EUROPEAN PRIMARY CARE

EPCCS

CARDIOVASCULAR SOCIETY

10th Annual Scientific Meeting
EPCCS - Annual Cardiovascular
Summit for Primary Care - 2018
March 15-16, 2018, Barcelona, Spain

Managing heart failure in primary care:
The GP perspective

Dr Miguel Angel Muñoz. Institut Català de la Salut and Primary Healthcare University Research Institute IDIAP-Jordi Gol (Barcelona. Spain).

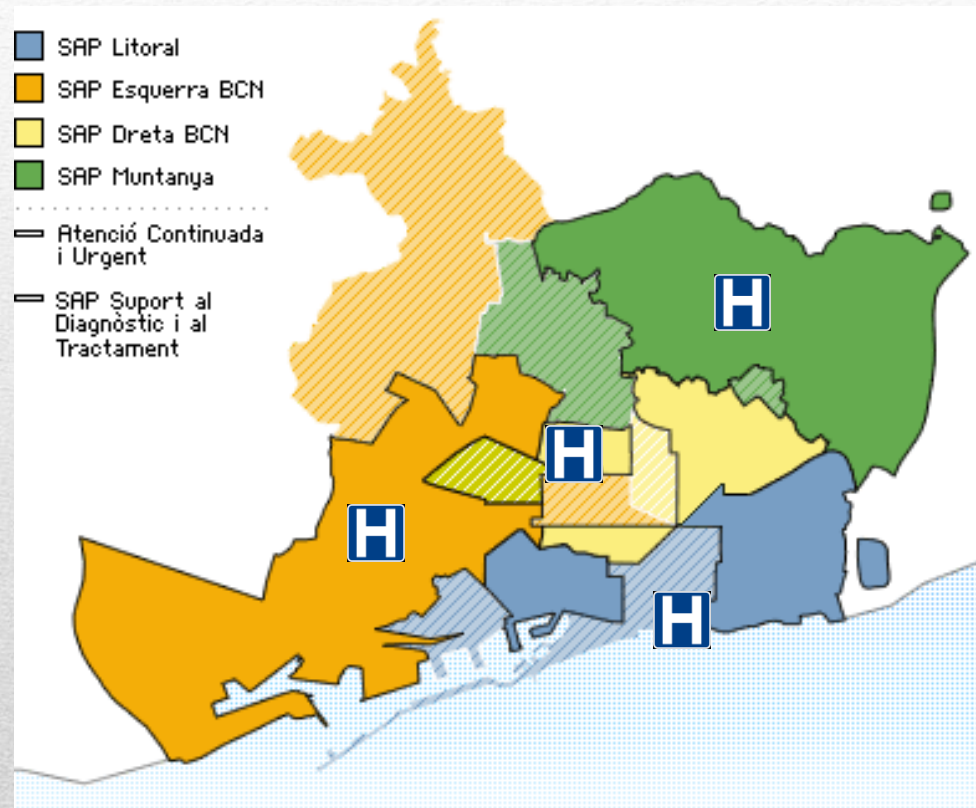*Primary Healthcare Cardiovascular Research Group: GRECAP*

Generalitat de Catalunya
Departament de Salut

Institut Català de la Salut
Àmbit d'Atenció Primària
Barcelona Ciutat

PrimàriaBCN

A L'ICS
iguals

gencat.cat/ics

53 Primary Centres

1330 patients/GP

30 HF patients /GP

14 HF visits/year

SAP Litoral
SAP Esquerra BCN
SAP Dreta BCN
SAP Muntanya
Atenció Continuada i Urgent
SAP Suport al Diagnòstic i al Tractament

ROLE OF GP IN THE MANAGEMENT OF PATIENTS WITH HEART FAILURE

Preparing this speach I wonder…..what would you like to hear from me in this session?

What is better to my patients? = What to do

What is important not to do:

not enough evidence

evidence of harm

My limitations:

Health System
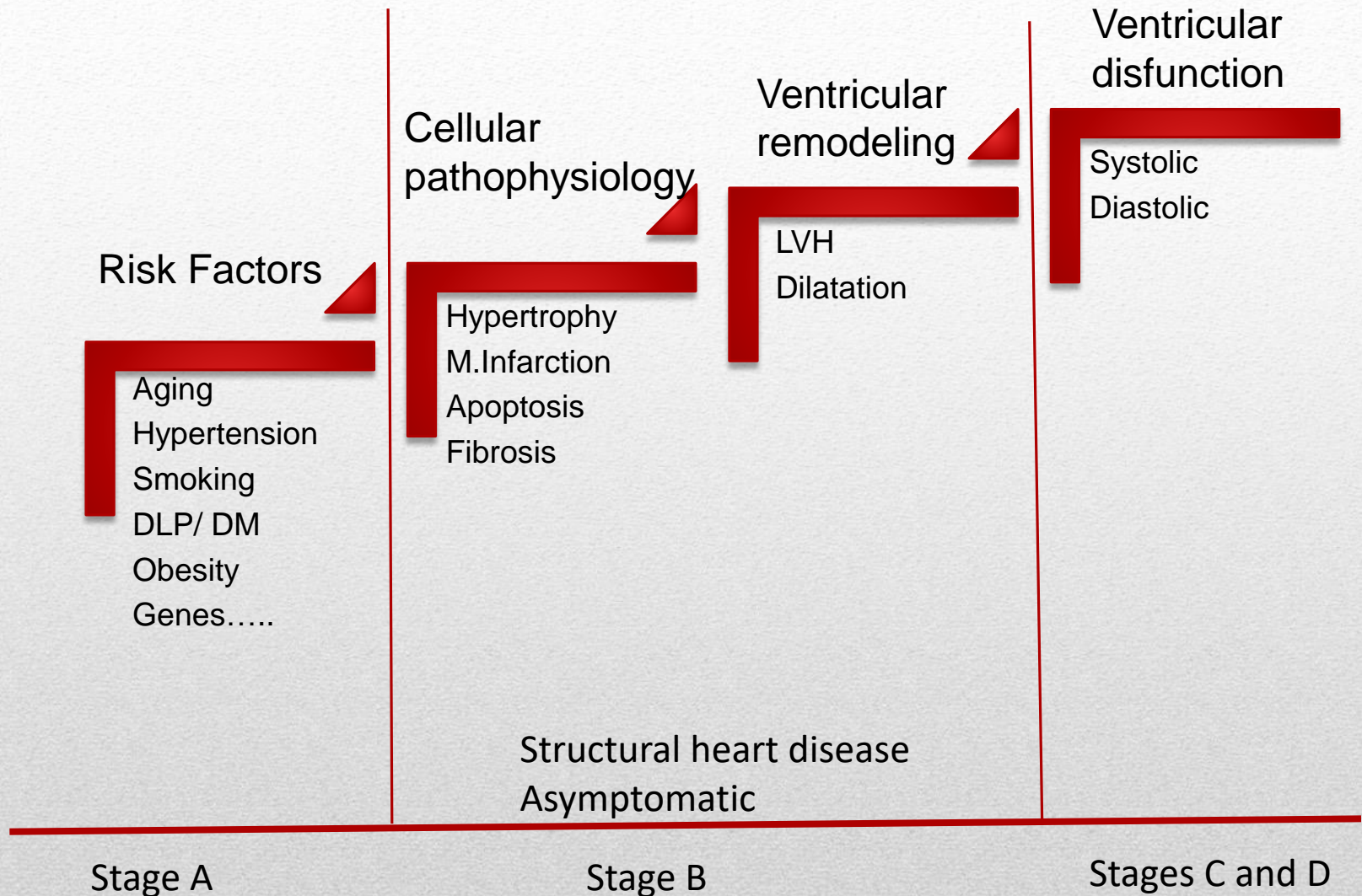
My own skills = When to refer my patients

It is important the role of my patients in taking decisions?
Do my patients maybe prefer to die at home?

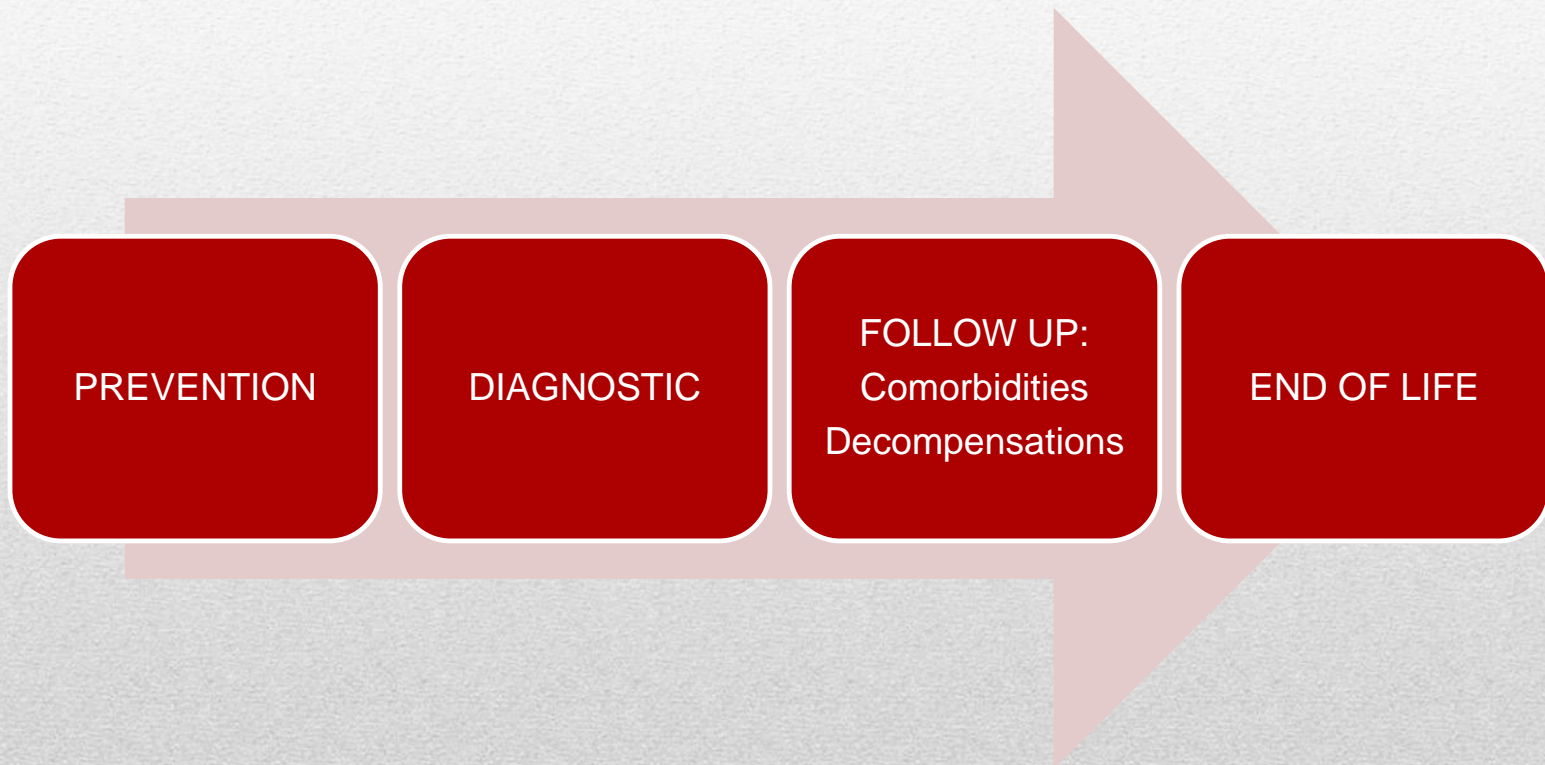# ROLE OF GP IN THE MANAGEMENT OF PATIENTS WITH HEART FAILURE

- Early diagnosis: case finding
- Ensure a right diagnosis
- Relief symptoms
- Improve prognosis: EBM
- Involving patients in self care
- Improve quality of life
- Take care of patients and their relatives until the end stages

- **Carrying out research in Primary Care**

Evolution of HEART FAILURE

Ventricular disfunction

Systolic

Diastolic

Ventricular remodeling

LVH

Dilatation

Cellular pathophysiology

Hypertrophy

M.Infarction

Apoptosis

Fibrosis

Risk Factors

Aging

Hypertension

Smoking

DLP/ DM

Obesity

Genes…..

Structural heart disease

Asymptomatic

| Stage A | Stage B | Stages C and D |

5

PREVENTION

DIAGNOSTIC

FOLLOW UP:
Comorbidities
Decompensations

END OF LIFE

PREVENTION

Risk factors for heart failure

Major risk factors	Risk
Coronary Artery Disease	2-3 fold
Hypertension	2-3 fold
Diabetes Mellitus	2,5 fold (men) 5 fold (Women)
Obesity	Each unit of BMI increases 6% risk
Valvular heart disease	

Minor risk factors
Smoking
Dyslipidaemia
Chronic Kidney Disease
Others: anemia, sedentary lifestyle, psychological distress

8

Taylor & Francis
Taylor & Francis Group

Original Article

Impact of the sustained control of cardiovascular risk factors on first episode heart failure: The relevant role of primary care

Miguel-Angel Muñoz[1,2,3], Jordi Real[2,4], José-Luis del Val[1,2], Ernest Vinyoles[1,2], Xavier Mundet[1,2,3], Mar Domingo[1,2], Cristina Enjuanes[5,6], José-Maria Verdú-Rotellar[1,2,3]

OR for the first HF hospitalization risk according to the risk factors control

Variable	OR adjusted	95% CI
Time: 12 months before heart failure episode		
Body mass index (kg/m^2)	1.06	(0.99–1.13)
Heart rate (beat/min)	1.02	(1.00–1.05)
Systolic blood pressure (mm/Hg)	1.03	(1.01–1.04)
Diastolic blood pressure (mm/Hg)	1.02	(0.98–1.05)
HDL cholesterol (mg/dl)	0.95	(0.92–0.98)
LDL cholesterol (mg/dl)	1.00	(0.99–1.01)
Time: between 24 and 13 months before heart failure episode		
Body mass index (kg/m^2)	1.08	(1.01–1.15)
Heart rate (beat/min)	1.02	(0.99–1.05)
Systolic blood pressure (mm/Hg)	1.01	(0.99–1.03)
Diastolic blood pressure (mm/Hg)	1.00	(0.97–1.04)
HDL cholesterol (mg/dl)	0.97	(0.94–1.00)
LDL cholesterol (mg/dl)	1.00	(0.99–1.01)

DIAGNOSIS

Awareness and perception of heart failure among European cardiologists, internists, geriatricians, and primary care physicians

Willem J. Remme[1]*, John J.V. McMurray[2], F.D. Richard Hobbs[3], Alain Cohen-Solal[4], José Lopez-Sendon[5], Alessandro Boccanelli[6], Faiez Zannad[7], Bernhard Rauch[8], Karen Keukelaar[1], Cezar Macarie[9], Witold Ruzyllo[10], and Charles Cline[11] for the SHAPE Study Group

12

Use of echocardio to diagnose HF
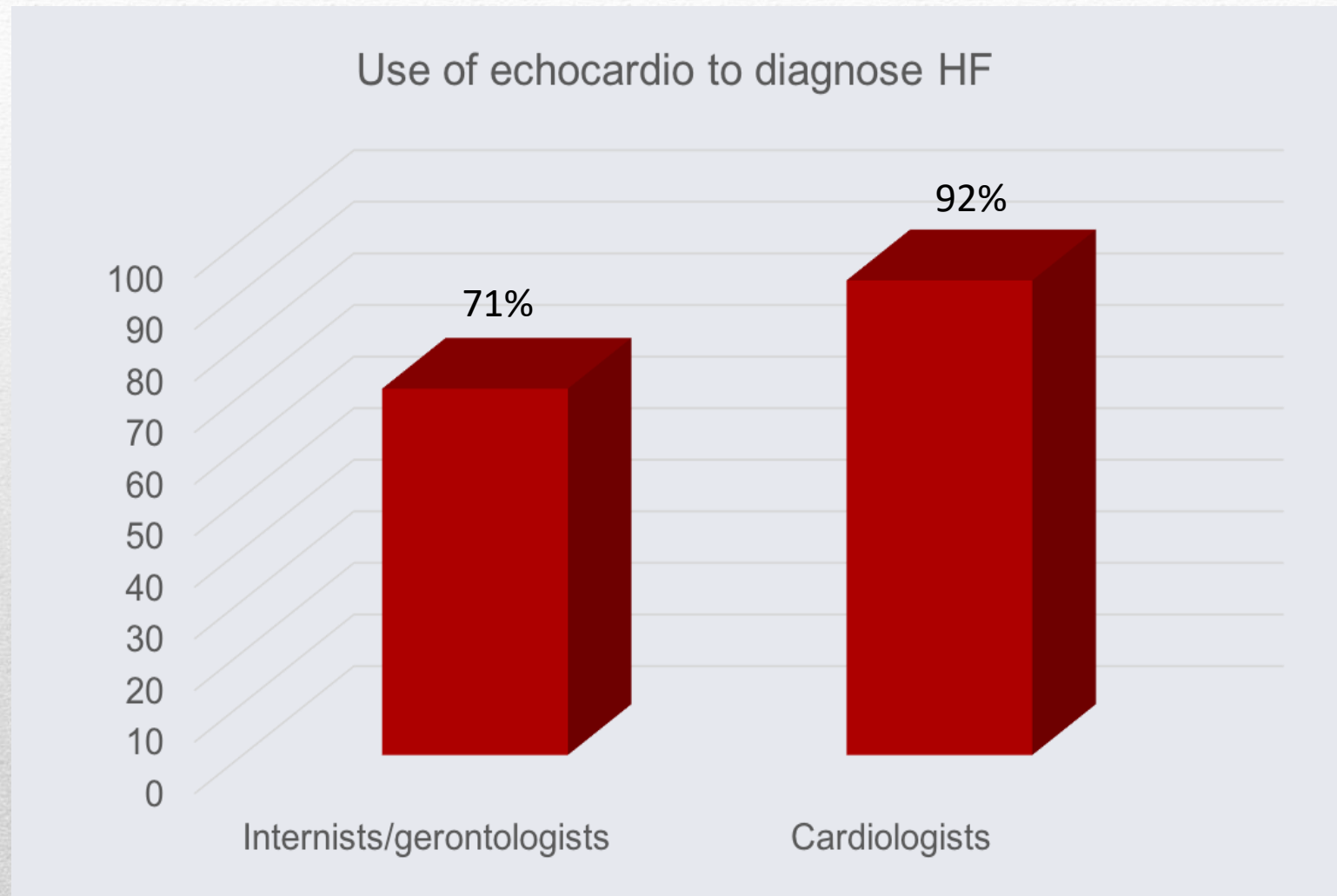
Survey to GP:
Of those patients that you have diagnosed with heart failure, how did you come to that conclusion?

14
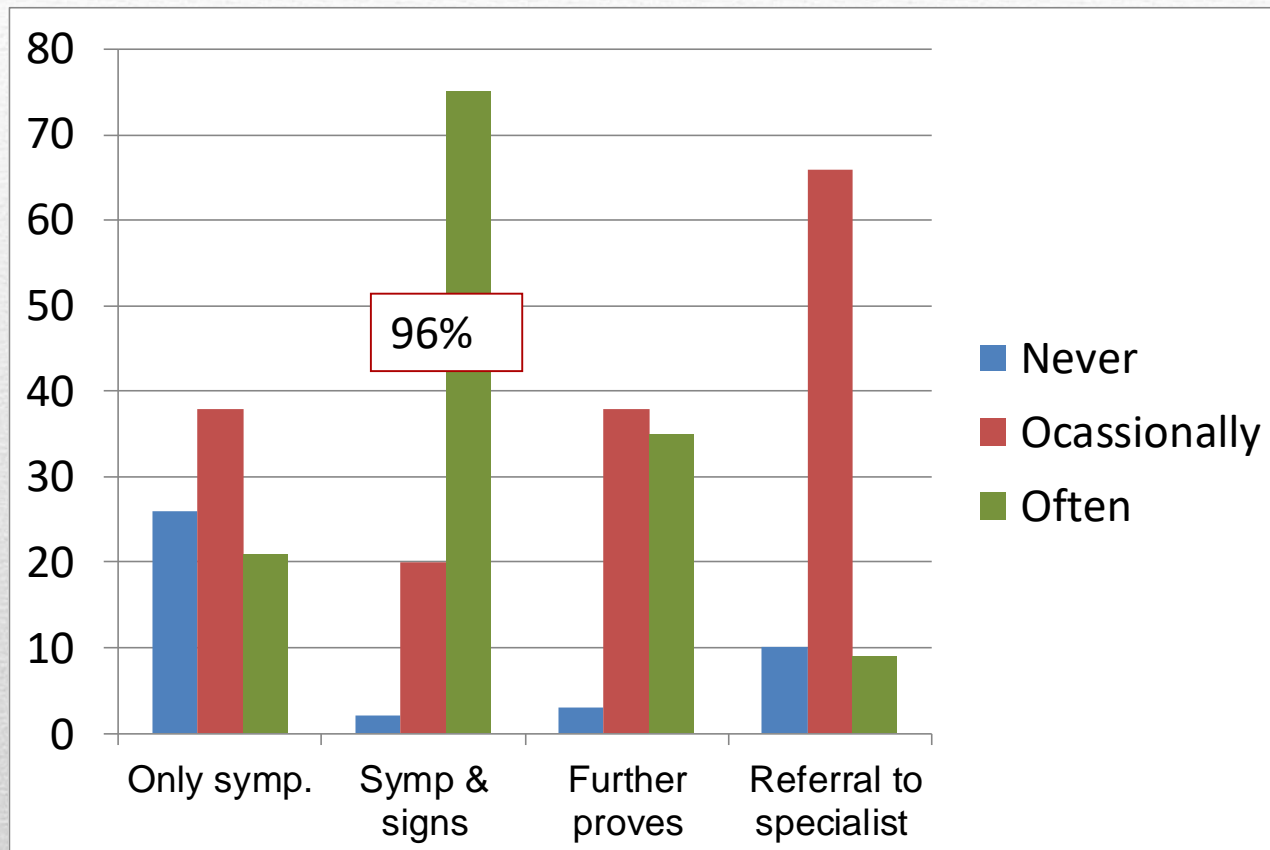
Table 6. Framingham Diagnostic Criteria for Heart Failure*

Major criteria	Minor criteria
Acute pulmonary edema	Ankle edema
Cardiomegaly	Dyspnea on exertion
Hepatojugular reflex	Hepatomegaly
Neck vein distension	Nocturnal cough
Paroxysmal nocturnal dyspnea or orthopnea	Pleural effusion
Rales	Tachycardia (> 120 beats per minute)
Third heart sound gallop	

*—Heart failure is diagnosed when two major criteria or one major and two minor criteria are met.

Adapted with permission from Maestre A, Gil V, Gallego J, Aznar J, Mora A, Martin-Hidalgo A. Diagnostic accuracy of clinical criteria for identifying systolic and diastolic heart failure: cross-sectional study. J Eval Clin Pract. 2009;15(1):60.

Symptoms	Signs
Typical	**More specific**
Breathlessness Orthopnoea Paroxysmal nocturnal dyspnoea Reduced exercise tolerance Fatigue, tiredness, increased time to recover after exercise Ankle swelling	Elevated jugular venous pressure Hepatojugular reflux Third heart sound (gallop rhythm) Laterally displaced apical impulse
Less typical	**Less specific**
Nocturnal cough Wheezing Bloated feeling Loss of appetite Confusion (especially in the elderly) Depression Palpitations Dizziness Syncope Bendopnea[53]	Weight gain (>2 kg/week) Weight loss (in advanced HF) Tissue wasting (cachexia) Cardiac murmur Peripheral oedema (ankle, sacral, scrotal) Pulmonary crepitations Reduced air entry and dullness to percussion at lung bases (pleural effusion) Tachycardia Irregular pulse Tachypnoea Cheyne Stokes respiration Hepatomegaly Ascites Cold extremities Oliguria Narrow pulse pressure

unlikely:
der other
agnosis

16

2016 ESC Guidelines for diagnosis and treatment of Heart Failure

About variability in diagnosis

- Does every GP know or follow the guideline recommendations?

- Does every GP has access to the BNP determinations?

- Is it feasible for GP to obtain an ecocadio in a reasonable lenght of time?

17

About variability in diagnosisc

Research

Mark J Valk, Arend Mosterd, Berna DL Broekhuizen, Nicolaas PA Zuithoff, Marcel AJ Landman, Arno W Hoes and Frans H Rutten

Overdiagnosis of heart failure in primary care:

a cross-sectional study

Abstract

Background
Access to echocardiography in primary care is limited, but is necessary to accurately diagnose heart failure (HF).

Aim
To determine the proportion of patients with a GP's diagnosis of HF who really have HF.

Design and setting
A cross-sectional study of patients in 30 general practices with a GP's diagnosis of heart failure, based on the International Classification of Primary Care (ICPC) code K77, between June and November 2011.

Method
Electronic medical records of the patients' GPs were scrutinised for information on the diagnosis. An expert panel consisting of two

INTRODUCTION

Heart failure (HF) is a chronic progressive disease mainly affecting older people.[1] Pharmacological treatment, devices, and HF management programmes can reduce morbidity and mortality in patients who have HF with reduced ejection fraction (HFrEF).[1] In this study the authors defined HFrEF as symptoms and/or signs suggestive of heart failure, and a left ventricular ejection fraction (LVEF) ≤45% with echocardiography. In patients who have HF with preserved ejection fraction (HFpEF) clear evidence-based disease-modifying treatment is still lacking, but, importantly, symptoms may be reduced with adequate titration of diuretics during periods of fluid retention.[1] This study defined HFpEF as symptoms and/or signs suggestive of heart failure, and

referral for echocardiography of ind with suggestive symptoms and who in addition have natriuretic levels above the exclusionary thre Nevertheless, this strategy has no completely implemented yet,[2,4,6] re in the risk of over- and underdiagn HF if GPs consider the clinical asse only. Multiple studies have me underdiagnosis of HF in primary [11] but exact data on overdiagnosis setting are lacking.[11]

The authors wanted to q overdiagnosis of HF in primary ca therefore evaluated whether p with a GP's diagnosis of HF really according to an expert panel that the criteria of the European Soc Cardiology (ESC) HF guidelines. Addit

Expert pannel:
Validate if BNP or Ecocardio or Hospital admission

Concluded:
one-third of PC HF may be overdiagnosed

18

Validation of heart failure diagnosis registered in primary care records in two primary care centres in Barcelona (Spain) and factors related. A cross-sectional study

Jose María Verdú-Rotellar, Eva Frigola-Capell, Rosa Alvarez-Pérez, Daniela da Silva, Cristina Enjuanes, Mar Domingo, Amparo Mena & Miguel-Angel Muñoz

19

Validación del diagnóstico de IC.

53.6%

44,2%

Verdú-Rotellar et al. EJGP. 2017.
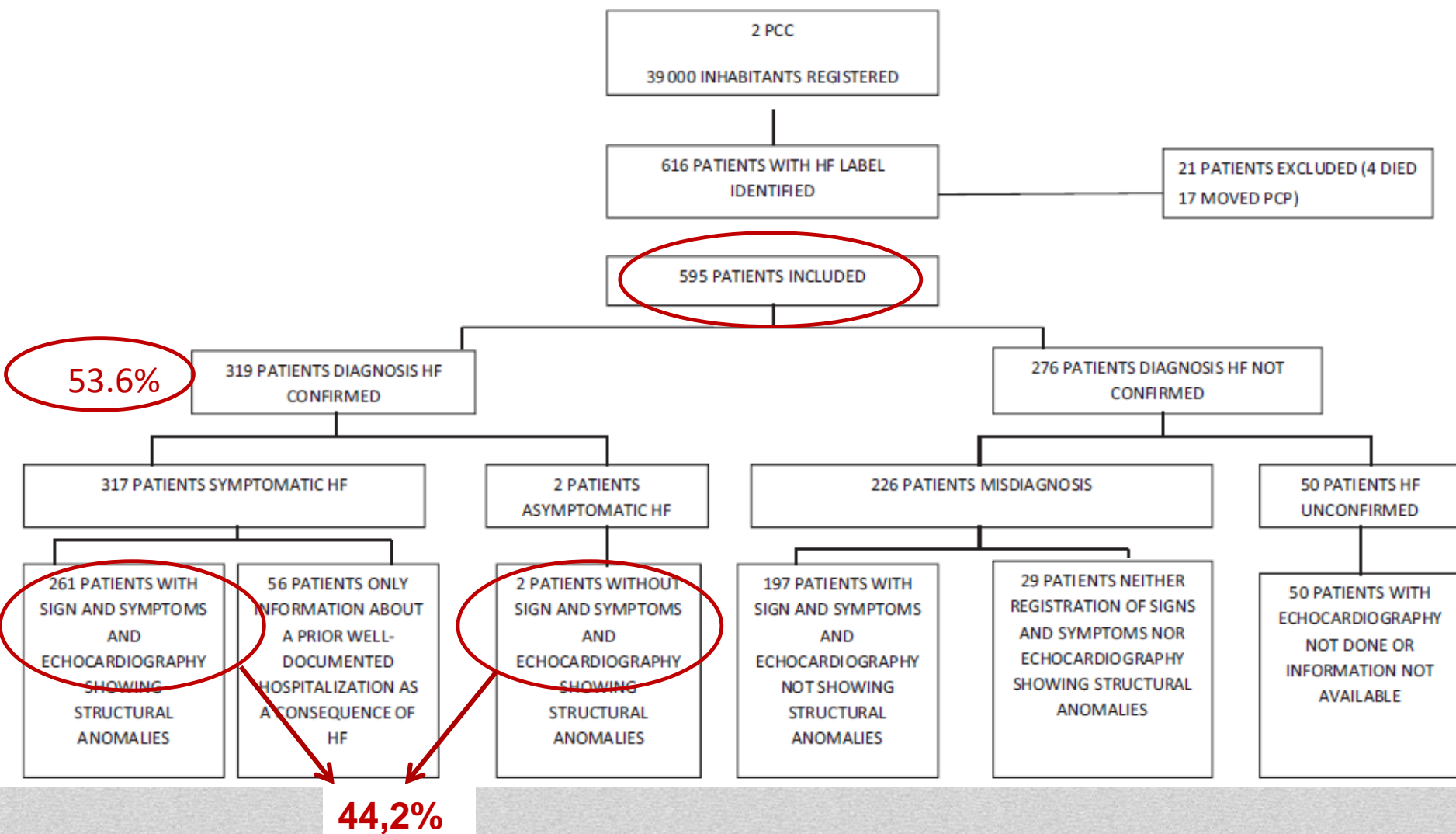
Known and missing left ventricular ejection fraction and survival in patients with heart failure: a MAGGIC meta-analysis report

Poppe KK et al. Eur J Heart Fail. 2013

BMC Family Practice

CrossMark
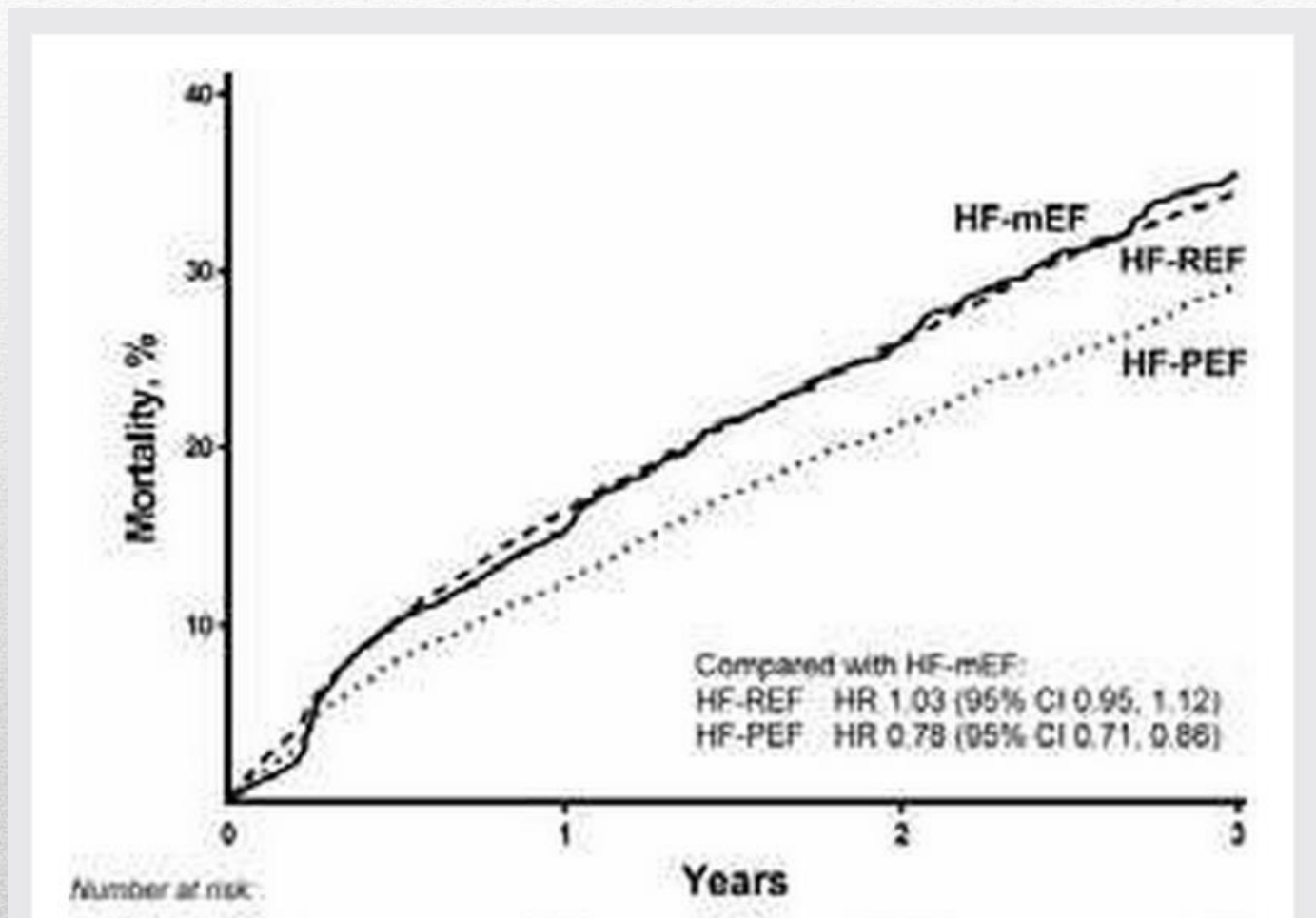
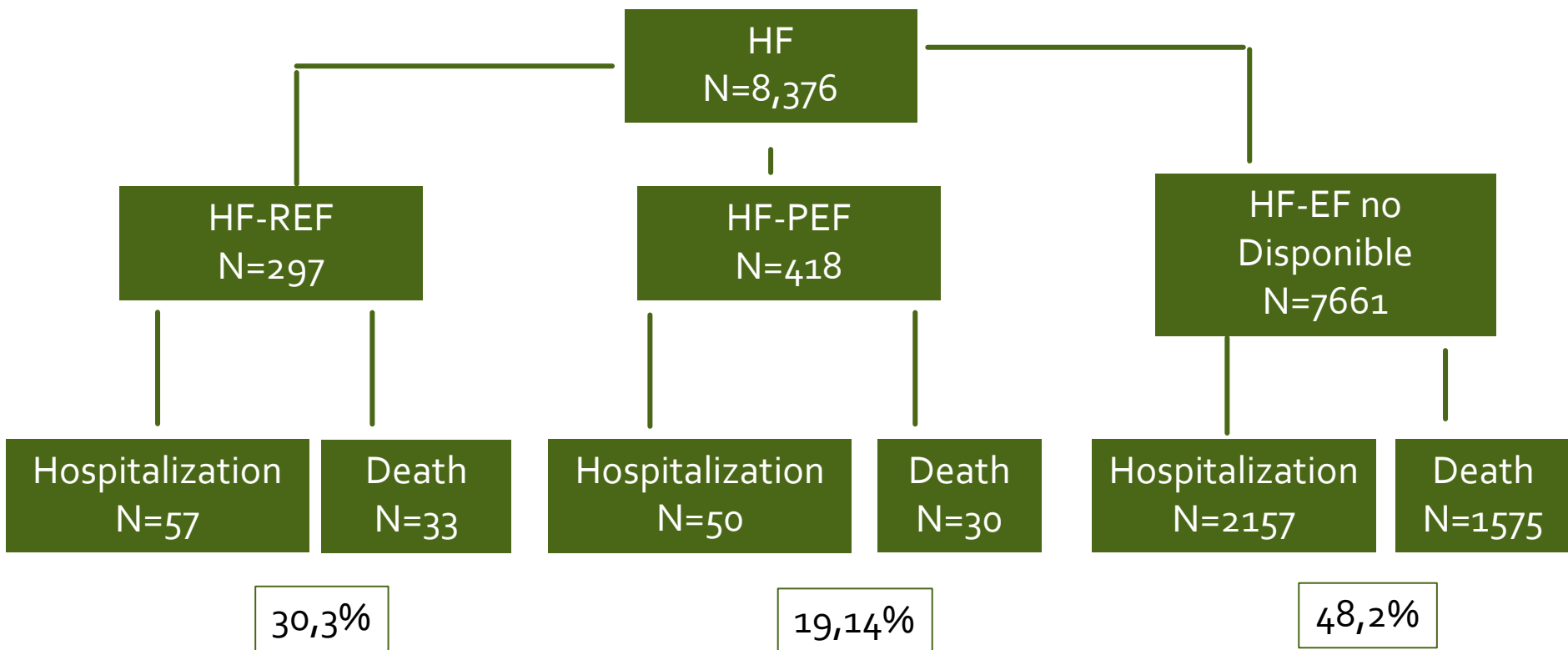# Heart failure labelled patients with missing ejection fraction in primary care: prognosis and determinants

Miguel-Angel Muñoz[1,2,3], Xavier Mundet-Tuduri[1,2,3]*, Jordi Real[2,6], José-Luis Del Val[1,2], Mar Domingo[1,2], Ernest Vinyoles[1,2,5], Ester Calero[1,2], Caterina Checa[2,4], Nuria Soldevila-Bacardit[1,2] and José-María Verdú-Rotellar[1,2,3]

HR for hospitalization or death according to the registration of HF in EMR

	HR	95% Confidence interval
Ejection Fraction (EF)		
HFpEF(>50)	1	
HFrEF (<=50)	1.36	0.99-1.88
Unknown EF	1.84	1.45-2.33
Previous hospitalization HF	**1.81**	1.68-1.95

Factors related to the probability of having an ejection fraction in electronic medical records

	OR[a]	95% Confidence interval
Age (quintiles)		
<=71 (reference)	1	
72 - 78	0.86	0.68-1.08
79 - 82	0.71	0.55-0.92
83 - 86	0.81	0.63-1.05
87+	**0.50**	0.37-0.68
Home care	**0.71**	0.56-0.88

FOLLOW UP

FOLLOW UP SCHEDULE

	MONTHS				
	0	1	3	6	9
	person	phone	P/Phone	phone	person
Clinical exploration					
Weight	X	X	X	X	X
Blood pressure	X	X	X	X	X
Heart Rate	X	X	X	X	X
NYHA Functional class	X	X	X	X	X
Oedemas	X	X	X	X	X
Alarm signs					
Dyspnoea	X	X	X	X	X
Orthopnoea /par.noct.dyspnoea	X	X	X	X	X
Worsening NYHA	X	X	X	X	X
Weigh gain	X	X	X	X	X
Laboratory tests (Hb, Na,K,Creatinin, GFR)					
	X		X		X
Other proves					
Ecocardio	X				
Chest X-ray	X				
ECG	X				
O2 Saturation	X		X		X
Education and prevention					
Adherence (medication,diet)	X	X	X	X	X
Selfcare	X	X	X	X	X
Lifestyles counseilling	X	X	X	X	X
Vaccinations (Influenza, pneumococcical)	X				

Further:
Every 4 months

Self care and educational measures

- Alarm symptoms
- Weigh control
- Salt intake control
- Stop tobacco and alcohol
- Physical activity
- Adherence
- Medication side effects

Patient with symptomatic[a] HFrEF[b]

Class I
Class IIa
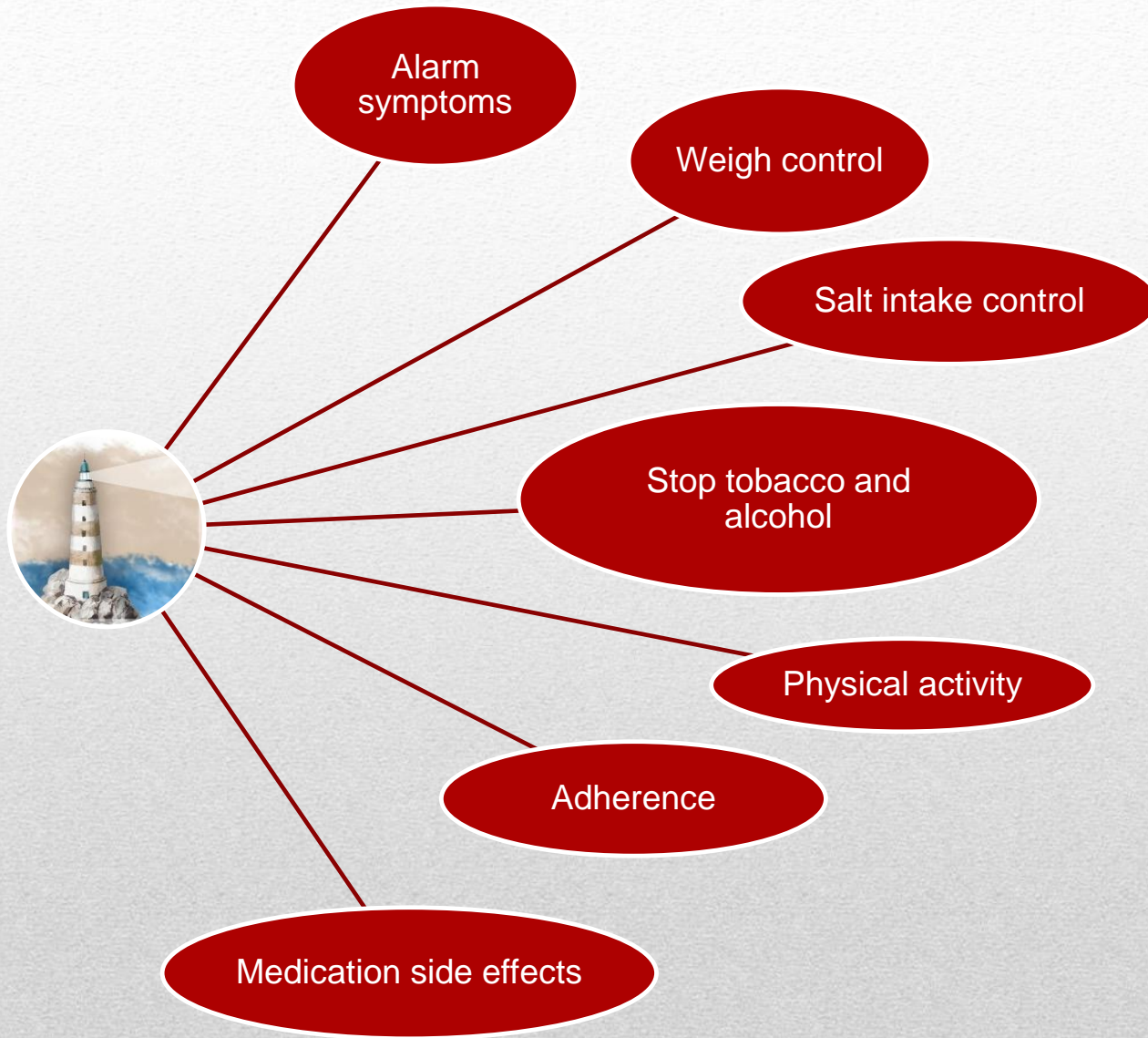
Diuretics to relieve symptoms and signs of congestion

If LVEF ≤35% despite OMT or a history of symptomatic VT/VF, implant ICD

Therapy with ACE-I[c] and beta-blocker
(Up-titrate to maximum tolerated evidence-based doses)

Still symptomatic and LVEF ≤35% — No

Yes

Add MR antagonist[d,e]
(up-titrate to maximum tolerated evidence-based dose)

Yes

Still symptomatic and LVEF ≤35% — No

Yes

Able to tolerate ACEI (or ARB)[f,g]	Sinus rhythm, QRS duration ≥130 msec	Sinus rhythm,[h] HR ≥70 bpm
ARNI to replace ACE-I	Evaluate need for CRT[i,j]	Ivabradine

These above treatments may be combined if indicated

Resistant symptoms

Yes

Consider digoxin or H-ISDN or LVAD, or heart transplantation

No

No further action required Consider reducing diuretic dose

DECOMPENSATIONS

- NYHA worsening

- Weight gain > 1 kg in a period of 24 h or >2 kg in 72 h.

- Increased ankle edema

↓

ASSESS SEVERITY AND TRIGGERS
Symptoms:

Chest pain , resting dyspnaea, orthopnoea, paroxysmal nocturnal dyspnoea, syncope

Sígns :

HR >130 /min or <40/min ; Systolic BP >200 or <80 mmHg; O2 saturation < 90%.

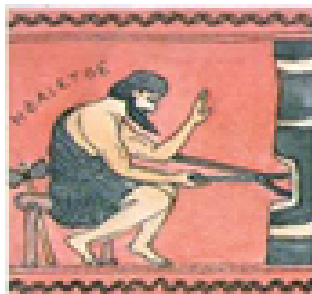NO ↓   YES ↓

Increase oral diuretic
Endovenous furosemide :
⟶

20mg/20' until 60 mg + HCLTZ oral

HOSPITAL

Hefestos Study
(Heart Failure Outpatients Study)

Dr. José Mª Verdú-Rotellar M.D. Ph. D
Hefestostudy@gmail.com

Objectives

- To develop and validate a **predictive model** based on clinical variables easy to be measured in general practice **to predict short-term hospitalization or mortality in primary care** as a consequence of a Heart Failure (HF) **decompensation.**

- Identify the most **common precipitants of decompensation** of HF patients in the primary care setting.
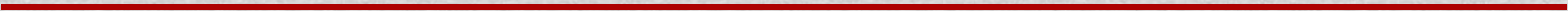
9 European countries

My limitations:

  Health System : BNP, Ecocardio

  My own skills = When to refer my

  patients to cardiologist?

Initial diagnoses before 60 years old or diagnoses doubts	Implantable cardioverter defibrillator: *(FEVI < 35%) (ischaemic origin or dilated cardiomyopathy)*
Ischaemic or valvular etiology	
Symptoms worsening in spite of optimal treatment	Resincronization: ▪(FEVI < 35%) + (QRS > 0,150) +LBBB
Renal function worsening	
Patients in NYHA class III-IV	Cardiac transplantation ▪*End-stage HF with severe symptoms* ▪*No remaining options* ▪*< 65 years old*
More than 3 hospital admissions or 12 emergency room stages in previous year	
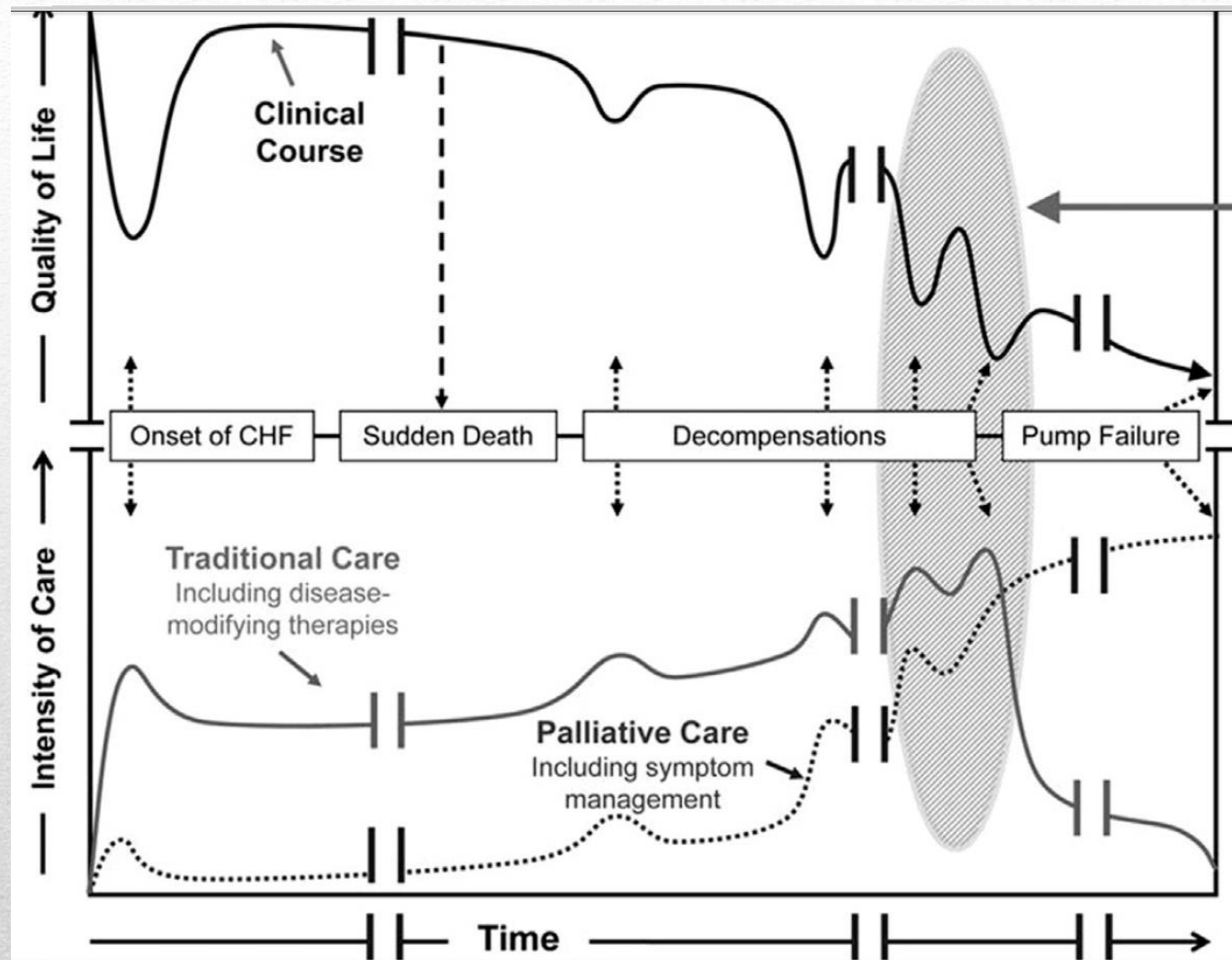
End of Life

Source: Allen LA et al. Circulation 2012.125 (5): 125(15):1928-52

40

PCC-MACA

Patients with heart failure in whom end of life care should be considered

Progressive functional decline (physical and mental) and dependence in most activities of daily living.
Severe heart failure symptoms with poor quality of life despite optimal pharmacological and non-pharmacological therapies.
Frequent admissions to hospital or other serious episodes of decompensation despite optimal treatment.
Heart transplantation and mechanical circulatory support ruled out.
Cardiac cachexia.
Clinically judged to be close to end of life.

Key components of palliative care service in patients with heart failure

Focus on improving or maintaining the quality of life of a patient and his/her family as well as possible until he/she dies.
Frequent assessment of symptoms (including dyspnoea and pain) resulting from advanced heart failure and other co-morbidities and focus on symptom relief.
Access for the patient and his/her family to psychological support and spiritual care according to need.
Advanced care planning, taking account of preferences for place of death and resuscitation (which may include deactivating devices, such as pacemaker and/or implantable cardioverter defibrillator).

43

HADES study

Objective:
To determine variables which most likely predict death at one year in patients in advanced stages of heart failure (NYHA IV)
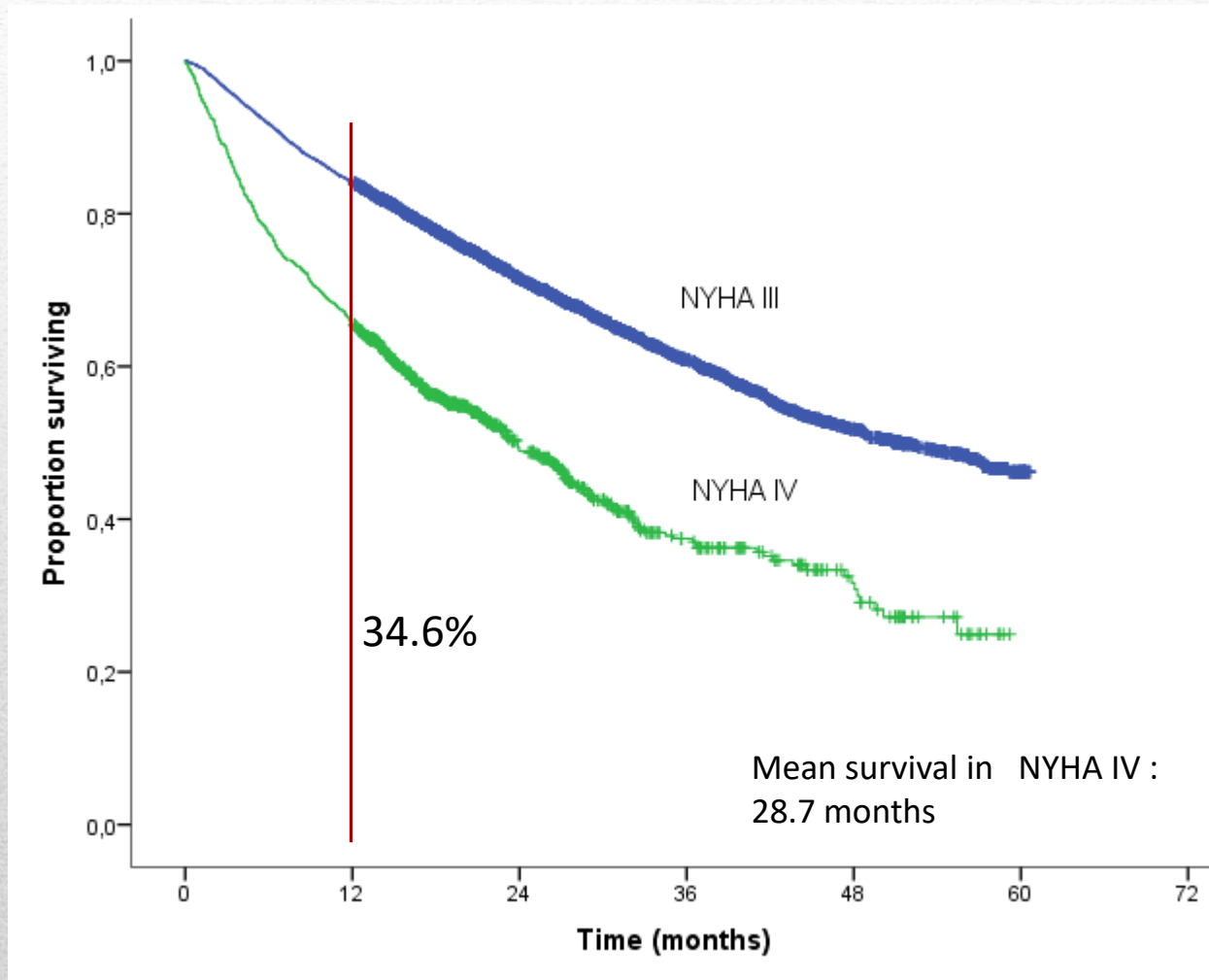
Design: retrospective cohort study
Period: 1st Jan 2010 to 31st Dec 2014

Data source :
primary care electronic medical records (SIDIAP)

Mortality in NYHA IV patients attended in primary care: HADES study (Heart failure in ADvancEd Stages)

Mortality in heart failure patients after reaching NYHA IV

	Six months N=259			One year N=397		
	N	HR	95% CI		N	HR	95% CI	
Men	1148	1,60	**1,17**	**2,20**	1148	**1,77**	**1,33**	**2,34**
Age (years)	1148	1,05	**1,03**	**1,07**	1148	**1,05**	**1,03**	**1,07**
Barthel Index <20	734	1,62	0,95	2,74	734	1,35	0,84	2,19
Cancer	1148	1,50	1,06	2,15	1148	1,60	1,15	2,23
SBP <=90 mm/Hg	1070	2,80	**1,33**	**5,88**	1070	**2,49**	**1,19**	**5,20**
BMI <=20 kg/m²	855	4,42	**2,08**	**9,38**	855	**3,68**	**1,76**	**7,69**
Chalson>=6	816	1,73	1,07	2,81	1148	1,37	0,93	2,01
Glomerular filtration <30	783	0,94	0,85	1,04	816	**1,86**	**1,21**	**2,87**
Haemoglobin	1148	1,60	1,17	2,20	783	0,93	0,85	1,01

Unanswered questions

- Active case finding, when and in which patients?

- What is the best cut off for Natriuretic Peptides (NT pro BNP) to rule out HF (Nice guidelines 400 pg/mL, ESC 125 pg/mL, own research 280 pg/mL)

- What is the prognoses and evolution of HFmEF ?

- What is the better treatment for HEpEF patients?

- Role and management of comorbidities.

- How can patients in the end stages be better identified and managed ?

Adapted from Rutten et al. Practical Guidance on Heart Failure Diagnosis and Management in Primary Care. EPCCS.

Take home messages

GP must know the best options for treating their patients according to their structural limitations.

GP should be committed to continuosly learn and be up dated

GP have to be aware that each patient is, in many ways different to the other ones and may have different needs and wishes.

GP must do research to generate evidences coming from our own setting