Abstract: P1630

**Improved outcome by guideline-directed medical therapy in real-world heart failure patients despite low blood pressure and renal dysfunction**

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**Background:** Among patients with heart failure and reduced ejection fraction (HFrEF), angiotensin-converting enzyme inhibitors (ACEI/ARB), β-adrenergic receptor blockers (BB) and aldosterone antagonists (AA) are guideline-directed medical therapy (GDMT) to improve prognosis and well-being. However, low blood pressure (BP) and renal dysfunction are often challenges and barriers of the clinical implementation in real-world.

**Purpose:** To investigate whether it is beneficial to apply GDMT in real-world patients with HFrEF despite low blood pressure and renal dysfunction.

**Methods:** This study initially included 51060 HF patients from the Swedish Heart Failure Registry. After the exclusion of patients with ejection fraction ≥40% (53.4%), systolic BP>100mmHg (40.0%), eGFR>45ml/min/1.73m² (3.3%) and those died during hospitalization (0.3%), 1386 patients were ultimately enrolled in this study. Patients were grouped into five subgroups (ACEI/ARB+BB+AA, ACEI/ARB+BB, ACEI/ARB+AA, ACEI/ARB and BB). Outcome is all cause mortality.

**Results:** Among the study patients, 485 (35.0%) were treated with ACEI/ARB+BB+AA, 672 (48.5%) with ACEI/ARB+BB, 41 (3.0%) with ACEI/ARB+AA, 68 (4.9%) with ACEI/ARB and 120 (8.7%) with BB. Patients in ACEI/ARB+BB+AA group were younger (72.9±9.7 vs. 76.1±9.2 vs. 73.9±9.7 vs. 79.5±8.0 vs. 79.3±8.9), with higher BMI (25.4±4.5 vs. 25.5±4.7 vs. 23.7±4.2 vs. 23.4±3.8 vs. 24.7±6.3), more in NYHA I/II (30.8% vs. 33.3% vs. 1.7% vs. 18.9% vs. 24.3%). During the follow-up, all cause mortality was lowest in patients treated with ACEI/ARB+BB+AA (59% vs. 60.4% vs. 75.6% vs. 75% vs. 79.2%). After adjustment for age and gender, when compared with the ACEI/ARB+BB+AA group, the hazard ratio for ACEI/ARB+BB is 1.05 (0.91–1.23), ACEI/ARB+AA 1.16 (0.80–1.68), ACEI/ARB 1.51 (1.11–2.04), and BB 2.36 (1.86–2.98) respectively

**Conclusions:** In real-world HFrEF patients with low blood pressure and renal dysfunction, full medication of GDMT is associated with improved long-term survival.