Results

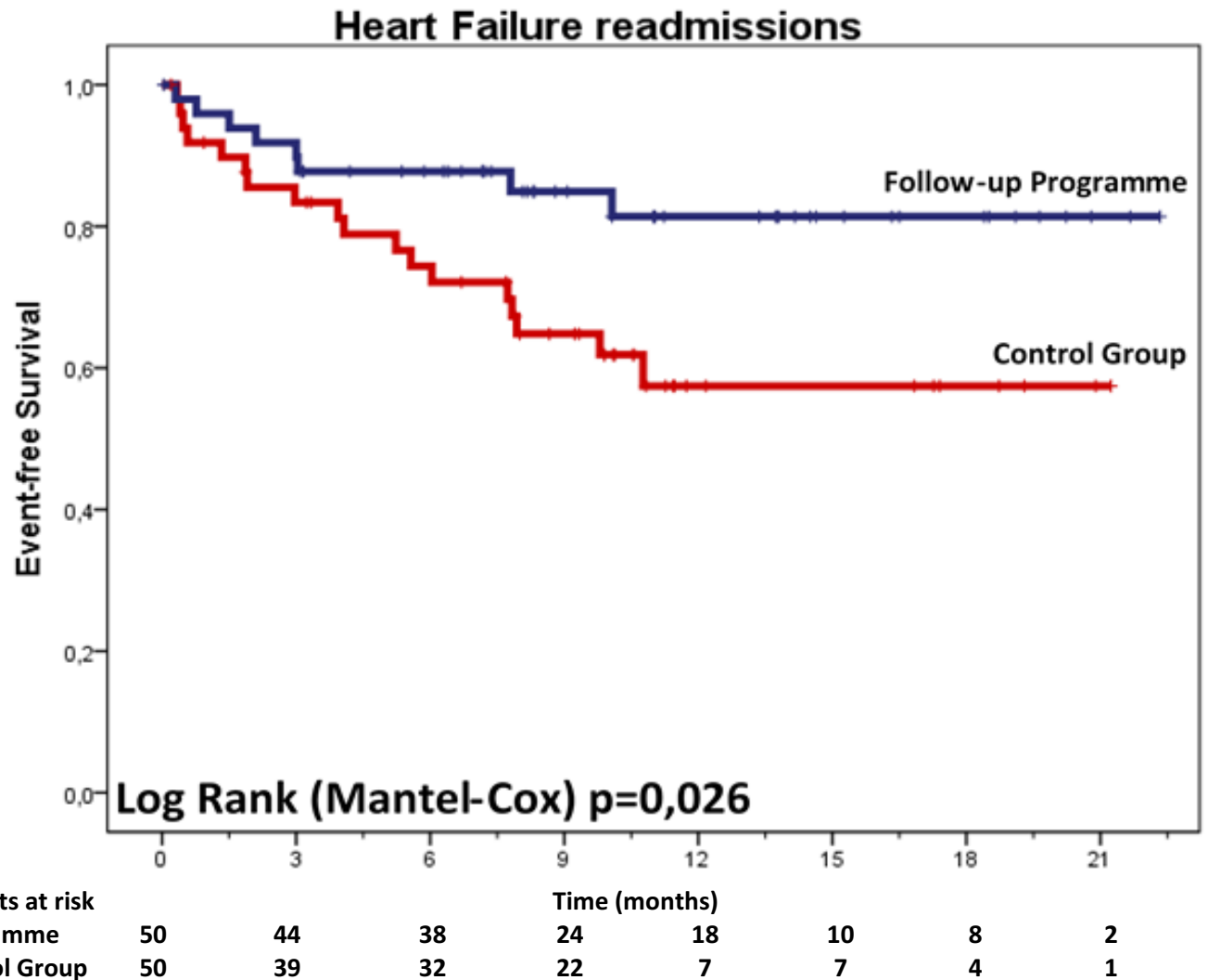
- Programme Group: 13 (**26%**)
- Control Group: 30 (**60%**)
- RRR: **56.7%**
- NNT: 2.91
- $p = 0.003$
- HR: 0.38 (IQR 0.2-0.73)



CHLN Cardiology Department Registry and Follow-up Programme of HF Patients

Results

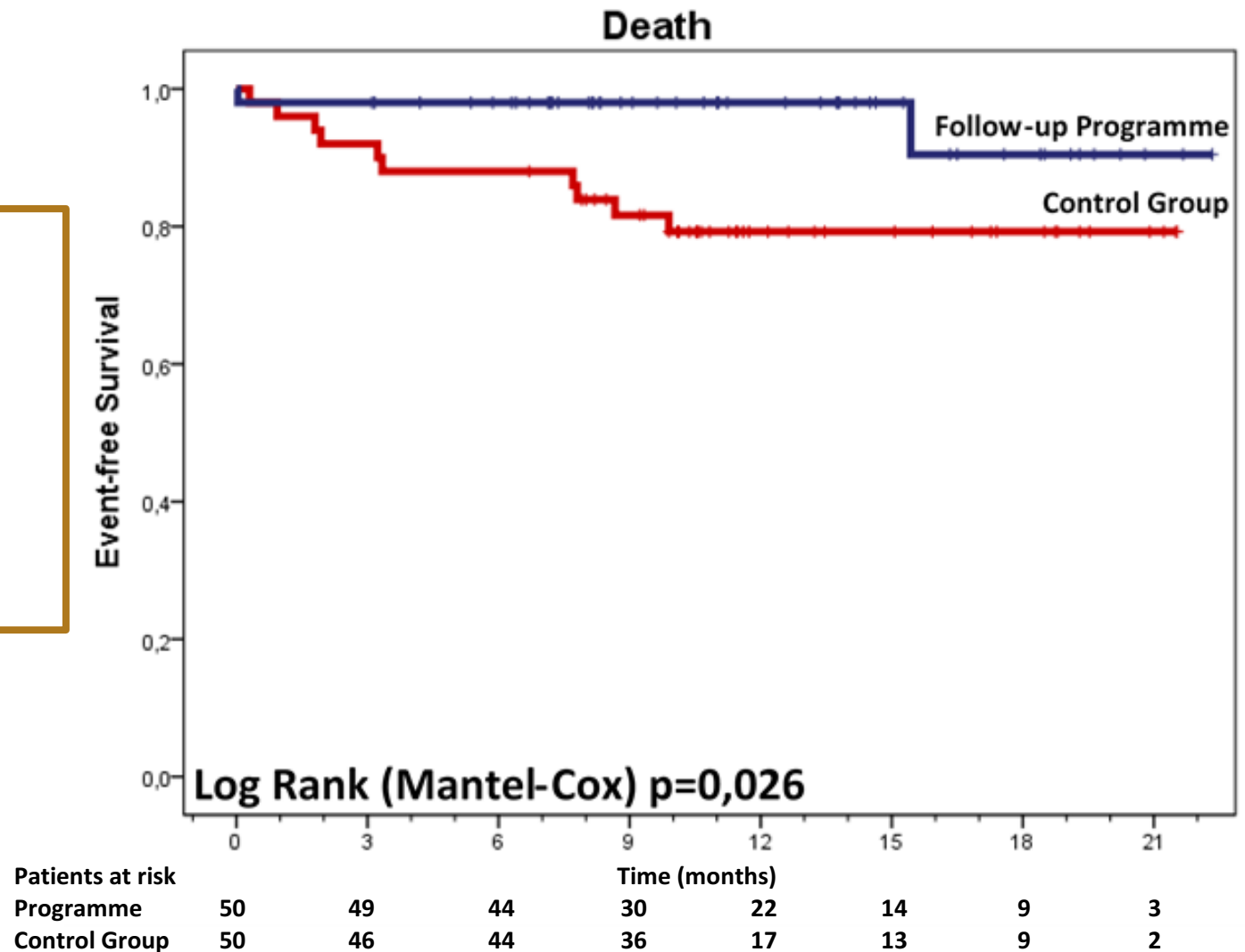
- Programme Group: 8 (**16%**)
- Control Group: 18 (**36%**)
- RRR: **64.4%**
- NNT: 3.45
- $p = 0.032$
- HR: 0.4 (IQR 0.17-0.92)



CHLN Cardiology Department Registry and Follow-up Programme of HF Patients

Results

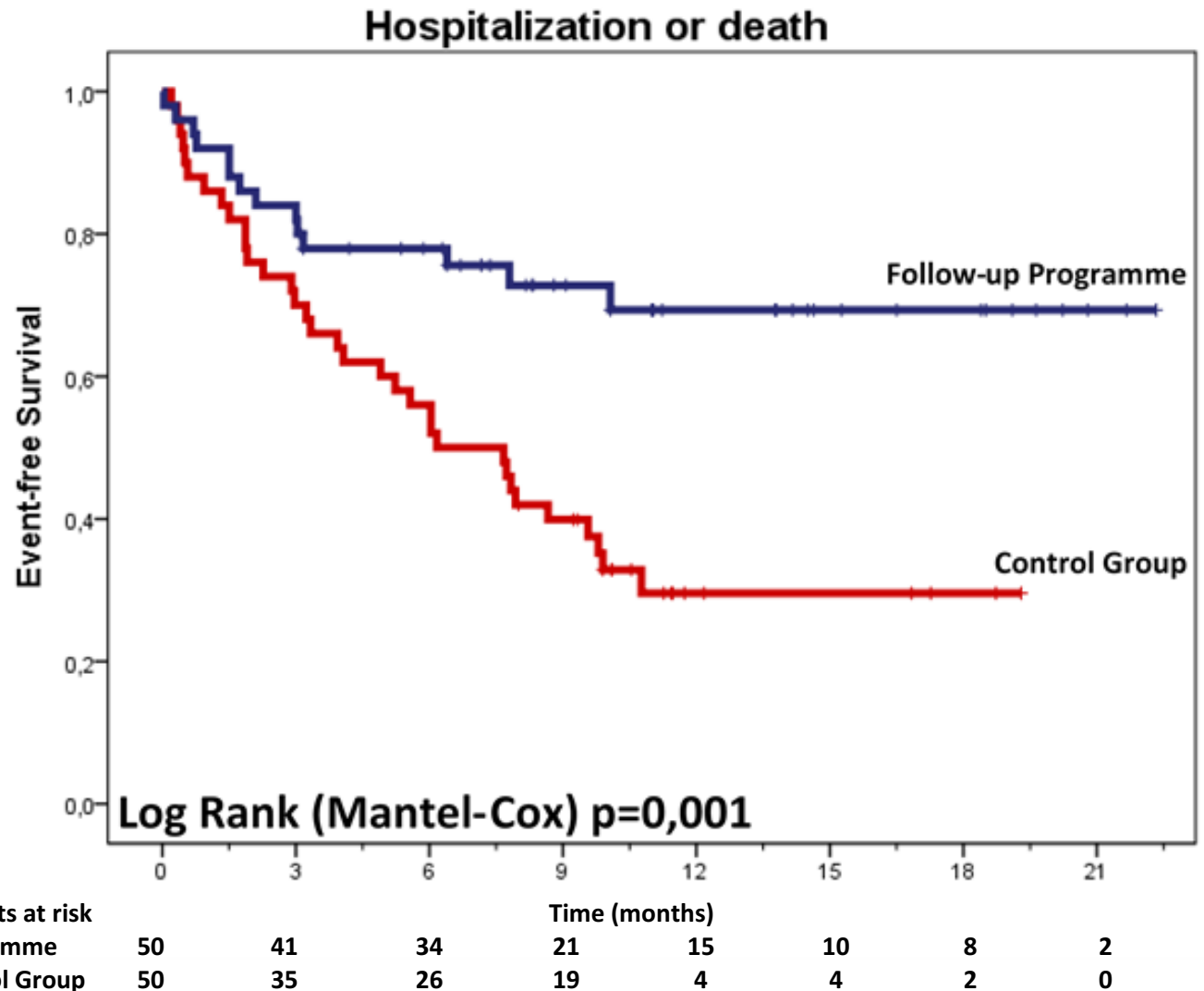
- Programme Group: 2 (4%)
- Control Group: 10 (20%)
- RRR: **80%**
- NNT: 6.25
- $p = 0.044$
- HR: 0.21 (IQR 0.05-0.96)



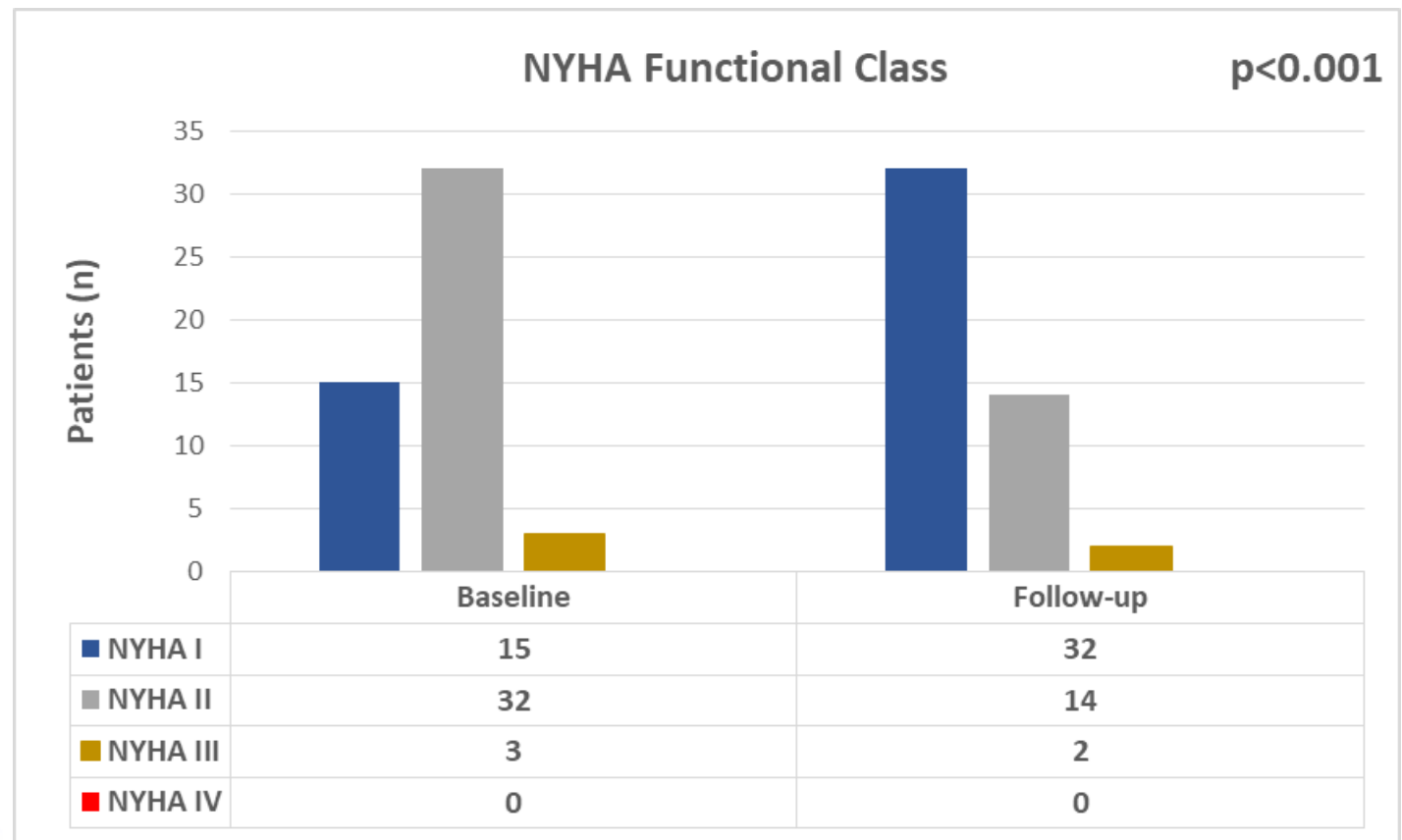
CHLN Cardiology Department Registry and Follow-up Programme of HF Patients

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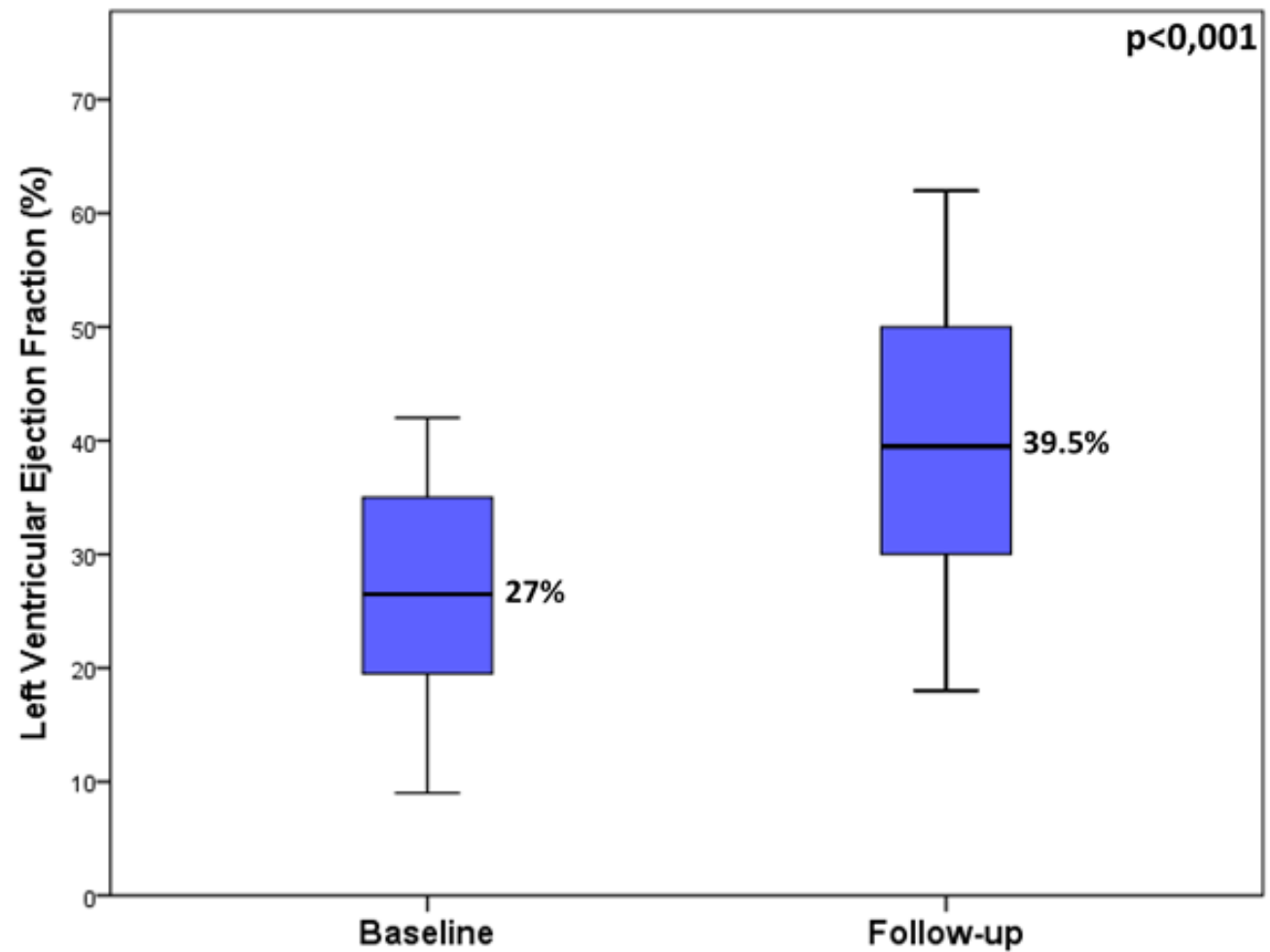
- Programme Group: 14 (**28%**)
- Control Group: 34 (**68%**)
- RRR: **58.8%**
- **NNT: 2.5**
- $p = 0.001$
- HR: 0.36 (IQR 0.19-0.67)



Results

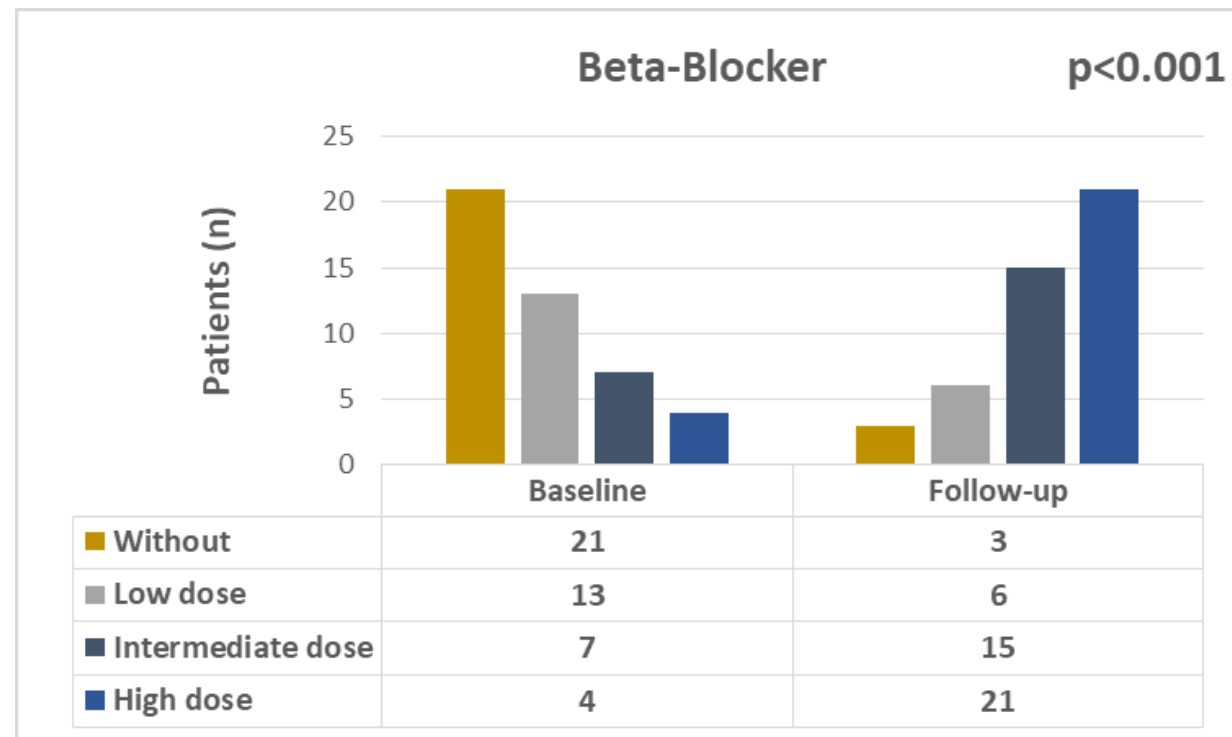


Results – LVEF



Results – HFrEF

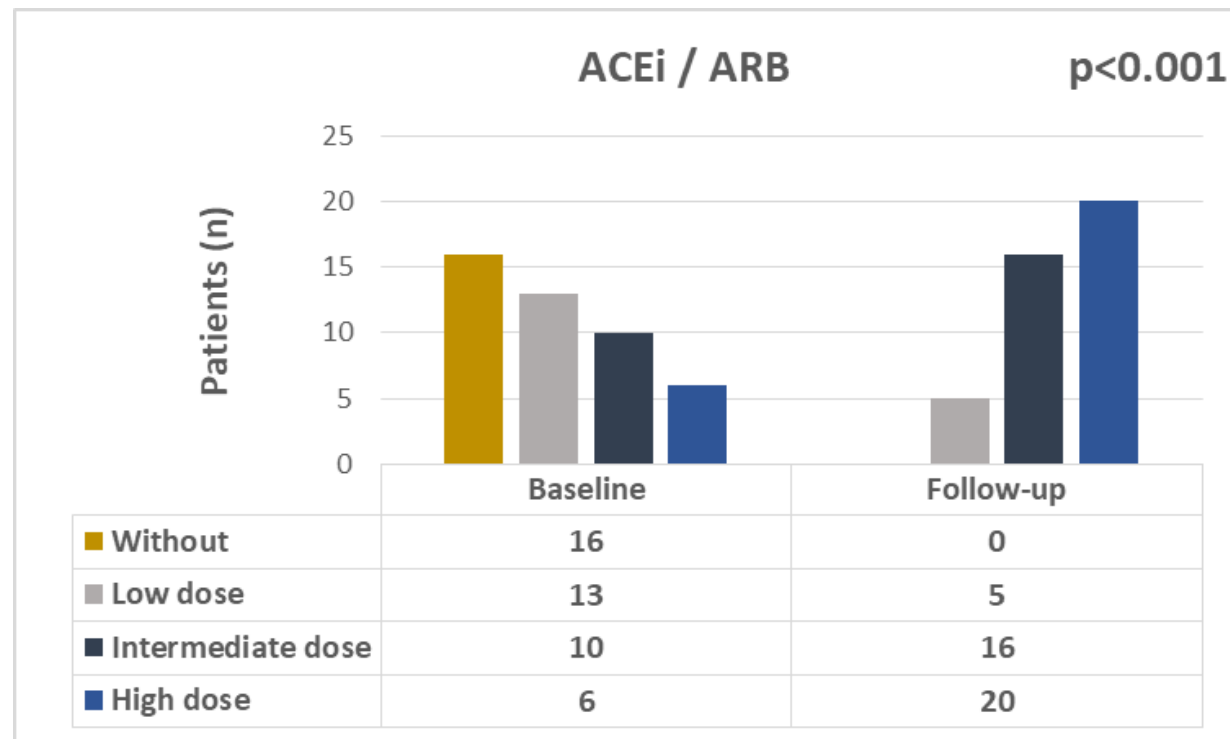
- **Beta-blocker:**
 - Baseline: 55.6%
 - Follow-up: **93.3%**



Results – HFrEF

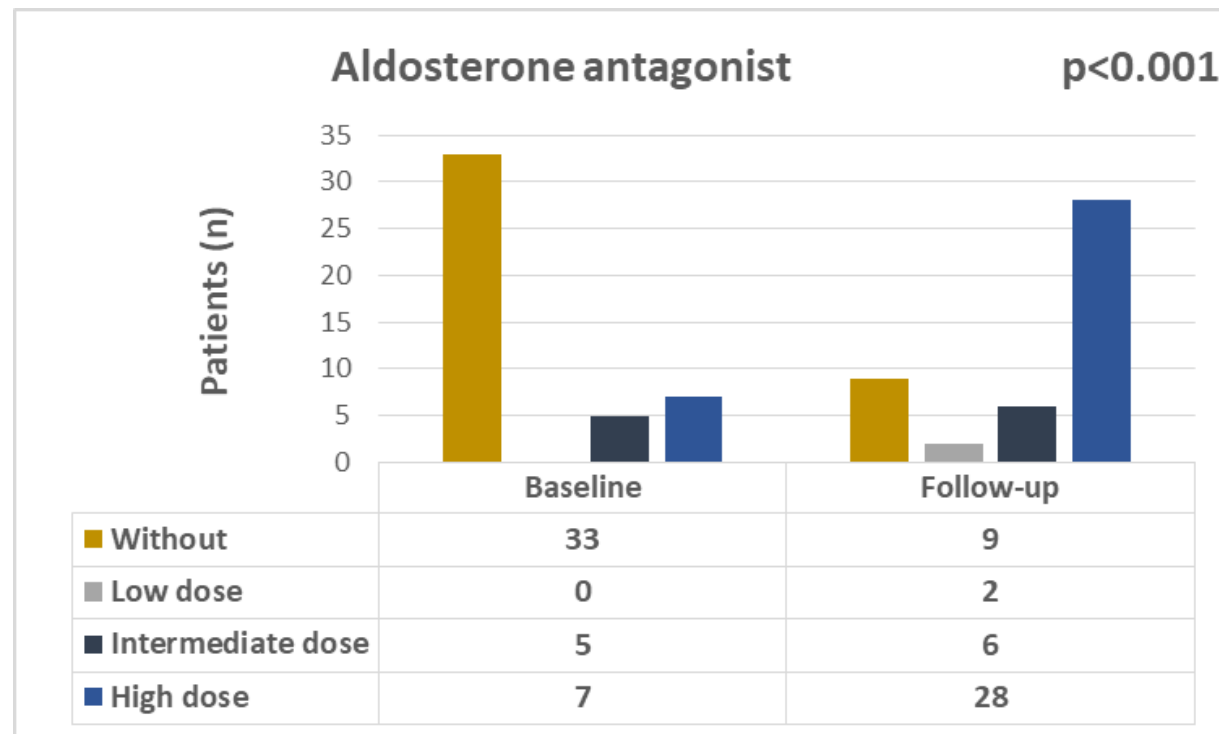
- **ACEi / ARB:**
 - Baseline: 64.4%
 - Follow-up: **100%***

*7.9%: Sacubitril/Valsartan

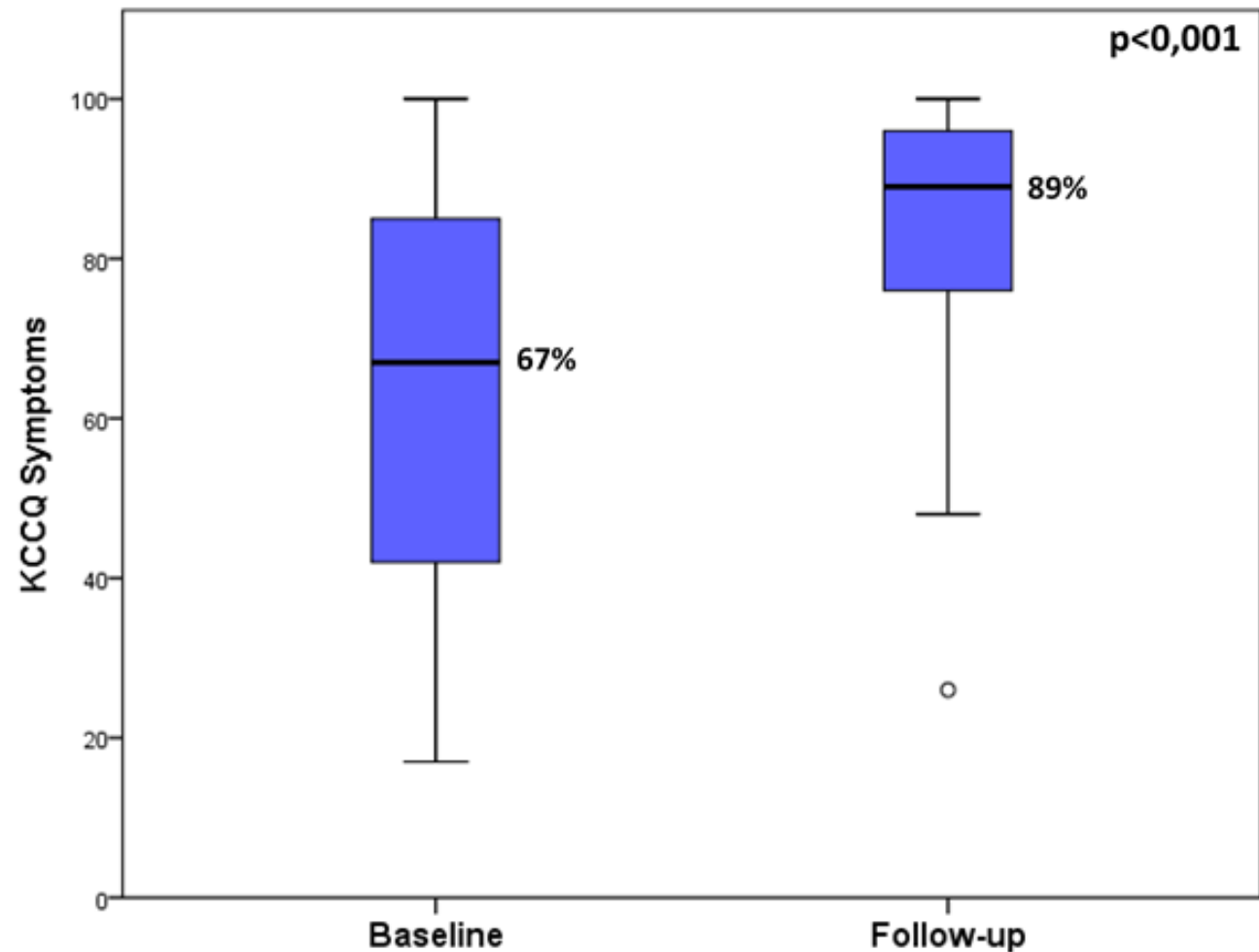


Results – HFrEF

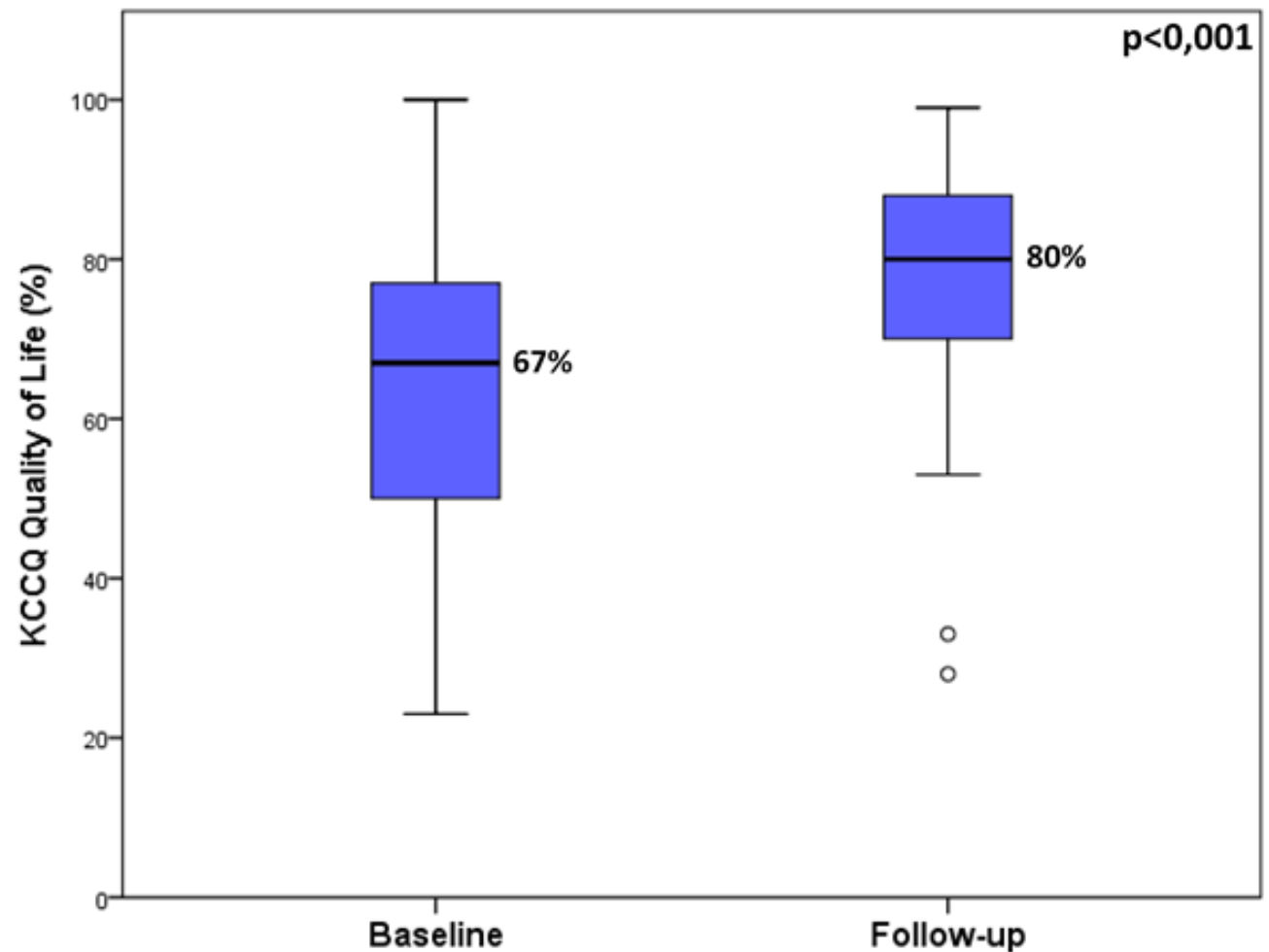
- **Aldosterone antag.:**
 - Baseline: 26.7%
 - Follow-up: **80%**



Results – Quality of Life



Results – Quality of Life



Conclusions

- Heart Failure patients benefit from being enrolled in comprehensive follow-up programmes.
- Our programme has been a successful experience:
 - Marked **reduction in readmission rates**;
 - Marked **reduction in mortality**;
 - Significant **improvement** in patient **functional class and quality of life**.
- These results support the need for investment in this type of programme in order to **reduce Heart Failure morbimortality and associated costs**.



Thank you.

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