

Acute heart failure syndromes

Pre-discharge management plan

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Treatment of Acute Heart Failure

Improvement of symptoms
Clinical stabilization

+

Avoidance / limitation of
myocardial damage

Emergency treatment

In-hospital stabilisation

Phases in the
AHF management

Treatment of Acute Heart Failure

Improvement of symptoms
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Avoidance / limitation of
myocardial damage



Favourable effects on
long-term prognosis

- Prevent early readmission
- Improve long-term medical regimen, symptoms, and survival

Emergency treatment

In-hospital stabilisation

Discharge planning

Long-term management

Phases in the
AHF management

Elements of pre-discharge planning in AHF

I. Search for potentially reversible exacerbating factors

- underlying ischaemia
- arrhythmias (AF)
- uncontrolled HTN
- thyroid dysfunction, anaemia
- non-compliance to therapy
- valvular HD

II. Risk evaluation

- clinical presentation
- LV Function
- functional capacity
- central hemodynamics
- neurohumoral activation
- end-organ damage & comorbidities

III. Optimal post-discharge management

- pharmacology
 - surgery
 - devices
- HF outpatient programme

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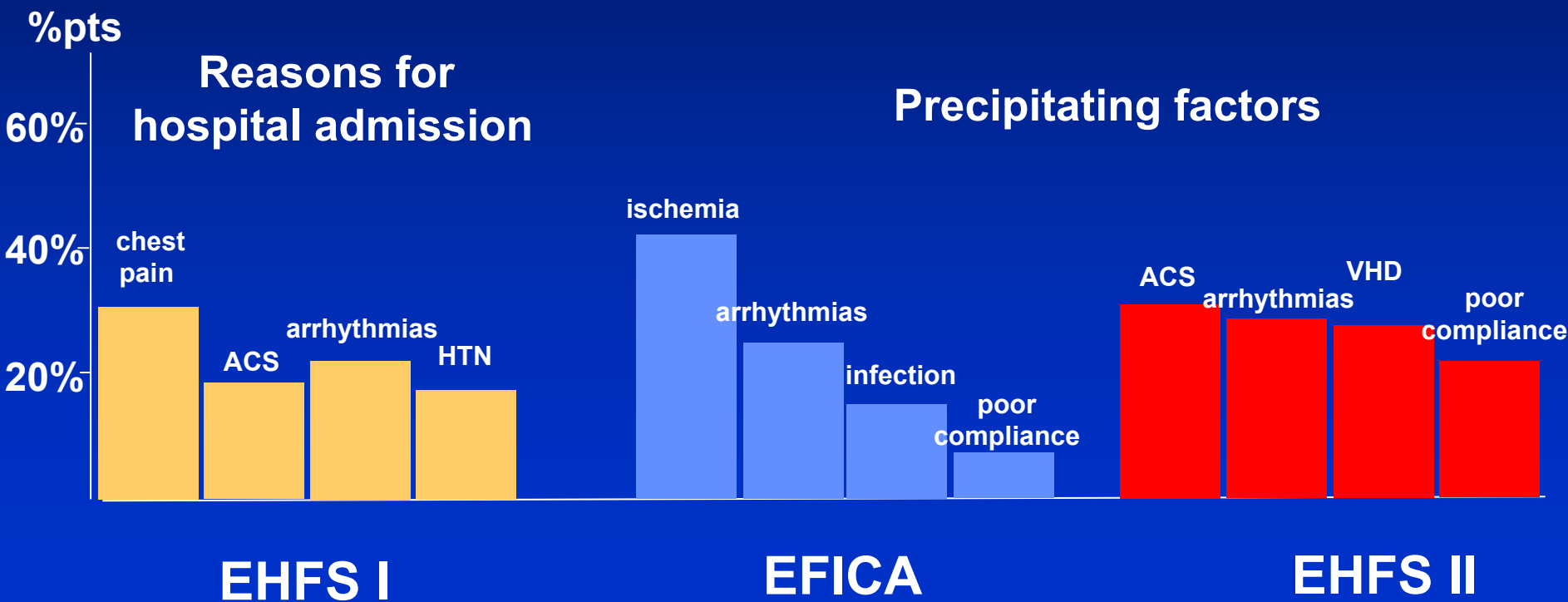
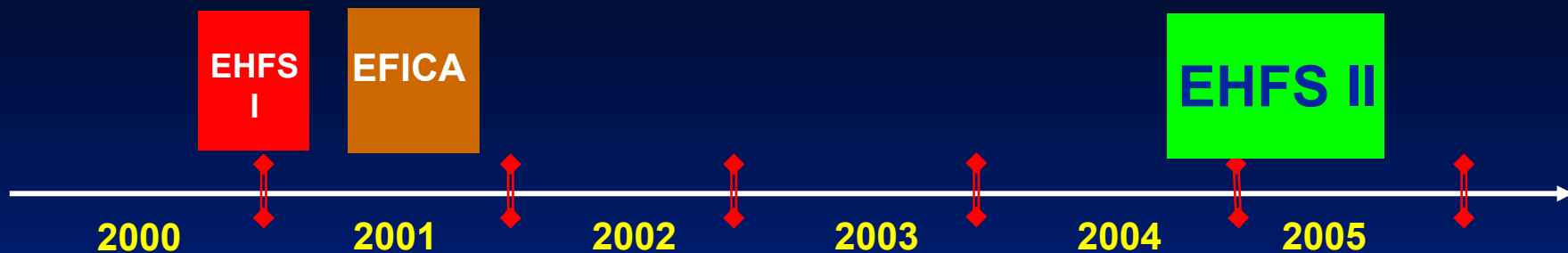
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Acute Heart Failure: European perspective



Cleland et al., EHJ 2002

Zannad et al., EJHF 2006

Nieminen et al., 2006

Pre-discharge plan: revascularisation – how often considered and whom ?

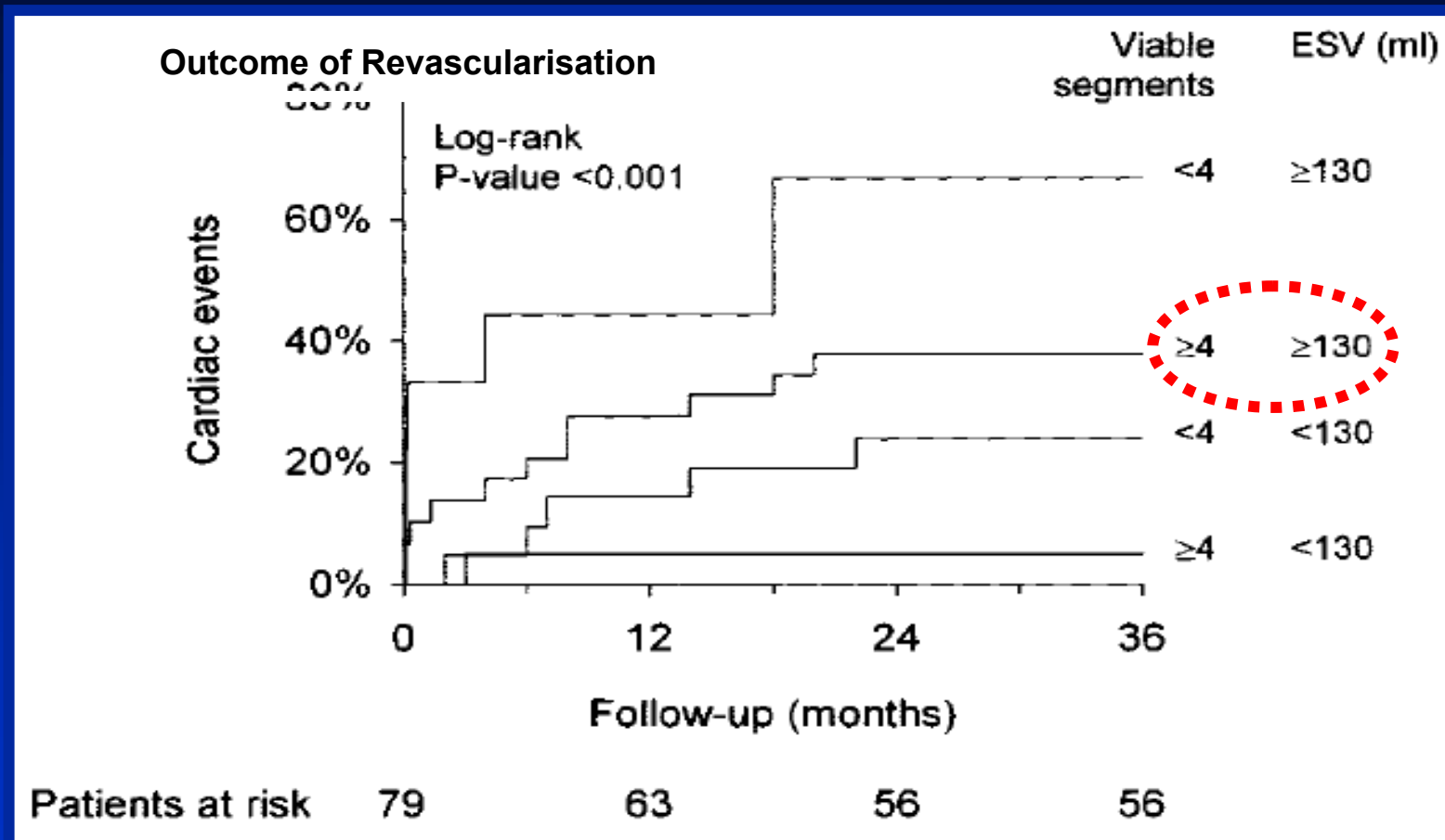
EHFS I (index hospitalisation / within last 3 years)

- Coronary Angiography 16 % / 32%
- Angioplasty 4% / 9%
- CABG 3% / 11%
- Myocardial Viability Assessment 2% / 6%

EHFS II (index hospitalisation)

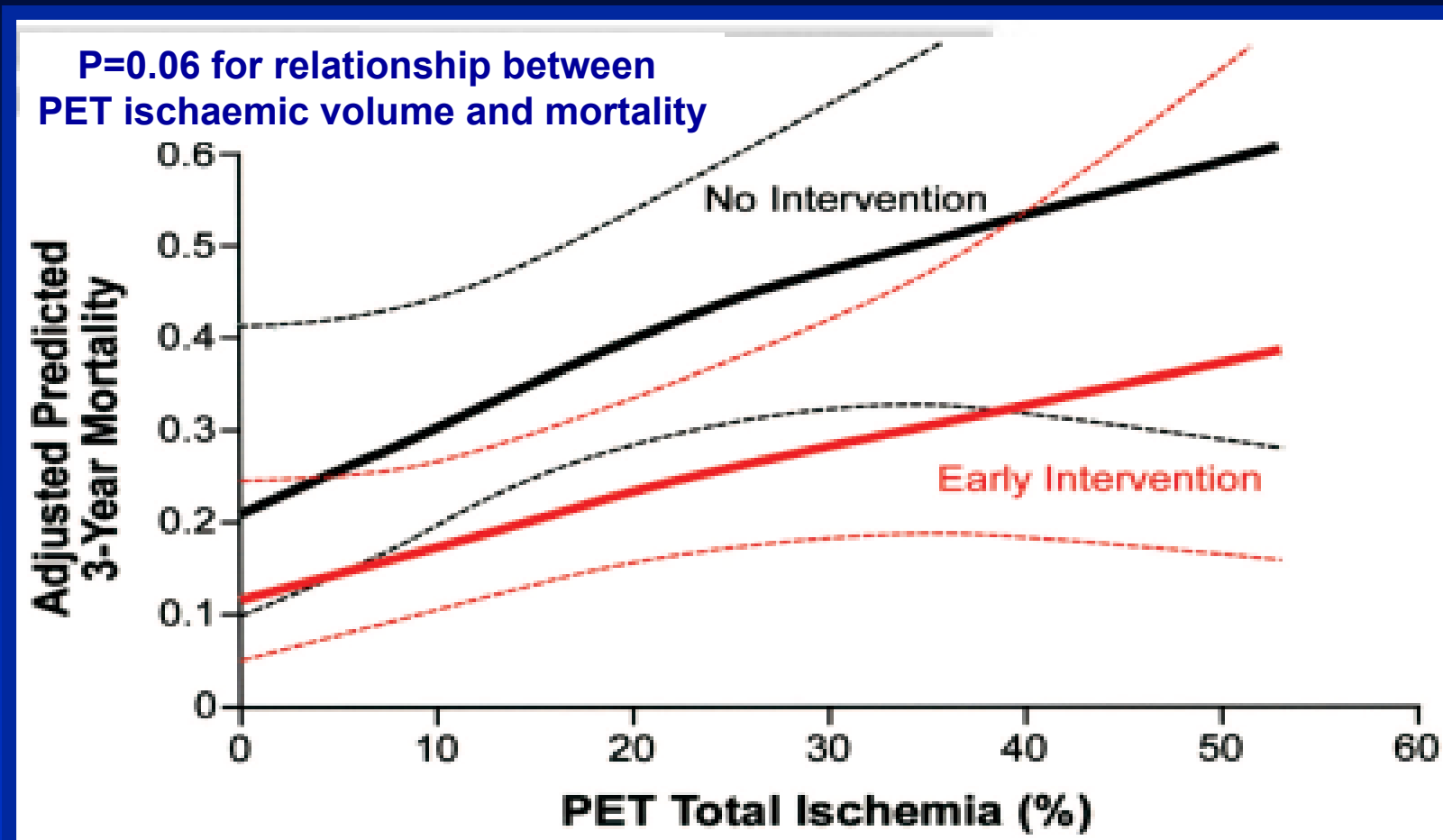
- Coronary Angiography 36.5 %
 - in pts with cardiogenic shock 66.7%
- Angioplasty 12.8%
 - performed / planned 66% / 34%
- CABG 6.4%
 - performed / planned 29% / 71%

Pre-discharge plan: revascularisation – how often considered and whom ?



Extensive LV remodeling prohibits improvement in LVEF and negatively affects prognosis despite presence of viability

Pre-discharge plan: revascularisation – how often considered and whom ?

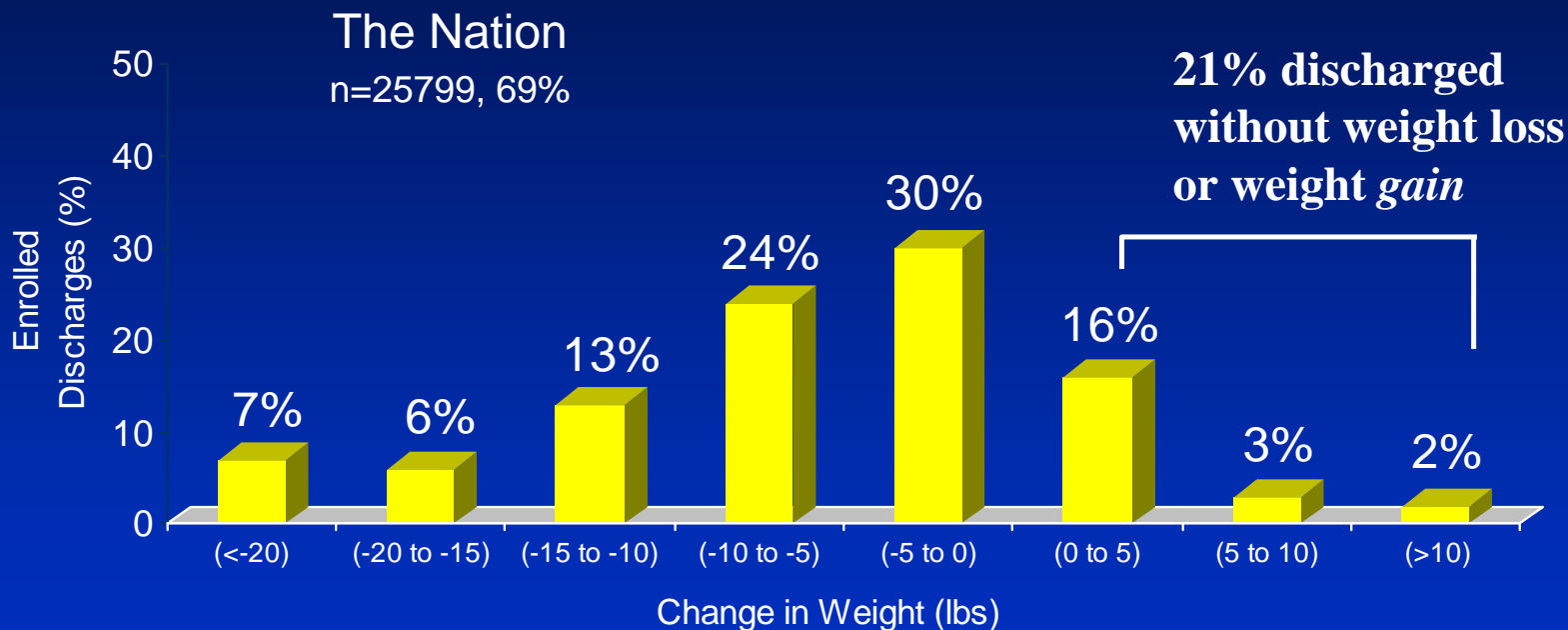


Early intervention (< 6 months from PET study; mainly CABG) may be associated with better survival irrespective of the degree of viability

Prognostic variables in AHF

- **Clinical presentation**
- **LV Function**
- **Central hemodynamics**
- **Neurohumoral activation**
- **End-organ damage & comorbidities**
- **Treatment**

Diuretic based clinical strategies are not very effective in reduction of edema: change in weight from admission to discharge



Note: For the chart, n represents the number of patients who have both baseline and discharge weight, and the percentage is calculated based on the total patients in the corresponding population. Patients without baseline or discharge weight are omitted from the histogram calculations.

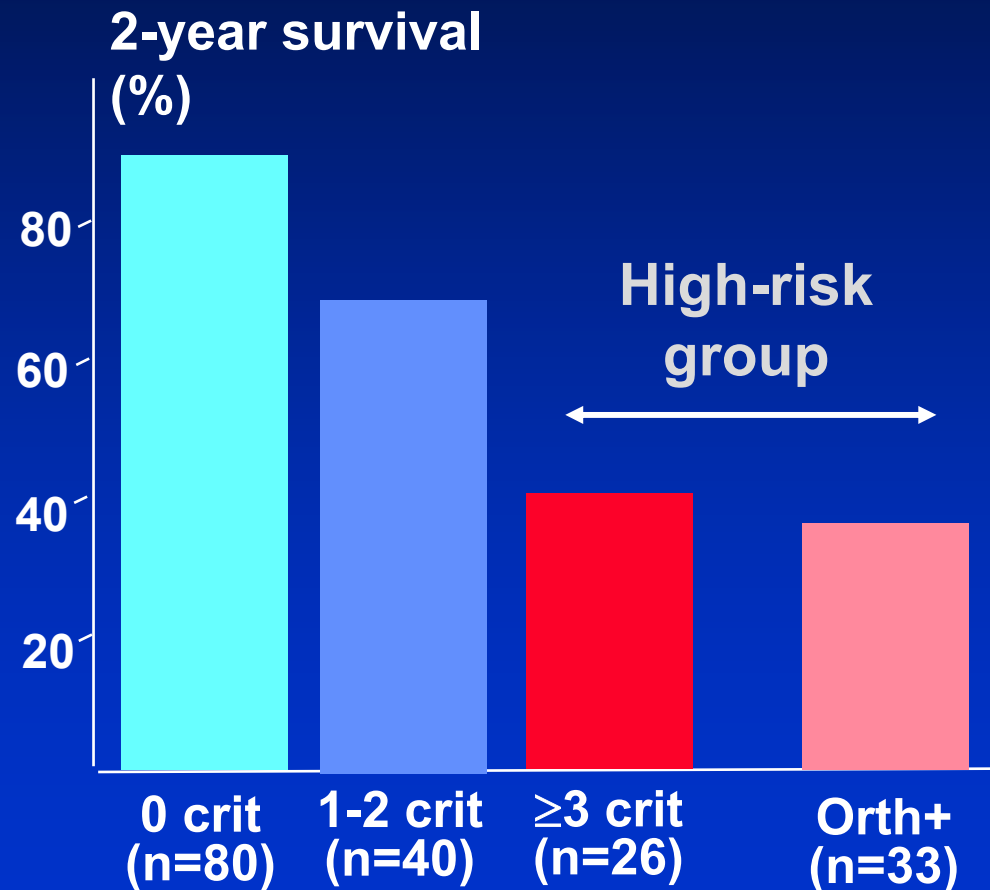
All Enrolled Discharges in the Last 12 Months (04.01.2003-03.31.2004)

Freedom from congestion predicts good survival also in patients with advanced HF

146 pts with NYHA IV
4-6 weeks after discharge
re-evaluated for congestion

Criteria:

1. Orthopnoea
2. ↑ JVP
3. Oedema
4. Weight gain
5. ↑ baseline diuretics

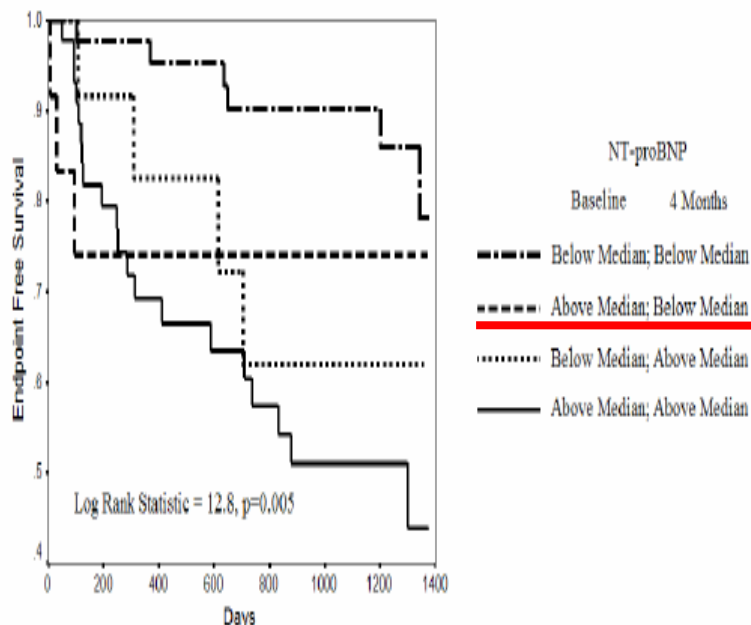


„Never-ending” BNP story

Observational evidence that monitoring with BNP helps

Discharge planning; Risk Stratification (Rx intensification)

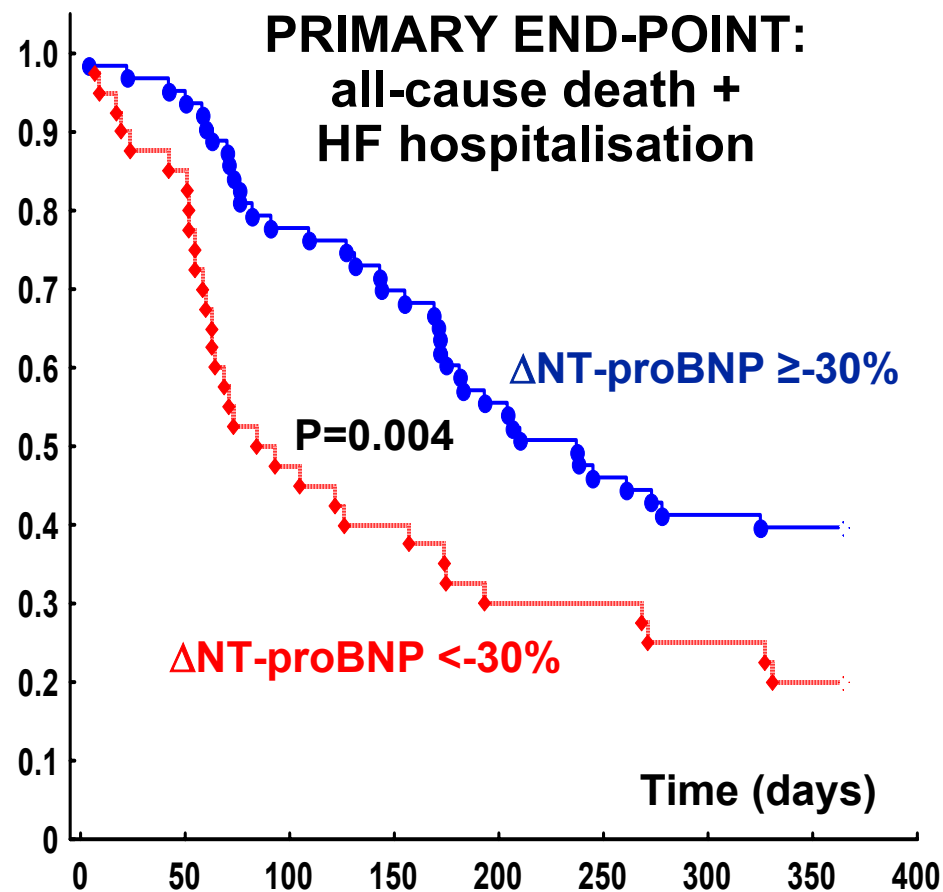
Randomised studies required



Number at risk

---	44	41	39	37	34	31	22	1
.....	12	8	8	7	7	6	4	0
.....	12	10	9	7	6	4	2	0
—	44	33	26	21	18	14	9	0

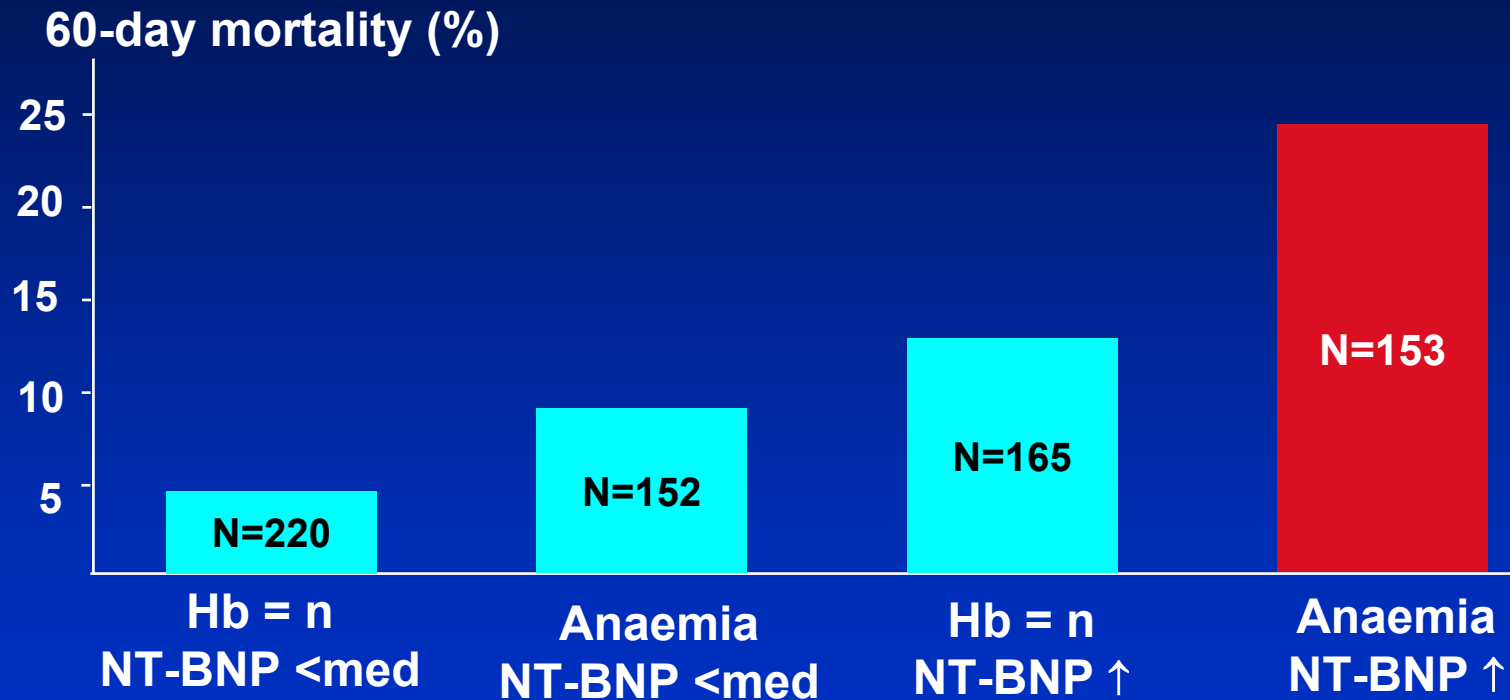
Gardner et al EJHF 2006 (in press)



Kubler et al., ESC 2006

Anaemia and mortality in acute HF

690 patients with acute HF; anaemia (WHO) in 44%



Additive prognostic information (NT-BNP, anaemia), superior to the use of either in isolation

PROSPECTIVE OUTCOME STUDY IN HEART FAILURE (POSH)

N = 299 HF patients – 16 centers

Incidence of WRF : 98 patients (33%, 95% CI 27-38)

Time to development (median) : 4 days from hospitalisation)

Risk factors for WRF	Adjusted OR (95%CI)
Serum creatinine (mg/dL)	2.0 (1.2-3.5) (p=0.01)
Insulin treated DM	2.1 (1.0-4.4) (p=0.05)

Mortality	WRF Absent [%]	WRF Present [%]	Adjusted OR [95% CI]	p value
In hospital	1.5	12	9.8 (2.3- 43.1)	0.002
Up to 30 days	4.6	14.6	5.3 (1.8 – 15.9)	0.003
Up to 180 days	18.1	28	1.8 (0.94 – 3.50)	0.08

Prognostic variables in AHF

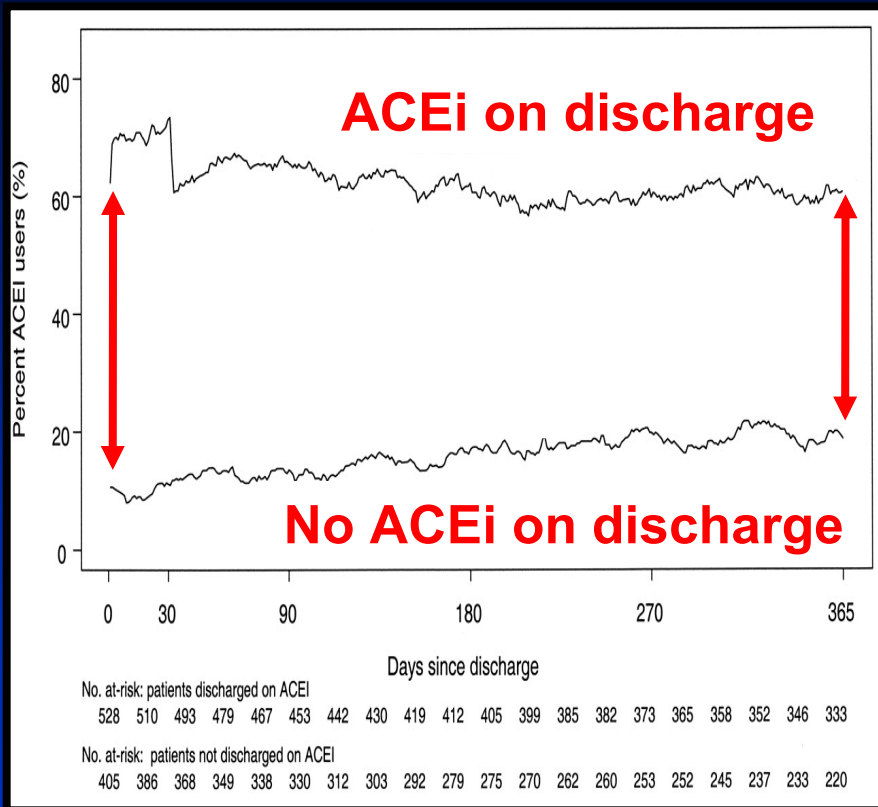
- Clinical presentation
- LV Function

**Prognostic evaluation in AHF –
need for risk scores**

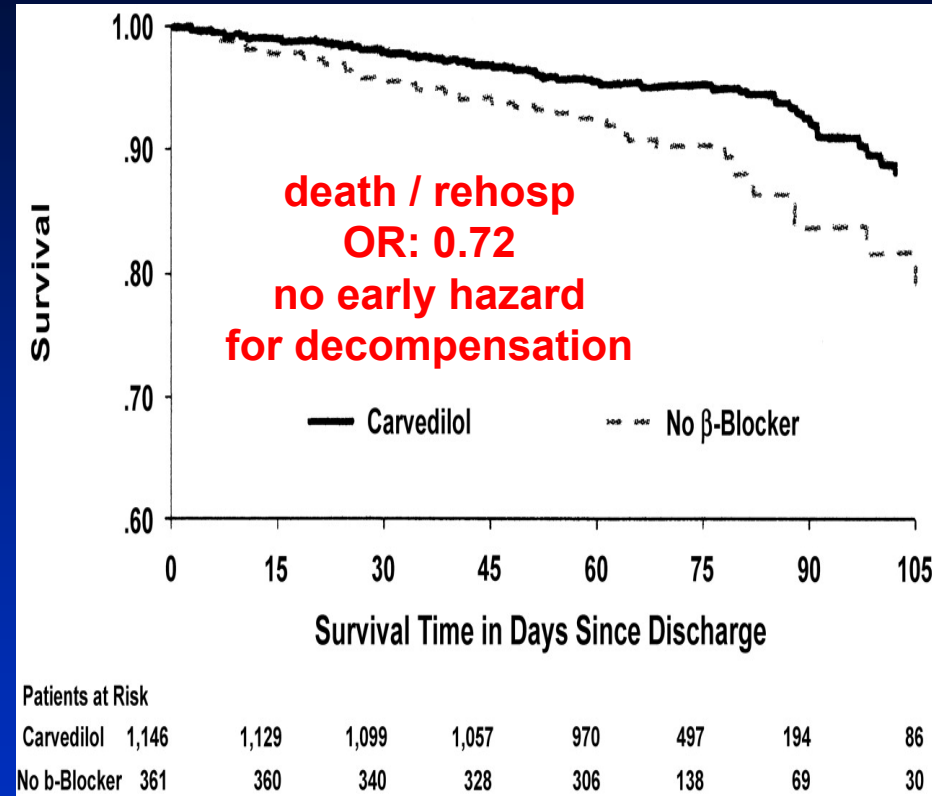
End-organ damage & comorbidities

- Treatment

Pre-discharge plan: optimal pharmacological therapy



Medication prescription at the time of hospital discharge – the strongest predictor of long-term adherence therapy

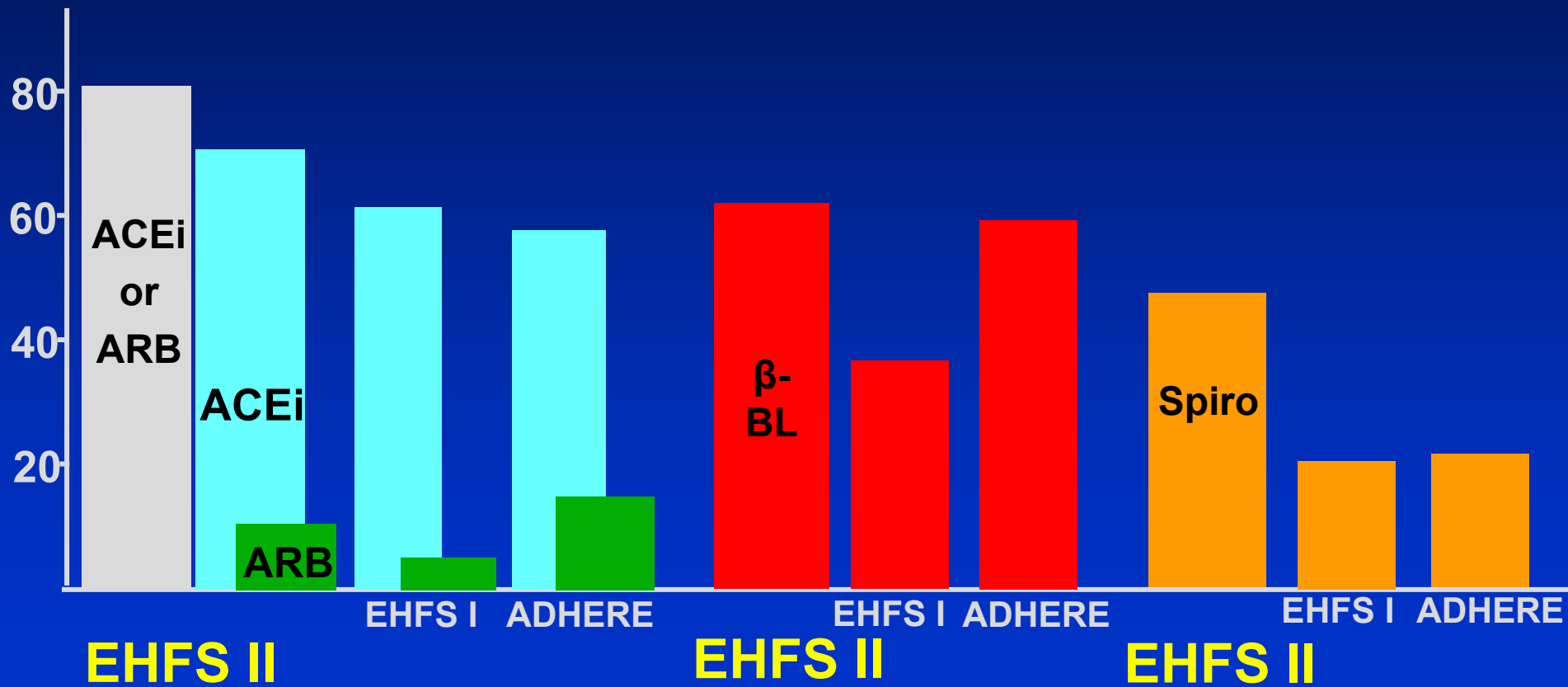


Life-saving therapies can be safely initiated in majority of hospitalised HF patients before discharge

AHF: life-saving therapies on discharge

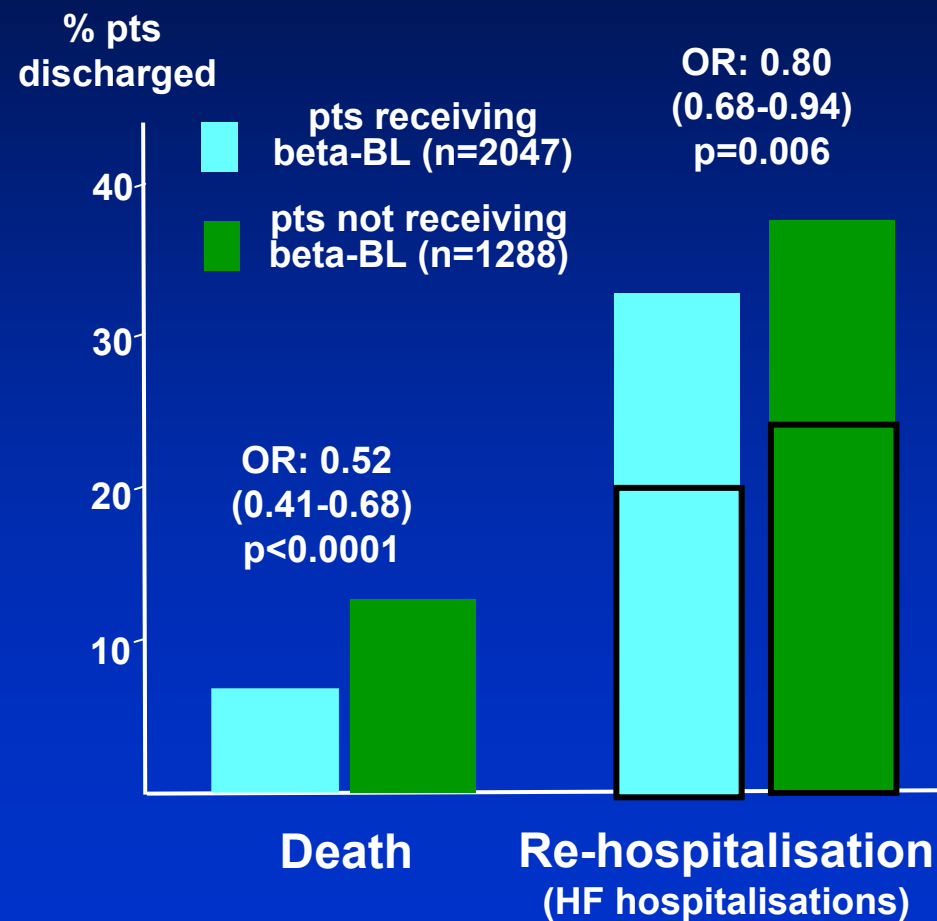
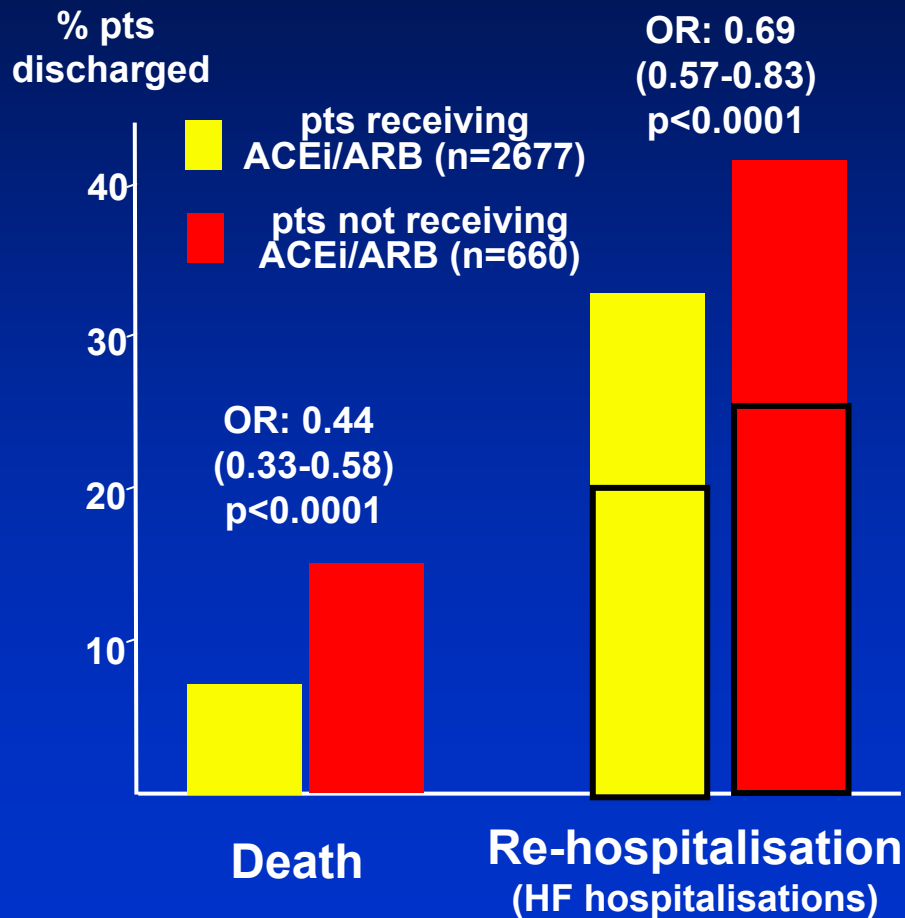
Euro Heart Failure Survey II vs other surveys

% pts on discharge



3-month event-rate among patients receiving vs not-receiving ACEi/ARB on hospital discharge

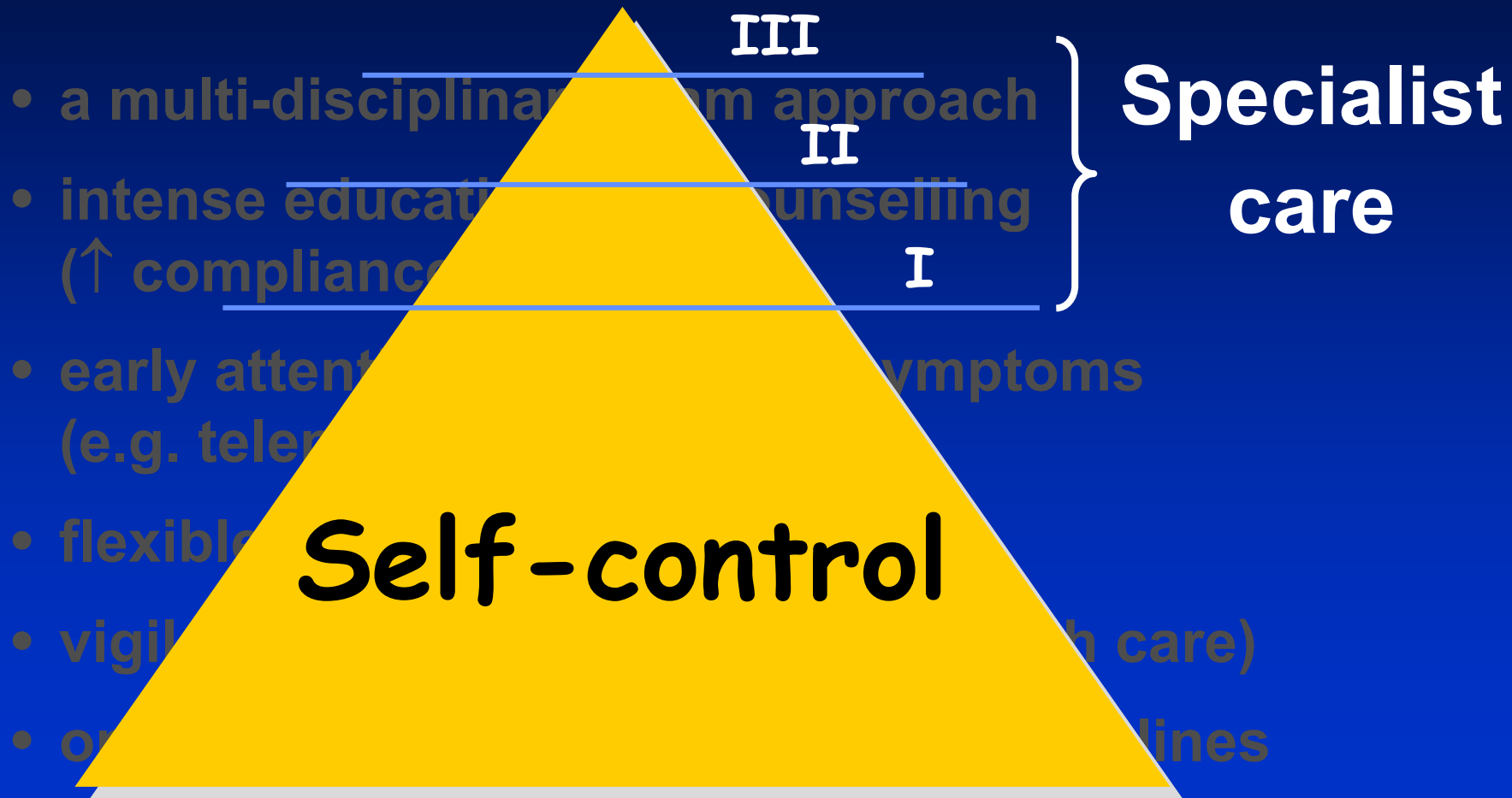
Euro Heart Failure Survey II



Pre-discharge plan: comprehensive HF outpatient management programme

- **a multi-disciplinary team approach**
- **intense education and counselling
(↑ compliance)**
- **early attention to signs and symptoms
(e.g. telemonitoring)**
- **flexible diuretic regimen**
- **vigilant follow-up (↑ access to health care)**
- **optimizing medical therapy with guidelines**

Pre-discharge plan: comprehensive HF outpatient management programme



AHF: pre-discharge management plan

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Better long-term outcome

- less re-admissions
- less symptoms and better quality of life
- improved survival