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Mortality in Heart Failure with Preserved Vs. Reduced Systolic Function; The Same Outcome But Different Causes

Zafrir, B[1]; Paz, H[2]; Wolff, R[3]; Salman, N[3]; Merhavi, D[3]; Antebi, A[2]; Schliamser, J[1]; Yaniv, N[3]; Ammar, R[2]; Lewis, B[1]; Amir, O[3]

[1]Lady Davis Carmel Medical Center, Haifa, Israel; [2]Lin Medical Center, Haifa, Israel; [3]Lady Davis Carmel Medical Center and Lin Medical Center, Haifa, Israel

Background: There are conflicting reports regarding the mortality rates in heart failure patients with preserved systolic function (HFPSF) comparing to systolic dysfunction heart failure (SHF). We aimed to evaluate the mortality rates and causes in HFPSF (EF≥40%) compared to SHF (EF<40%) patients.

Methods: Analysis included 164 HFPSF and 317 SHF patients, followed at our medical center. We documented every patient cause of mortality based on clinic data and hospital records. We classified the cause of death as pump failure, sudden cardiac death (SCD) or as non-cardiac cause {renal disease, malignancy, stroke, major bleed and sepsis}. In 2 patients we could not determine the cause of death.

Results: A total of 148 (31%) patients died over a mean follow-up period of 2 years; 53(32%) HFPSF and 95(30%) SHF patients (p=0.96). Comparing to the HFPSF patients, the SHF patients were predominantly younger males with ischemic etiology but with fewer cardiovascular comorbidities such as obesity, hypertension, diabetes mellitus and atrial fibrillation:

Variable	E.F<40% (n=317)	E.F≥40% (n=164)	P-value
Age	65.1±13.9	70.7±13.2	<0.0001
Body mass index	28.2±5.2	31.9±6.9	<0.0001
Female gender	55 (17%)	86 (53%)	<0.0001
Ischemic etiology	209 (66%)	71 (43%)	<0.0001
Hypertension	168 (53%)	124 (76%)	<0.0001
Diabetes Mellitus	127 (40%)	91 (56%)	0.001
Atrial Fibrillation	111 (35%)	86 (52%)	<0.0001

The total mortality rates between the two groups were simillar, however the etiology was different. The SHF patients comparing to the HFPSF patients had significantly higher death rates due to pump failure {32/95 (34%) patients vs. 9/53 (17%) patients, respectively, p<0.05} with a similar prevalence of mortality due to SCD {17/95 (18%) vs. 10/53 (19%) patients, respectively, p=0.88}. However, the SHF patients had a tendency towards lower rates of mortality due to non-cardiac causes {45/95 (47%) patients vs. 33/53 (62%) patients, respectively, p=0.08}.

Conclusion: Although the characteristics of HFPSF and SHF patients are distinctively different, the mortality rates of these two patients' populations are simillar. Of note, the etiology of death is different among the two groups. Pump failure is significantly higher in SHF and on the other hand a tendency towards non-cardiac mortality is higher in patients with HFPSF.