

 **CARDIAC FUNCTION AND HEART FAILURE**

**IMPACT OF BASELINE VOLUME STATUS AND LVEF ON ALL-CAUSE MORTALITY IN THE BEST TRIAL**

ACC Poster Contributions

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In patients with heart failure (HF) treated with loop diuretics, RAAS inhibition and digoxin, volume overload is a sign of decompensation and often heralds acute HF. The  $\beta$ -Blocker Evaluation of Survival Trial (BEST) evaluated the effects of bucindolol vs. placebo in advanced HF. Volume status at baseline (BL) was not an exclusion criterion. JVD, edema > pedal, rales 1/2 way up, and hepatomegaly at BL were used to categorize volume overload (VOL) or euvoemia (EUV). LVEF at BL was measured by radionuclide techniques.

**Results:** presented below. All-cause mortality [hazard ratio (HR) and events/patients at-risk (%) by volume status and LVEF at BL.

Patient Group	Placebo (%)	Bucindolol (%)	HR (95% CI)
All Pts	439/1354 (32)	402/1354 (30)	0.87 (0.76, 1.00)
EUV	252/862 (29)	208/870 (24)	0.74 (0.61, 0.89)
VOL	187/492 (38)#	194/484 (40)#	1.10 (0.89, 1.34)*
EF $\geq$ 0.25	161/610 (26)	130/566 (23)	0.82 (0.65, 1.04)
EF <0.25	278/744 (37)#	272/788 (35)#	0.88 (0.75, 1.05)
EUV, EF $\geq$ 0.25	89/396 (22)	78/394 (20)	0.83 (0.61, 1.13)
EUV, EF <0.25	163/466 (35)#	130/476 (27)#	0.69 (0.55, 0.88)
VOL, EF $\geq$ 0.25	72/214 (34)	52/172 (30)	0.87 (0.60, 1.24)
VOL, EF <0.25	115/278 (41)	142/312 (46)#	1.15 (0.89, 1.49)

# p <0.01 for covariate subgroup comparison w/in treatment group;

\* p <0.01 for treatment by covariate grouping interaction.

At BL 36% of pts had VOL and 57% had EF <0.25. Presence of both VOL and EF <0.25 was associated with highest mortality and the effect was additive; in placebo pts, mortality increased by 30% in VOL, 42% in EF <0.25 and 86% in VOL + EF <0.25 vs EUV + EF  $\geq$ 0.25. As single variables VOL but not EF <0.25, prevented the beneficial effect of bucindolol on mortality (interaction p <0.01). The effect of bucindolol on mortality in pts with EF <0.25 depended on volume status, with trends for worsened outcomes in VOL and better outcomes in EUV.

**Conclusions:** These data suggest that use of bucindolol, and potentially other  $\beta$ -blockers, may be associated with a greater mortality benefit in patients with EF <0.25 and EUV.  $\beta$ -blockers should be used with caution in pts with VOL and EF <0.25.