

# Long-term Fate of Patients with Congenital Heart Disease Undergoing Cardiac Resynchronization Therapy

J. Janoušek<sup>1</sup>, P. Kubuš<sup>1</sup>, R.A. Gebauer<sup>2</sup>, S. Krupičková<sup>1</sup>

(1) Kardiocentrum and Cardiovascular Research Centre, Univ. Hosp. Motol, Prague, Czech Republic, (2) Department of Pediatric Cardiology, University of Leipzig, Heart Center, Leipzig, Germany

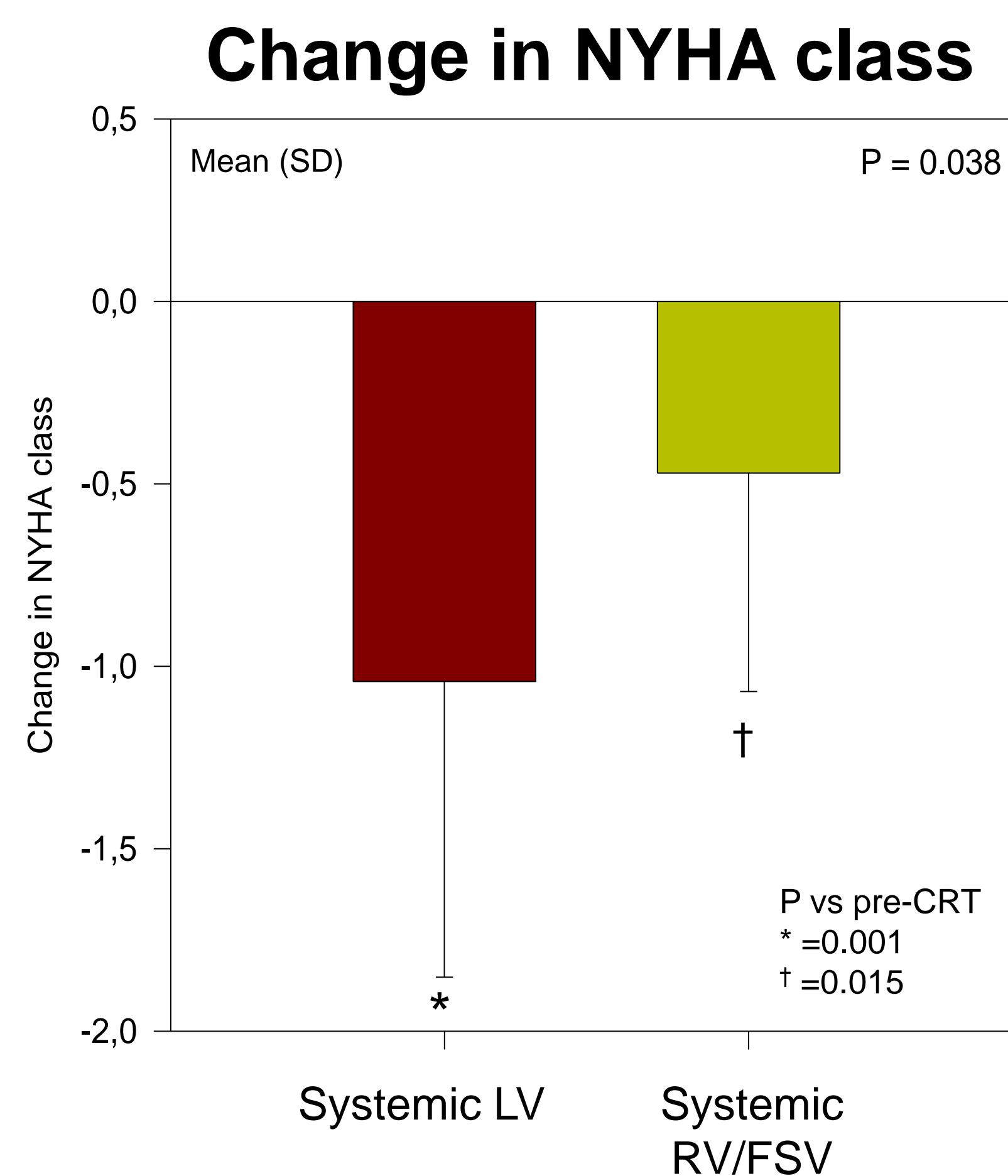
## Introduction:

CRT is rarely used in pts with congenital heart disease (CHD) and follow-up in available studies is too short. We sought to evaluate long-term impact of CRT in pts with CHD.

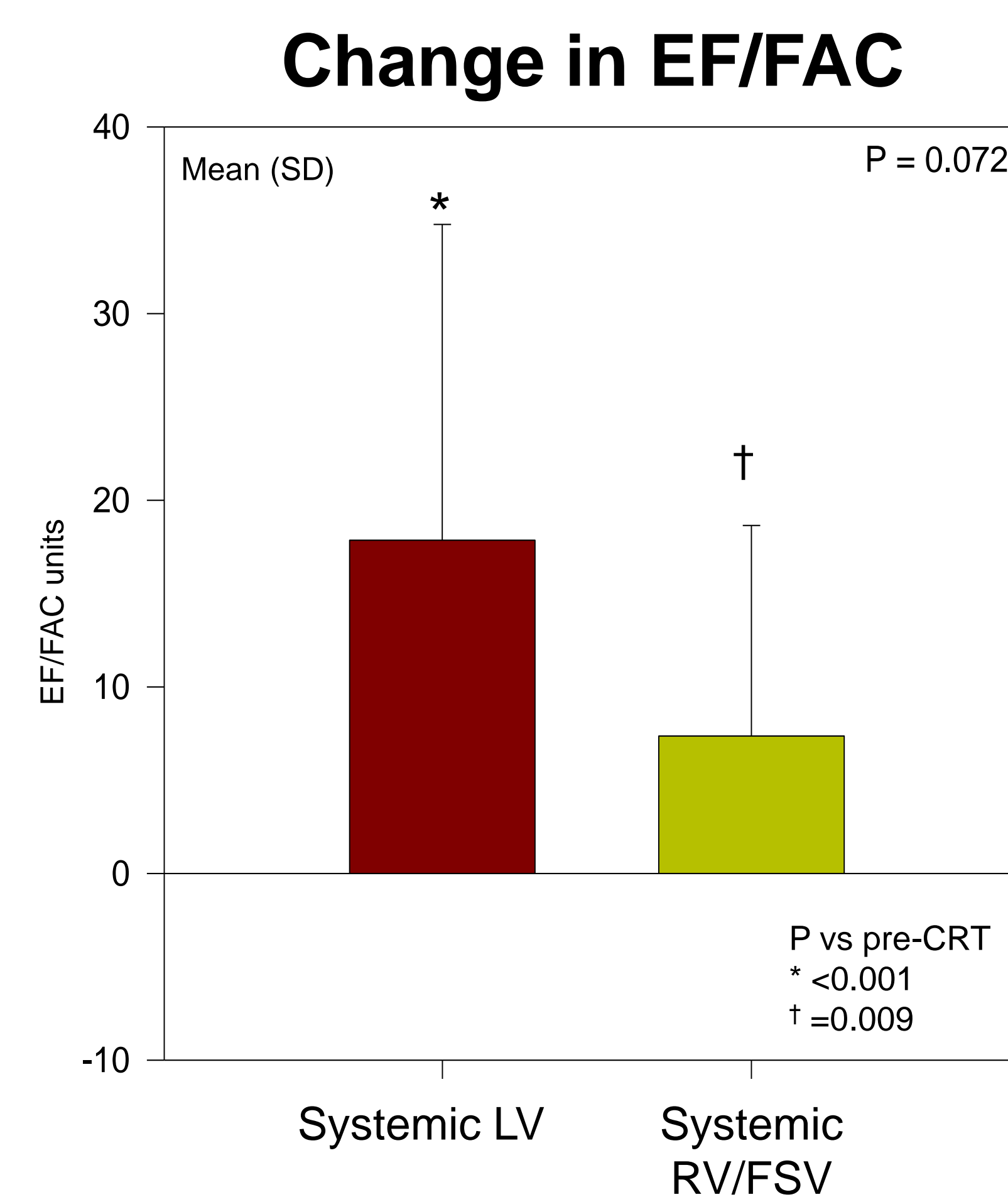
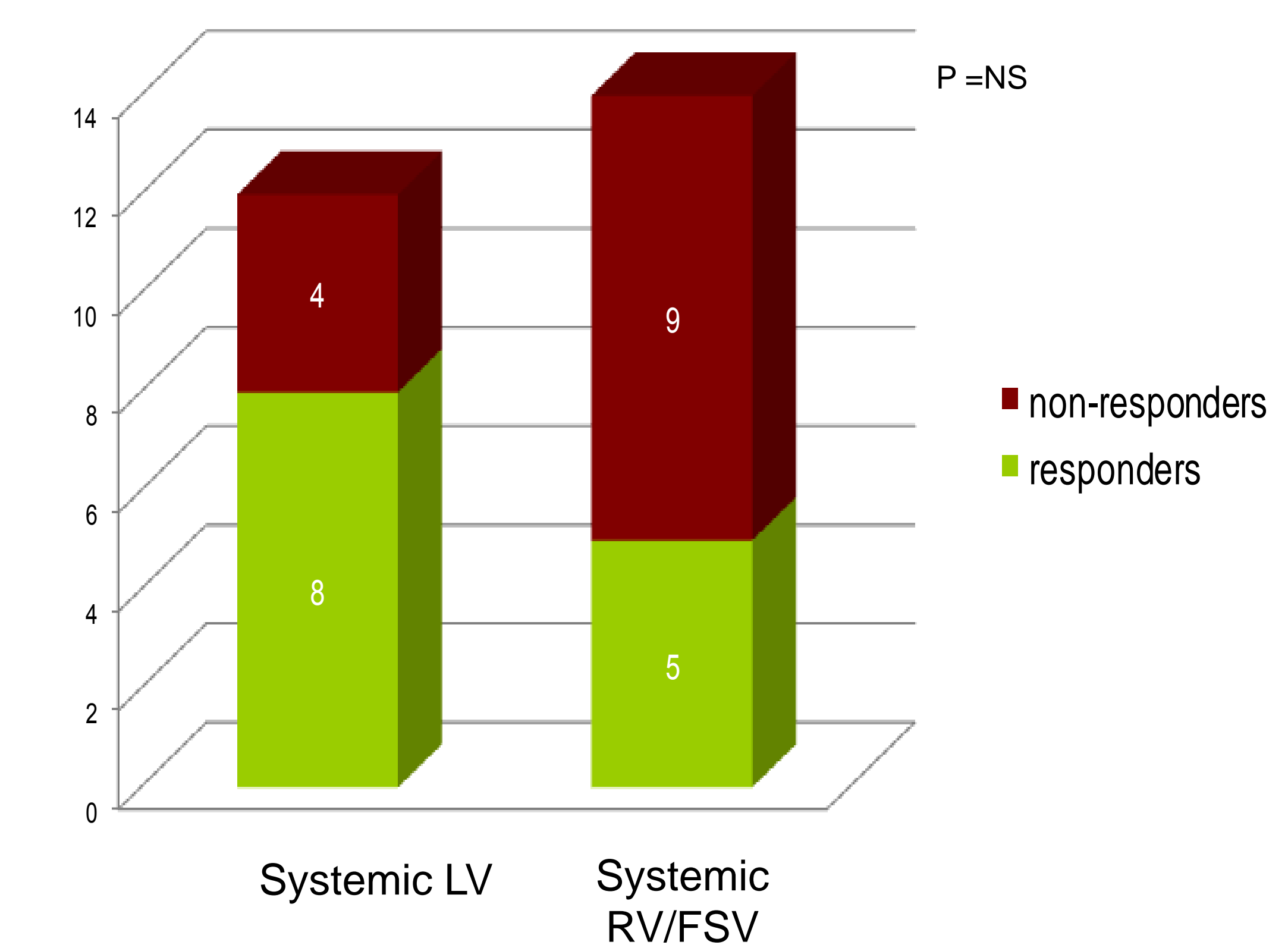
## Methods:

- Patients N=33 (consecutive)
  - » Period: 2002-2007
  - » Age: median 13 (IQR 8-23) yrs
  - » Diagnosis: CHD (N=32), cong. AV block (N=1)
  - » Systemic ventricle: left (LV, N=14), right (RV, N=16), functionally single ventricle (FSV, N=3)
- CRT indication
  - » Dyssynchronous heart failure (N=29)
    - » initial median EF or fractional area of change (FAC)=23 %, IQR 16-31 %, mean NYHA class = 2.3
    - » Prevention of systemic ventricular desynchronization in case of a bradycardic pacemaker indication (N=4)
- Implantation
  - » Type
    - » primary CRT (N=9)
    - » upgrade from conventional pacing (N=24)
  - » Technique
    - » transvenous = 6, thoracotomy = 17, mixed = 10
  - » Devices
    - » CRT-P (N=29)
    - » CRT-P/D (N=4)
  - » additional cardiac surgery in 12/33 pts
- Follow-up
  - » >6 (median 50, IQR 38-72) months
  - » Response definition for 29 pts indicated to CRT for dyssynchronous heart failure:
    - » Responders: increase in systemic ventricular EF or FAC by >10 points and improved or unchanged NYHA class at the end of FUP
    - » Hyper-responders: increase in EF/FAC by >15 points + decrease in NYHA by at least 1 class

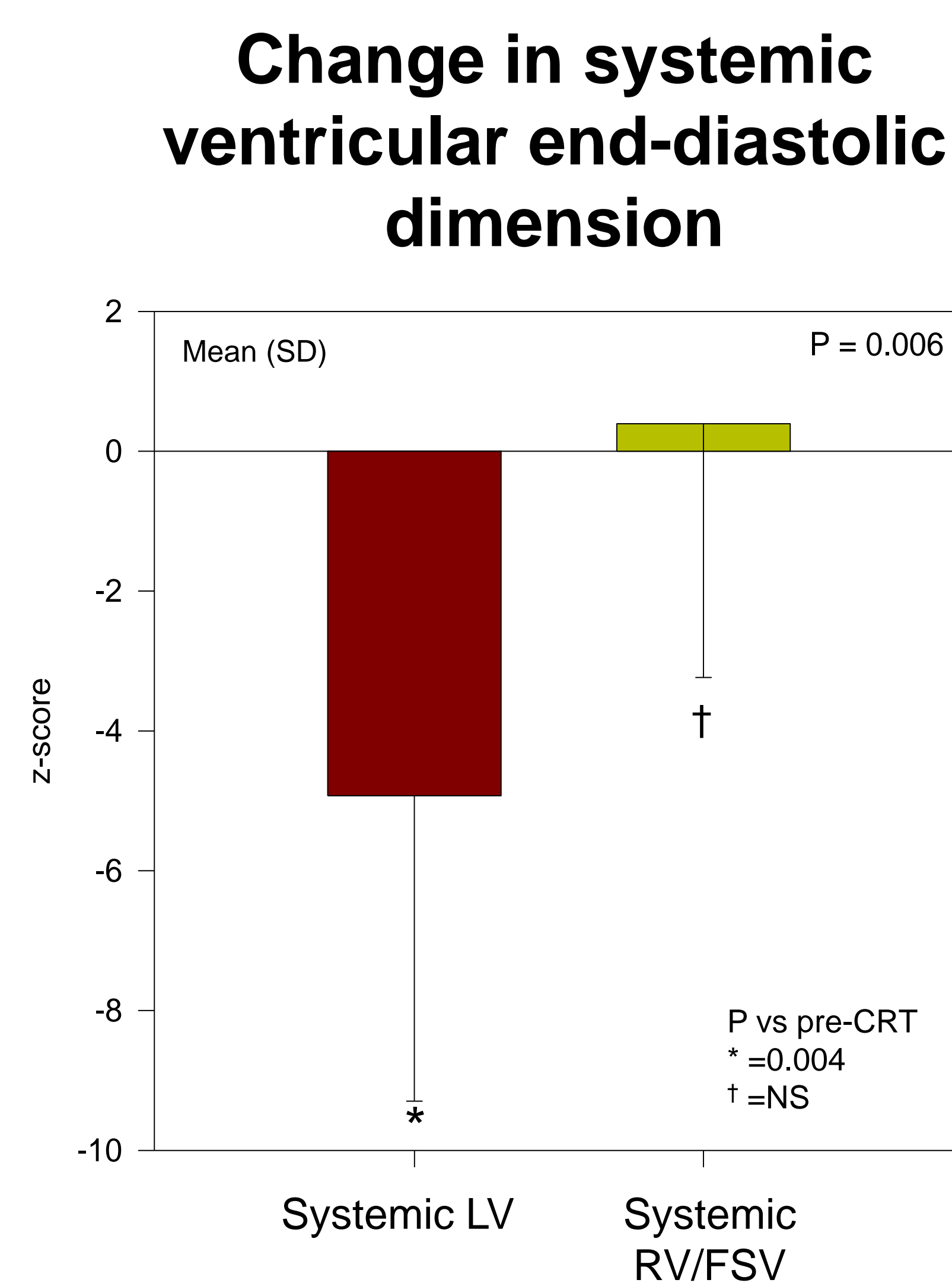
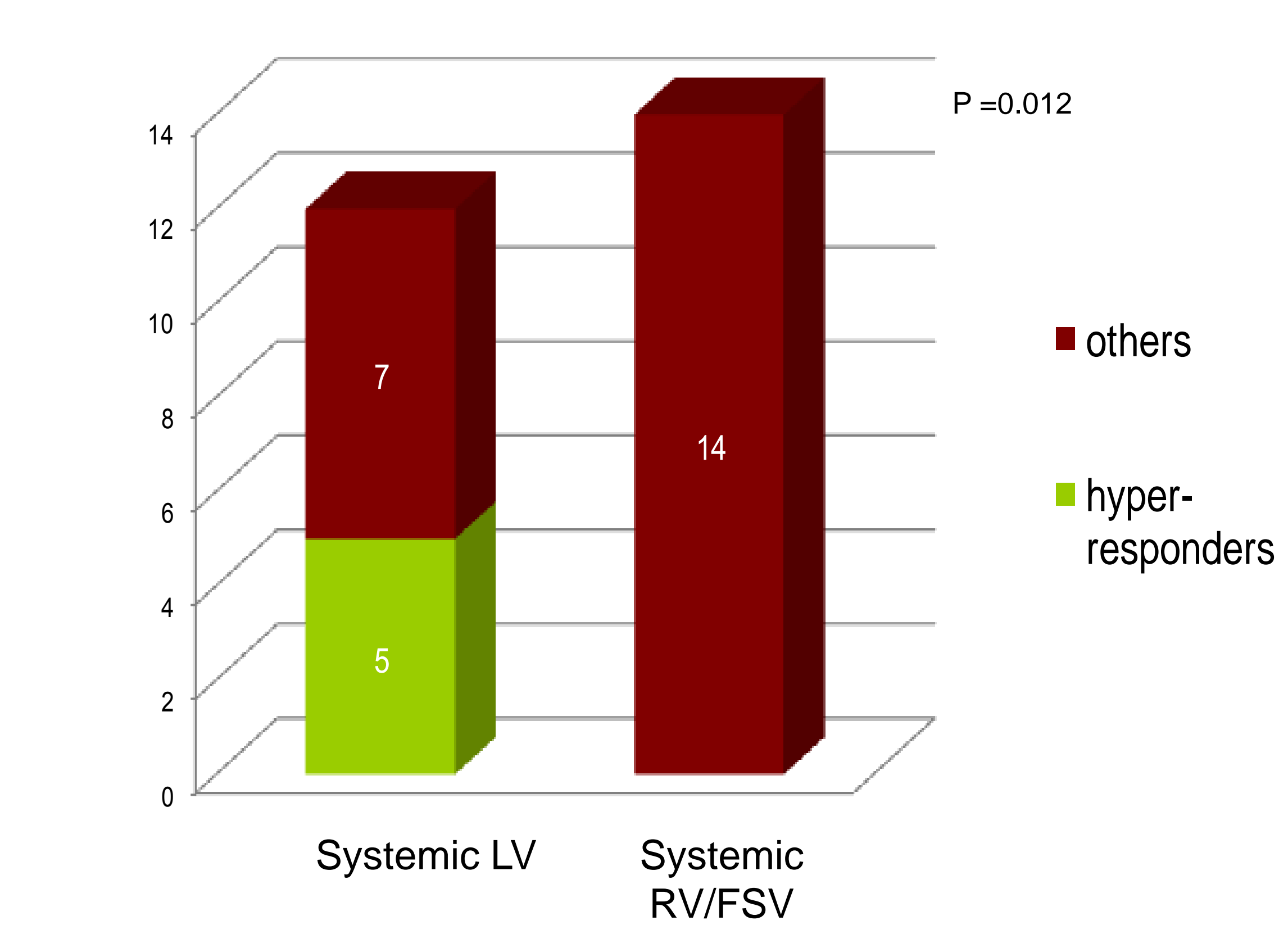
## Results:



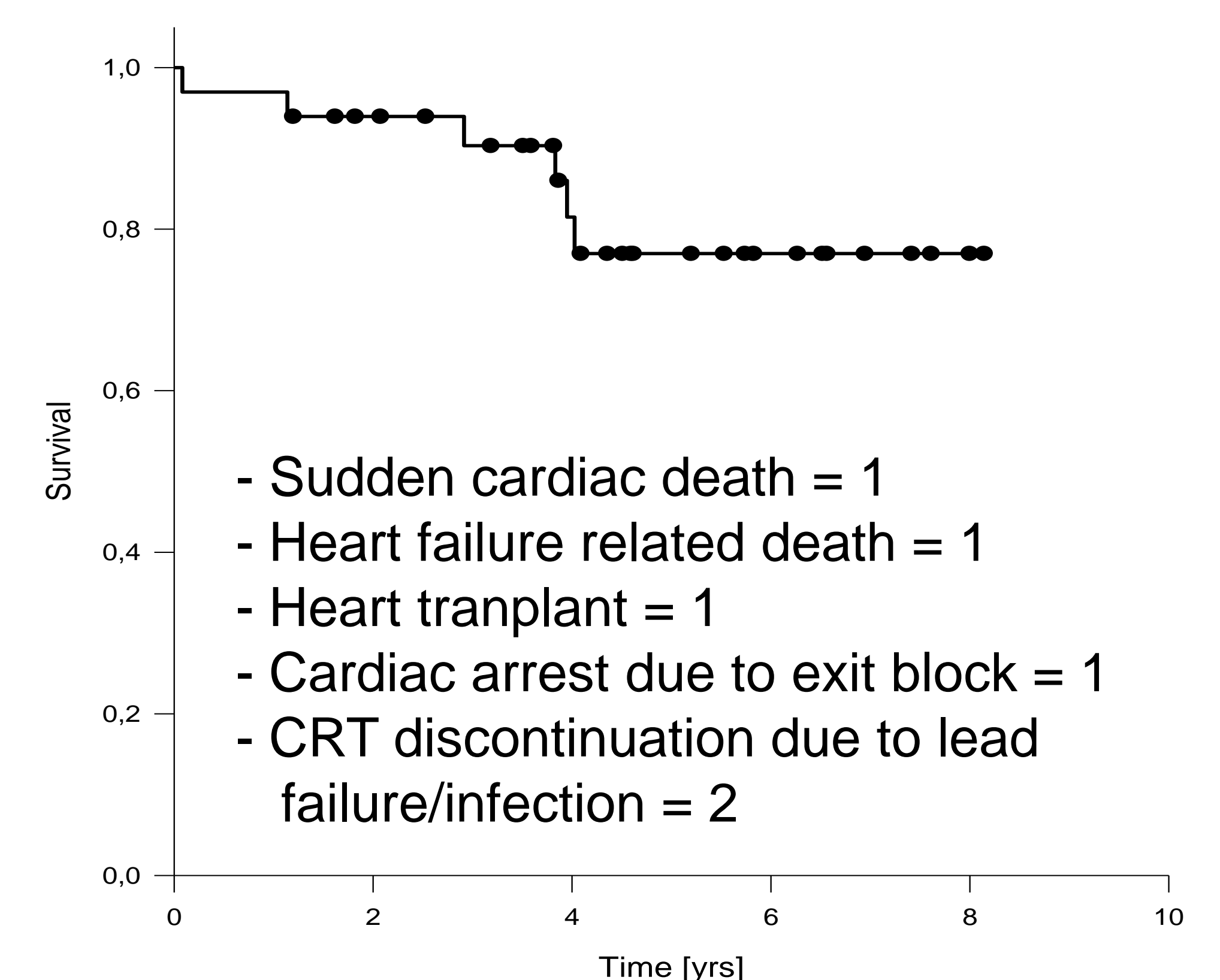
**Long-term responders of CRT**  
(13/26 pts. with available data, 50.0%)



**Long-term hyper-responders of CRT**  
(5/26 pts. with available data, 19.2 %)



**Probability of an uneventful therapy continuation**



## Surgical revisions

- N = 8 in 7 pts (elective generator replacement in 6/8)
  - » reintervention-free survival probability: 81.6 % at 5 years

## Conclusions:

- Long-term CRT led to sustained improvement of systemic ventricular function in ~2/3 of pts with systemic LV and ~1/3 of pts with systemic RV or single ventricle
- Hyper-responders occurred in the systemic LV group only
- CRT was associated with a considerable incidence of heart failure-related adverse outcomes and device complications, respectively.

## Disclosure:

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