

IS IT TIME TO DISCUSS CARDIORENAL SYNDROME DEFINITION CRITERIA ?

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Introduction and Aims

Patients (P) hospitalized for acute decompensated heart failure (ADHF) may develop renal dysfunction. Currently Cardiorenal Syndrome (CRS) is defined by an increase in serum creatinine (SCr) ≥ 0.3 mg/dl during ADHF admissions and considered a serious and prevalent event in this setting.

We sought to compare 3 different definitions of CRS and contrast their predictive power for events.

Methods

Demographic, clinical and biochemical data were recorded within 24 hours of hospital admission.

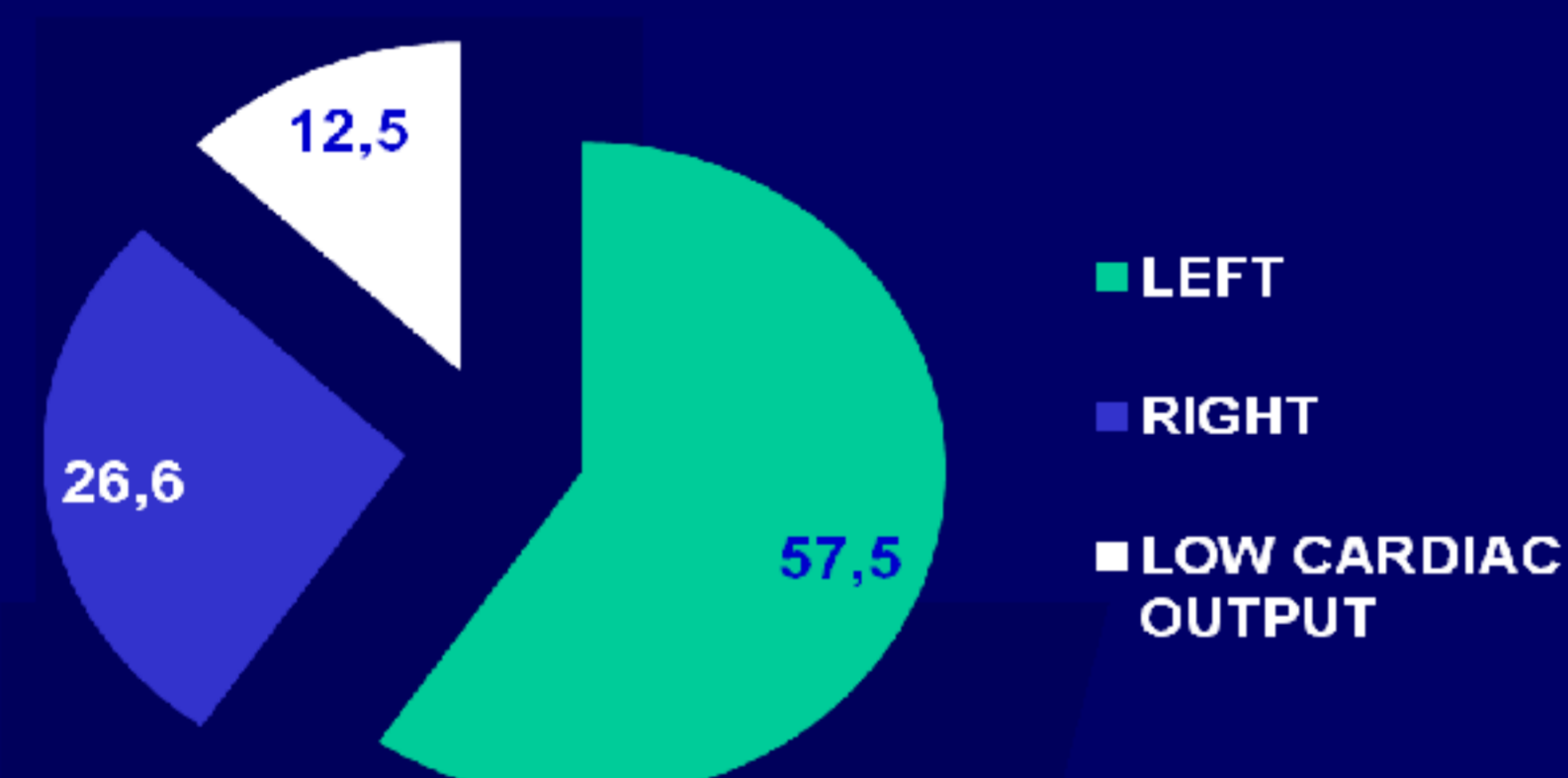
Three CRS definitions were compared:

- 1) Classical CRS (Classical):** SCr ≥ 0.3 mg/dl increase from baseline in ADHF admissions.
- 2) Extended CRS (Extended):** adding to Classical P who decreased SCr ≥ 0.3 mg/dl after improving ADHF during hospitalization.
- 3) Global CRS (Global):** adding P who developed Diuretic Resistance. This term reflected P unable to reach adequate diuresis under furosemide titrated up a 40 mg bolus + up to 20 mg/h in continuous infusion.

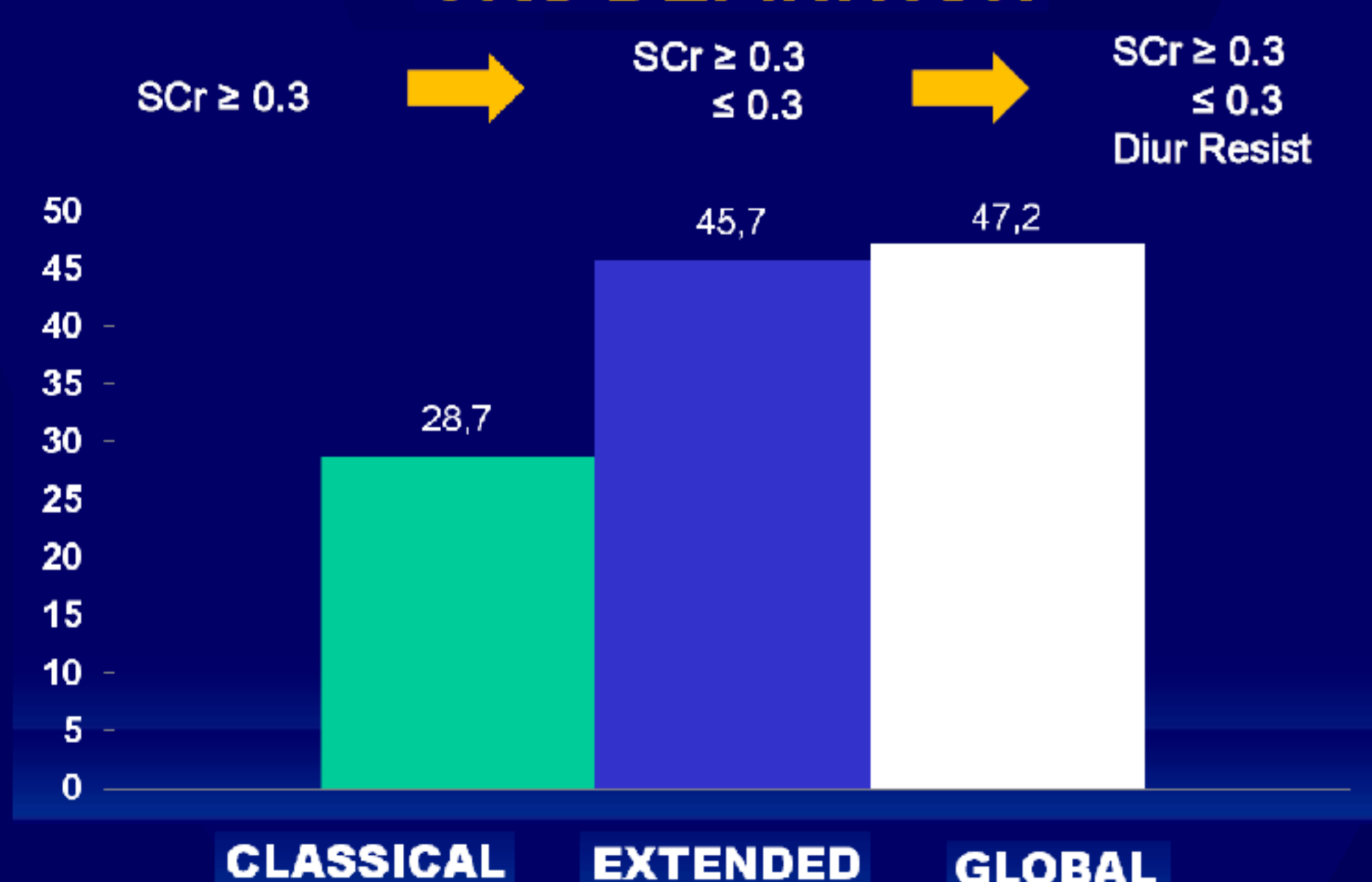
Length of stay (LOS), mortality and readmission rates at 90 days are showed. Worsening heart failure (WHF), Inotropic use and concomitant liver dysfunction were also analyzed.

ACUTE HEART FAILURE SYNDROME

534 consecutive pts



CRS DEFINITION



Results

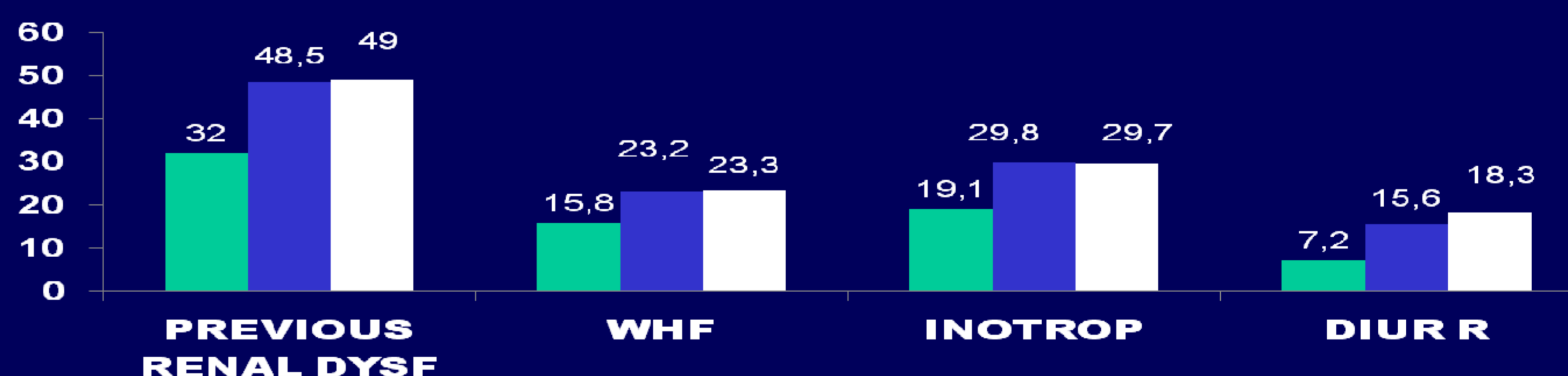
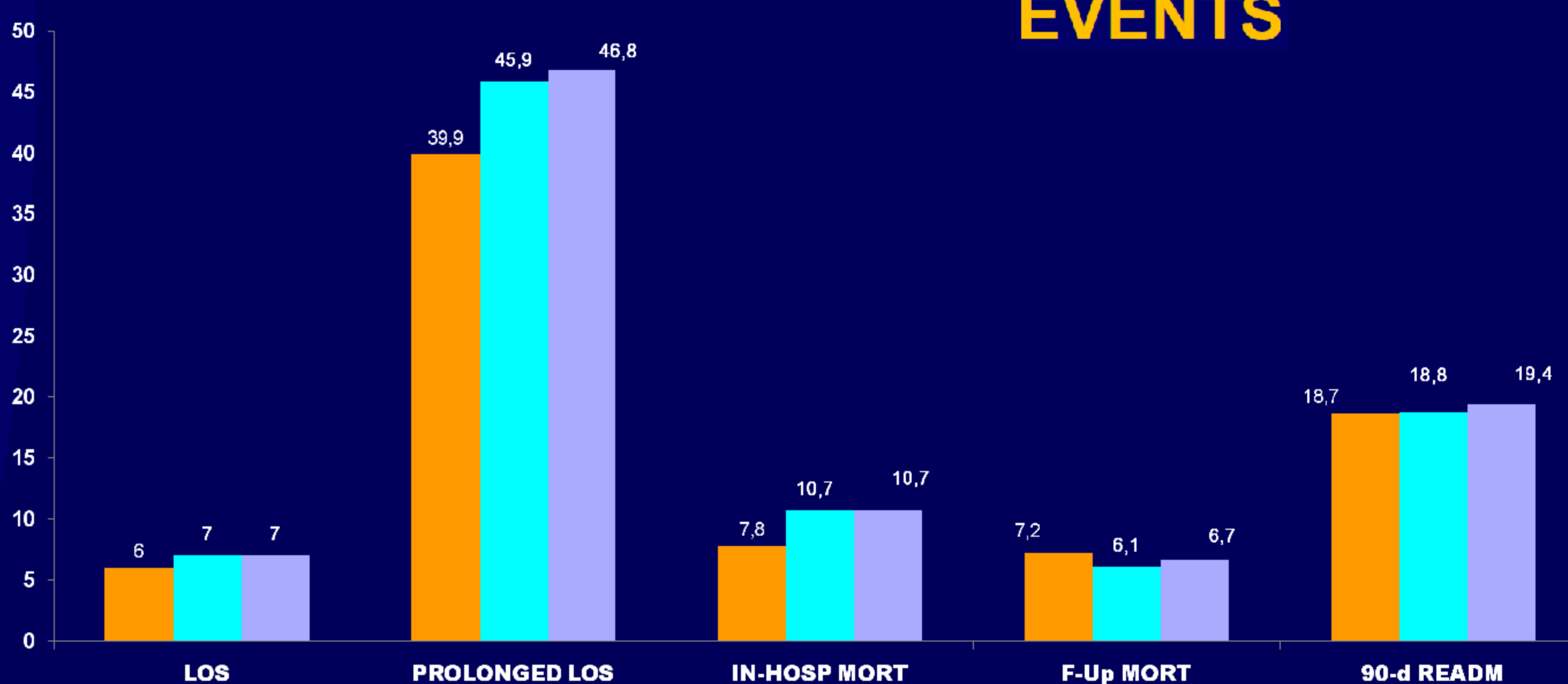
Five hundred and thirty four consecutive P were admitted due to ADHF between July 2011 and December 2013. Mean age was 70 ± 16 years old; 58.4% were male. No differences between P with or without CRS were found under Classical definition criteria, but Extended and Global were older ($p = 0.003$). Previous renal dysfunction was present in 32%, Diabetes in 25%, hypertension in 67%, while 63% had concomitant liver dysfunction. Previous chronic kidney disease was different considering Extended (48.5 vs 18; $p < 0.001$; OR 4.1; 95%CI 2.8-6.2) and Global (49 vs 17%; $p < 0.001$; OR 4.65; 95%CI 3.1-6.9), but was not different for Classical ($p = NS$).

Neither LOS, nor time to first readmission or death were different under CRS definitions ($p = NS$). Prolonged LOS (> 7 days) was not different for Classical ($p = NS$), but was more frequent if Extended (46 vs 36%; $p = 0.02$; OR 1.52; 95%CI 1.07-2.15) or Global (47 vs 35%; $p = 0.005$; OR 1.66; 95%CI 1.17-2.35) definitions were considered.

Readmission was 18%, and was not different under analyzed definitions ($p = NS$). In-hospital mortality was 8.5%, and tended to be different when Global was considered (10.7 vs 6.4%; $p = 0.08$; OR 1.76; 95%CI 0.94-3.2), $p = NS$ for Classical and Extended. Follow up mortality did not differ for studied criteria ($p = NS$). WHF was not different for Classical, but was relevant if Extended or Global criteria were used (23 vs 11%; $p = 0.001$; OR 2.3; 95%CI 1.4-3.7).

Liver dysfunction was only identified by Global (67 vs 59%; $p = 0.048$; 95%CI 1.01-2), but not under Classical or Extended ($p = NS$).

EVENTS



Conclusions and perspectives

CRS was frequent in ADHF admissions in our population. Classical definition failed to predict events.

Greater predictive power might be achieved by adding improving renal function and diuretic resistance criteria.

It is possible that adding biomarkers to CRS definition might add a stronger and more specific predictive power in P admitted for ADHF episodes.

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Authors declare that they have no conflict of interest regarding the material discussed in the present poster

