



# ESPEN Congress Glasgow 2002

## Cardio-Respiratory Failure

### Wasting – Types and Causes

*Stefan Anker*

**Cachexia in Heart Failure:**  
*just a prognostic factor or also a  
therapeutic target ?*

**Stefan D Anker, MD PhD**

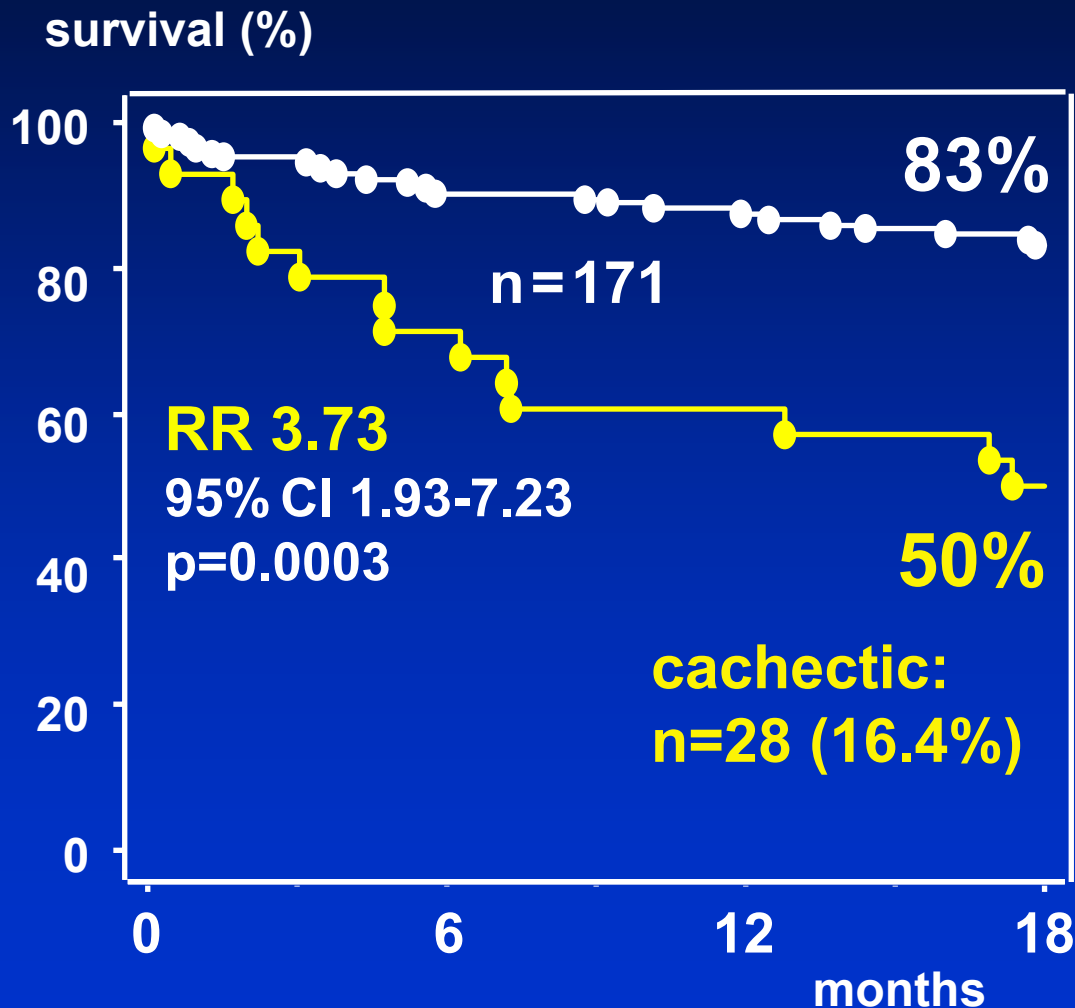
**Clinical Cardiology, NHLI, London, UK**

**Franz-Volhard-Klinik (Charité) at MDC Berlin, Germany**

**Weight loss - survival - catabolic states**

# Cardiac cachexia and survival

weight loss  $\geq 7.5\%$



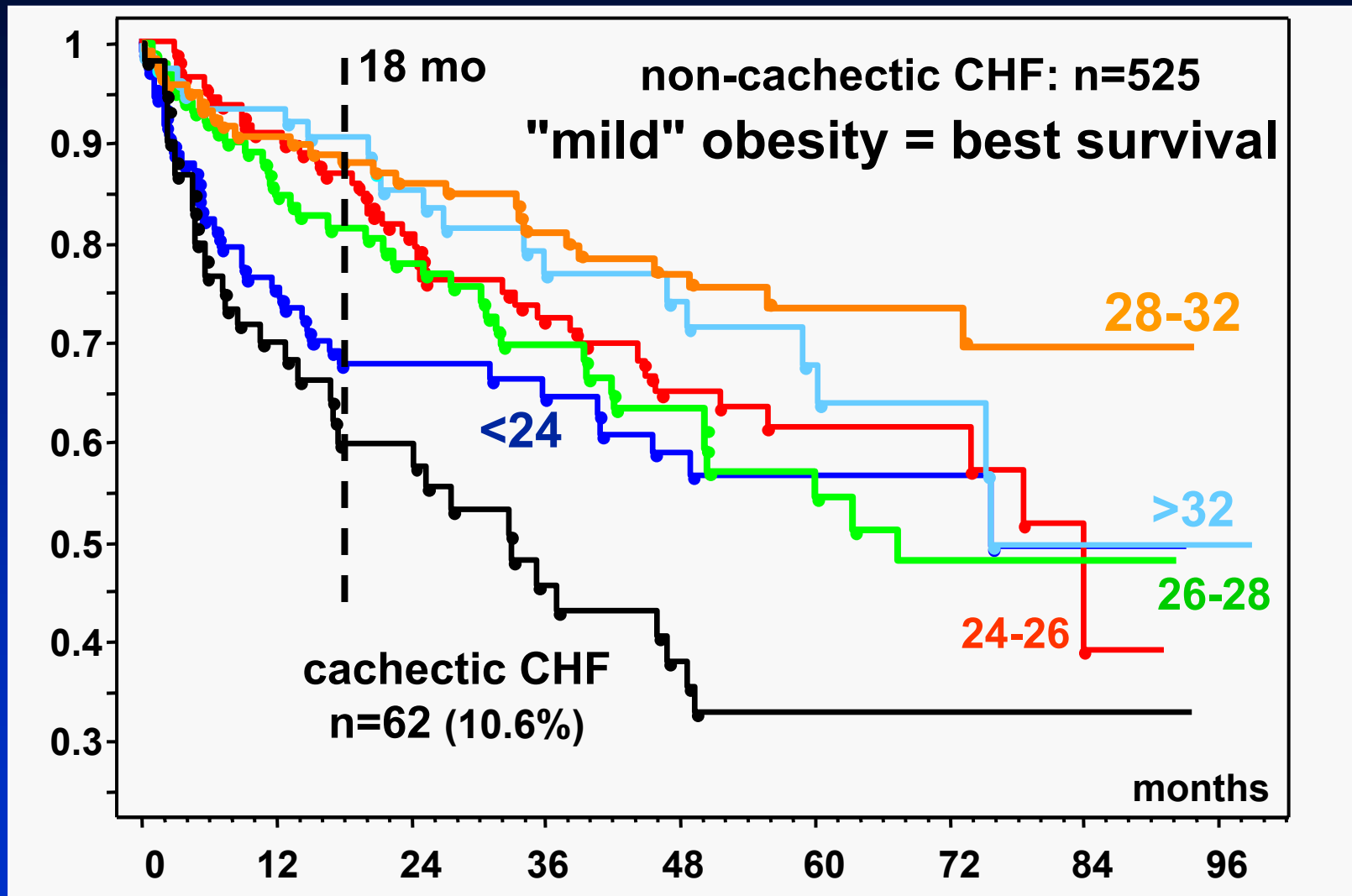
## Cardiac Cachexia

prognostic value  
independently of:

- Peak  $VO_2$
- LVEF
- NYHA class
- Na
- Age

Anker et al.,  
Lancet 1997

# CHF without cachexia: survival by BMI



# Survival in ELITE 2 - n=3127

multivariate Cox-proportional hazard

	RR (95%CI)	$\chi^2$	p
<b>NYHA class</b>	<b>1.914</b> (1.655-2.213)	<b>76.9</b>	<b>&lt;.0001</b>
<b>BMI (kg/m<sup>2</sup>)</b>	<b>0.946</b> (0.926-0.967)	<b>24.9</b>	<b>&lt;.0001</b>
<b>UA (100 <math>\mu</math>mol/L)</b>	<b>1.167</b> (1.098-1.237)	<b>22.1</b>	<b>&lt;.0001</b>
<b>Age (y)</b>	<b>1.023</b> (1.010-1.036)	<b>11.8</b>	<b>=.0006</b>
<b>LVEF (%)</b>	<b>0.989</b> (0.977-1.001)	<b>3.00</b>	<b>=.08</b>
<b>Sex (f vs m)</b>	<b>0.850</b> (0.696-1.038)	<b>2.54</b>	<b>=.11</b>
<b>Therapy (L vs C)</b>	<b>1.069</b> (0.897-1.274)	<b>0.55</b>	<b>=.46</b>

# CC: Preventable? Treatable?

*Catabolic / Anabolic Imbalance*

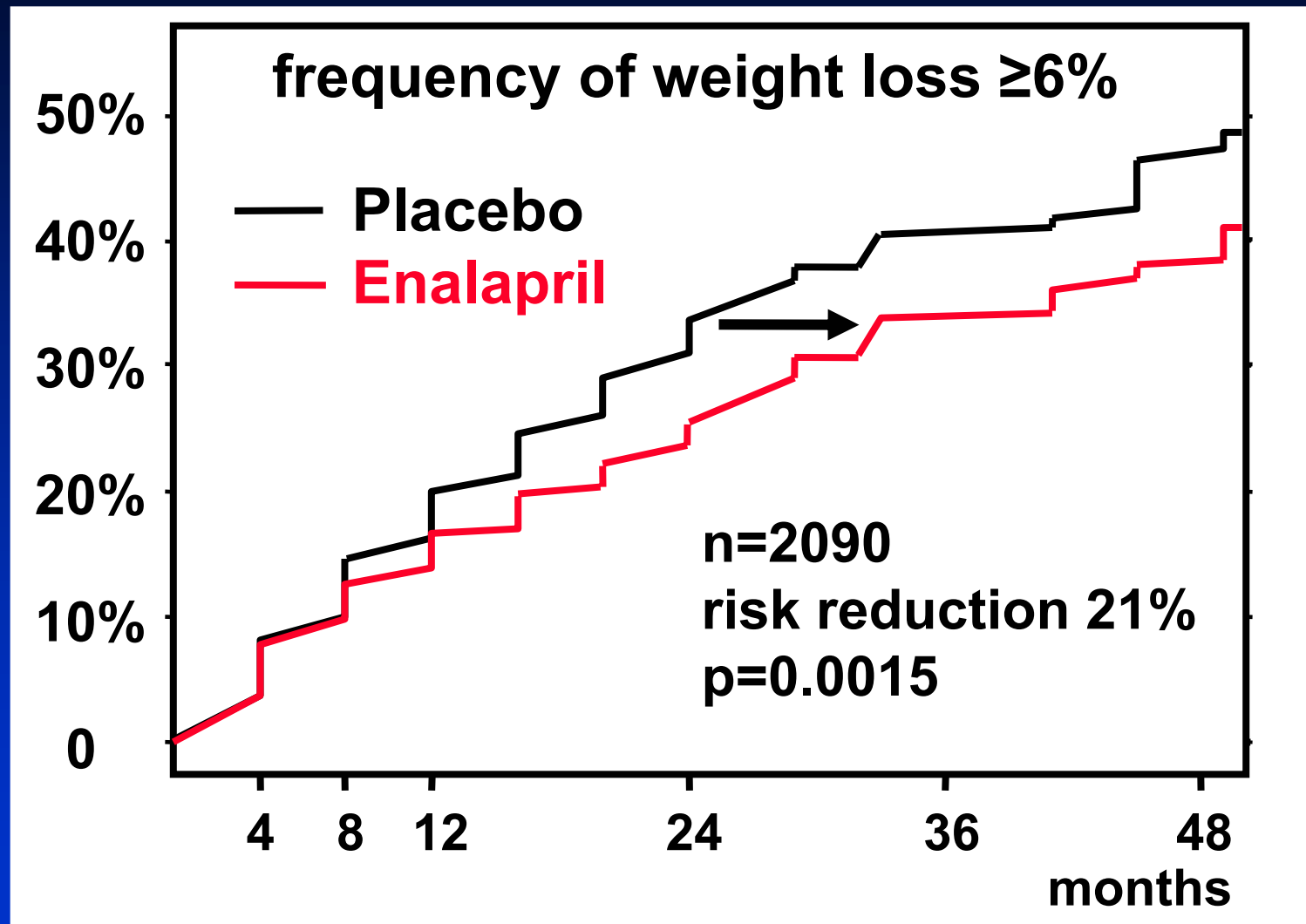


**Neuroendocrine Activation**

**Loss of Anabolic Drive**

**Immune Activation / Inflammation**

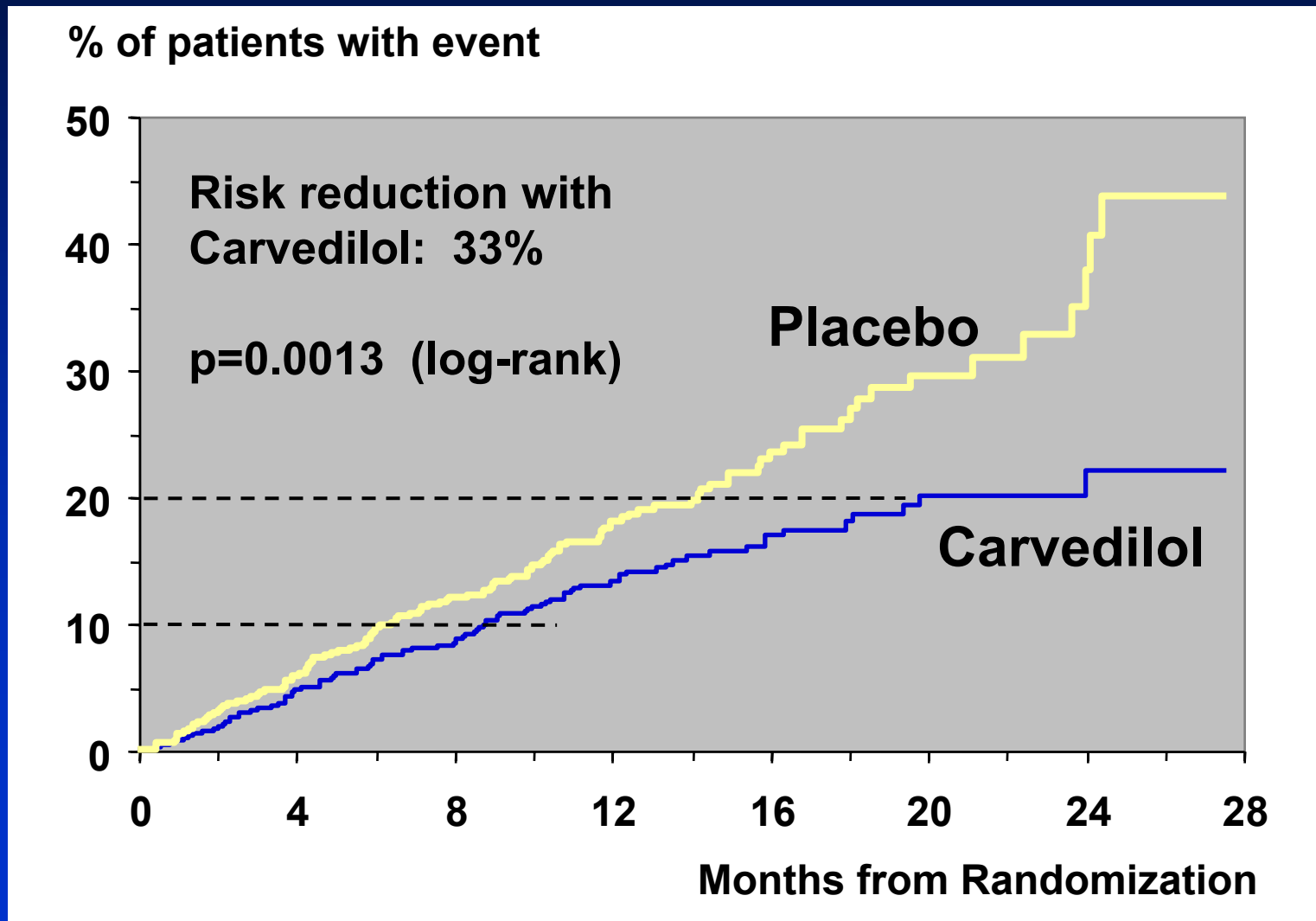
# Cachexia prevention with an ACE-inhibitor



data from SOLVD treatment trial

# Prevention of weight loss $\geq 6\%$ by carvedilol

## *Kaplan-Meier plot of time to weight loss*



# Etanercept in CHF: trial history

---

- **pilot 1:** 12 Et vs 6 PI (III / IV), 1 dose, safety
- **phase II:** 31 Et (2 doses) vs 16 PI (III / IV), 3 mo
- **pilot 2:** 13 Et vs 5 none (III ), 1 dose, endoth fct.
- **doses:** 5 and 12 mg / m<sup>2</sup> twice weekly  
(*body surface in CHF: 1.4 – 2.6 m<sup>2</sup>*)

Deswal et al, Circ 1999

Bozkurt et al, Circ 2001

Fichtlscherer et al, Circ 2001

## ***BUT in RENAISSANCE / RECOVER***

- 25% in NYHA II (not tested before)
- highest dose (3 x 25mg / week) never used before

# The Fatter the better !!

(in CHF / in chronic illnesses)

---

- **Fat = energy**
- **Obesity = absence of catabolism**
- **Food taste and smell ~ fat content**
- **Obesity = (anabolic) exercise**