

Rescue ultrafiltration in diuretic resistant patients hospitalized for acute heart failure. To ultrafiltrate or not: is that the question ?

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INTRODUCTION & AIMS:

Loop diuretics (LD) are considered the mainstay treatment for patients (P) hospitalized for acute decompensated heart failure (ADHF). Despite pharmacologic treatment, a substantial proportion of P do not achieve negative fluid balance during hospitalization.

Ultrafiltration (UF) has been proposed to relieve congestion in these P, but its efficacy on outcome has not been fully addressed.

We sought to compare rescue-UF impact on outcome in P who were admitted for NYHA class III/IV ADHF.

METHODS:

Resistance to diuretics (RDIUR) was defined as failure to achieve a urine output ≥ 1.5 ml/kg/hr due to a pre-established protocol that included furosemide (FURO) in an initial 40 mg-IV bolus, followed by a two hs 5 mg/hr-continuous infusion. Under failure to achieve the goal, FURO dose was doubled for two additional hours. Failure to respond to this strategy was called "diuretic resistance". Rescue-UF was indicated in P with persistent fluid overload refractory to medical therapy with LD,

IV vasodilators and inotropic challenge if at least one of the following were present: severe ventricular dysfunction, pulmonary hypertension or new organ failure development.

Demographic and clinical variables were compared according to rescue-UF indication. In-hospital and 360-day outcomes were reported for both groups. P under chronic dialysis and those who received a heart transplant were excluded from this analysis.

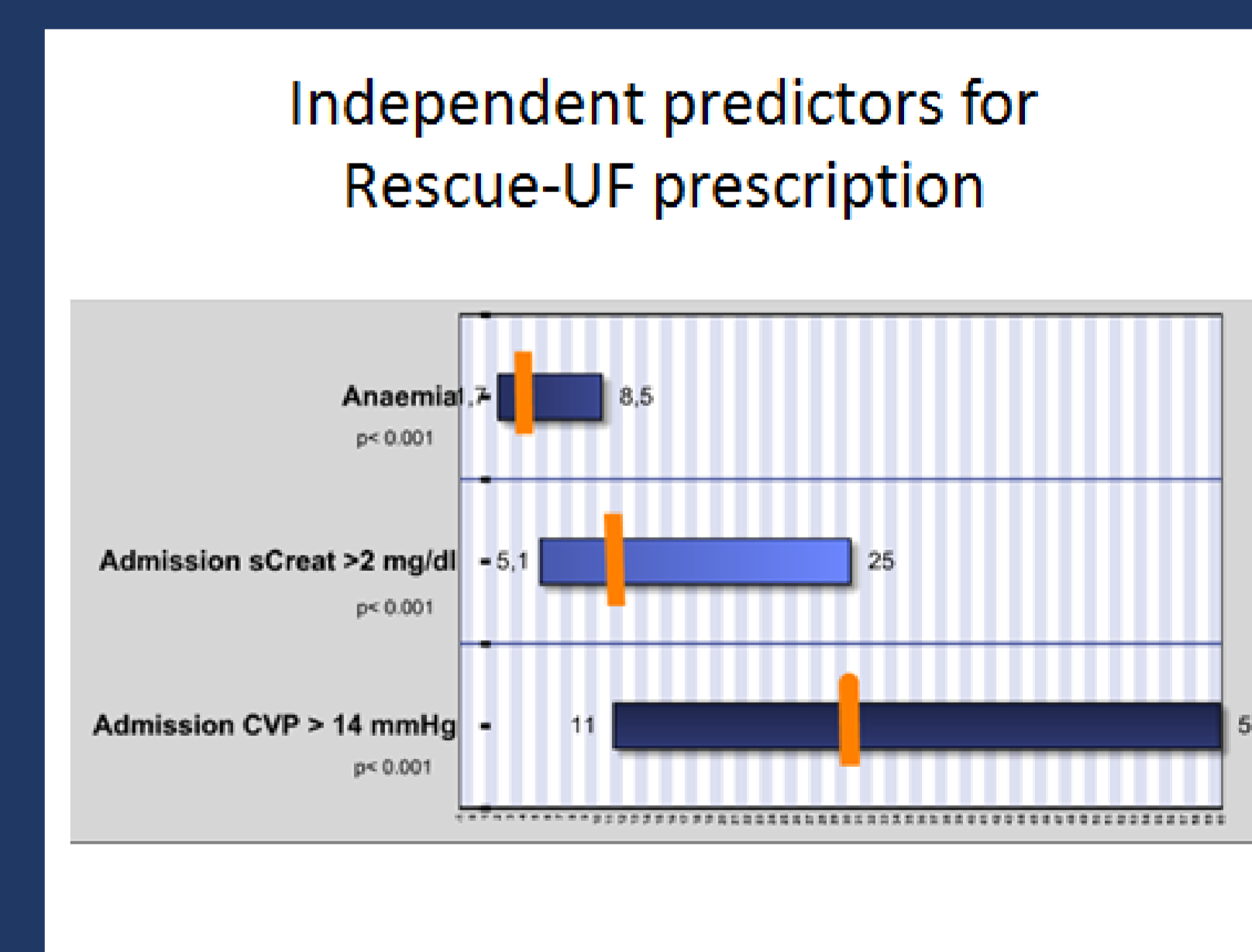
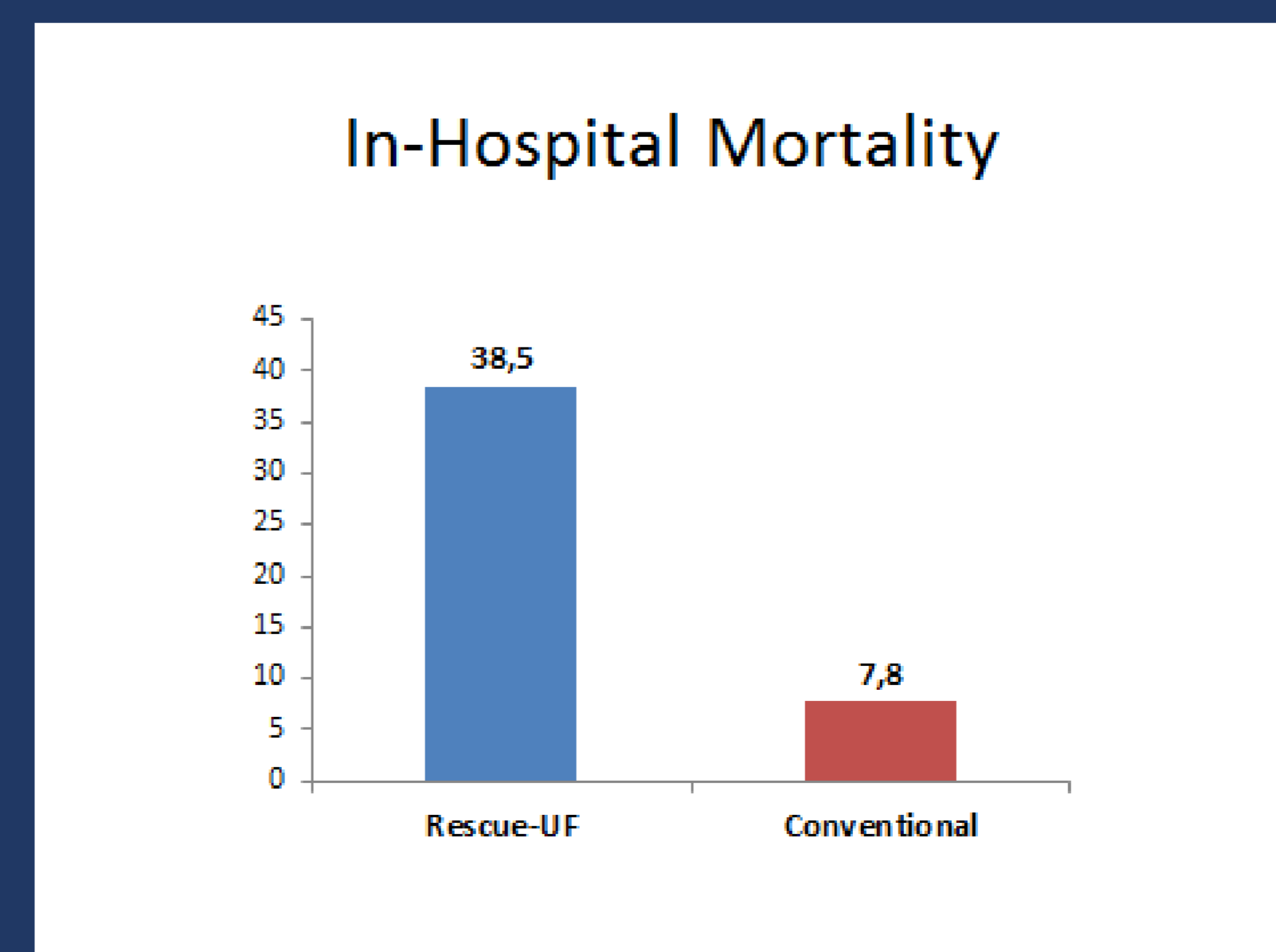
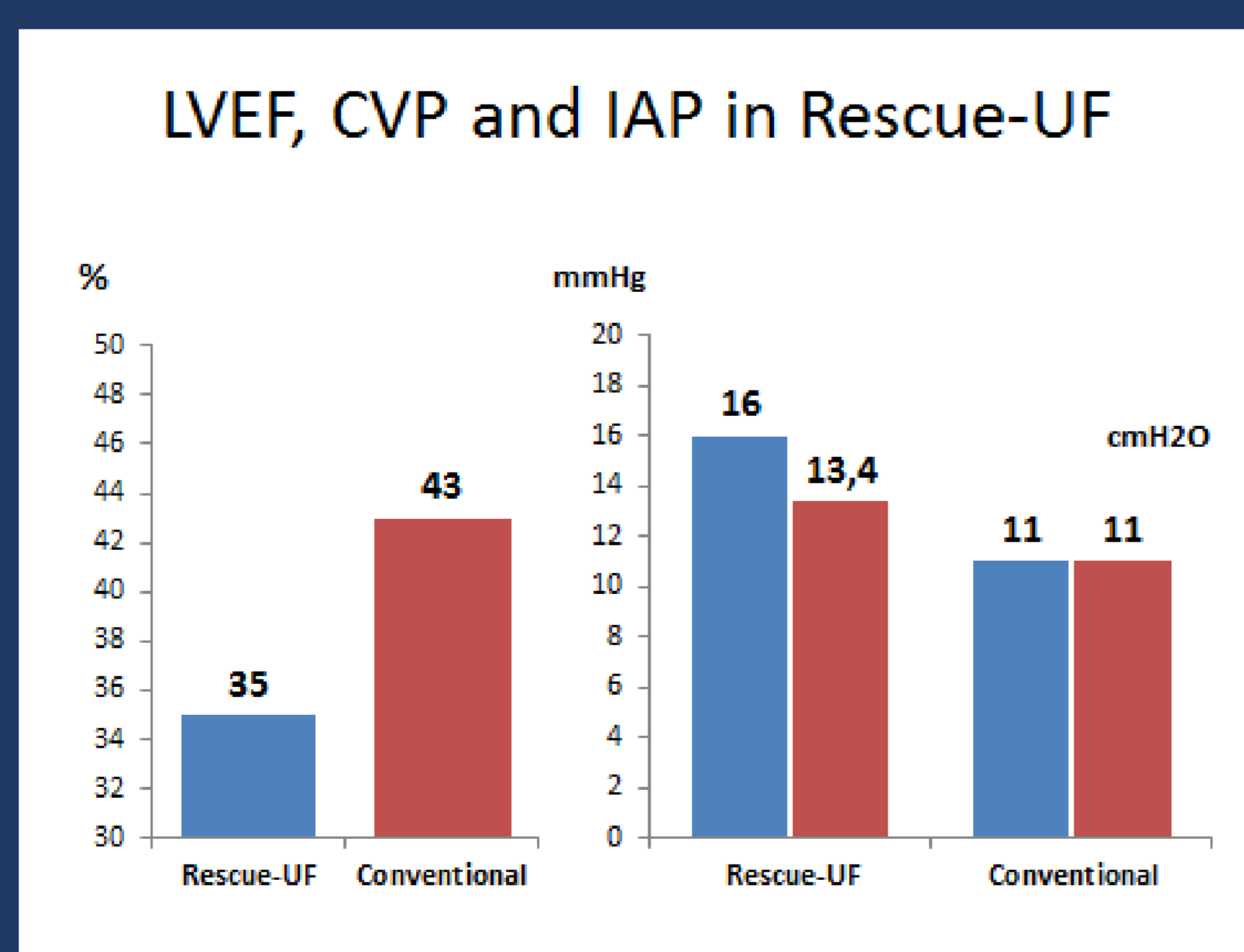
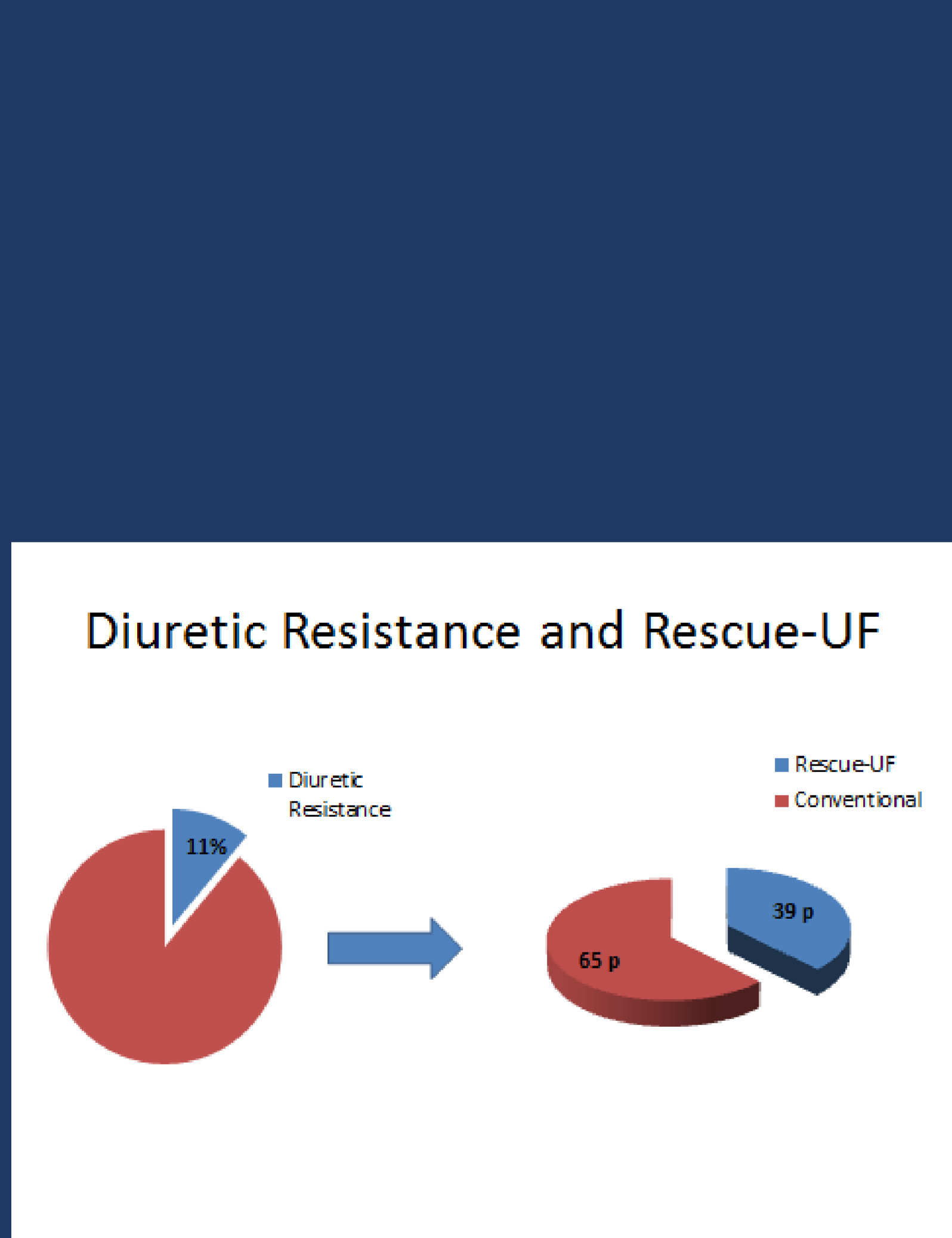
RESULTS:

Between July 2011 and December 2016, 949 consecutive P were admitted for ADHF. One hundred and four P (11%) developed RDIUR. While 39 P (4.1%) received UF, 65 P received conventional treatment. A total of 56% were men, aged 71 ± 15 years old. Hypertension in 73%, Diabetes in 28%, and CK in 31% were found. Although did not differ in terms of previous cardiac disease, UF P were younger (65 ± 15 vs 71 ± 14 years old; $p = 0.05$) with lower Haematocrit (35 vs 39%, $p < 0.01$), higher central venous pressures (CVP)(16 vs 11 mmHg, $p < 0.01$) and admission creatinine (adm-sCr)(2.6 vs 1.42mg/dl; $p < 0.01$). Left Ventricular Ejection Fraction (LVEF). was lower in P who were not filtered (35 vs 43%; $p = 0.02$). Furosemide doses were similar despite UF strategy during the first three admission days ($p = NS$ in all cases), but diuresis was lower in P who received UF at 2nd (1486 vs 2431 ml/day; $p = 0.01$) and 3rd days (1550 vs 2523; $p < 0.01$) during hospital stay. P with RDIUR received inotropes more frequently (62.5 vs 15%; $p < 0.001$; OR 8.8; CI95% 5.7-13),

but no differences were found in its prescription rate (56.4 vs 66%; $p = 0.32$). In-hospital worsening heart failure was lower in P who received UF (30.8 vs 55.4%; $p = 0.01$; OR 0.36; CI95% 0.16-0.83). Length of stay was higher in RDIUR (12 vs 6 days; $p < 0.001$), but it was not different if UF was prescribed (12 vs 11 days; $p = NS$).

Total in-hospital mortality was 11.2% and was higher in RDIUR (38.5 vs 7.8%; $p < 0.001$; OR 7.4; CI95% 4.6-11). Mortality was similar despite UF strategy at mid-term ($p = NS$ in both), but lower at 1 year in P who were UF (46.2 vs 68.8%; $p = 0.02$; OR 0.39; CI95% 0.17-0.88).

Readmission rate during first year was not different, regardless UF ($p = NS$ during follow-up at 30; 180 or 360 days). Admission CVP > 14 mmHg (HR 25.8; $p < 0.001$; CI95% 11-59), adm-sCr > 2 mg/dl (HR 11.4; $p < 0.001$; CI95% 5.1-25) and anaemia (HR 3.8; $p < 0.001$; CI95% 1.7-8.5) were independent predictors of rescue-UF prescription.



CONCLUSIONS:

Diuretic resistance is a severe event in P hospitalized for ADHF. In these P, UF allowed symptom control in P with deeper oliguria, with no effect in short or mid-term mortality or readmission rates. Despite no clinical phenotype could be identified in P who were filtered, lower renal reserve, higher fluid overload and anaemia prompted UF need in ADHF hospitalizations with RDIUR.

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