Introduction:

- Transthyretin amyloid cardiomyopathy (ATTR-CA) is an increasingly recognized etiology of heart failure with preserved ejection fraction (HFpEF).
- We sought to determine the prevalence of heart failure with reduced ejection fraction (HFrEF) in ATTR-CA and its prognostic implications.

Methods:

- We analyzed patients with the diagnosis of ATTR-CA in our prospective Tc-99m pyrophosphate (PYP) registry.
- The diagnosis was non-invasively established based on positive PYP (defined as Perugini grade ≥2 and diffuse myocardial tracer uptake on the SPECT) and negative serum studies for AL amyloidosis.
- The transthoracic echocardiogram (TTE) at the time of PYP was used to identify patients with reduced EF <50% (ATTR-rEF) and preserved EF ≥50% (ATTR-pEF).
- Kaplan-Meier curve for survival between the two groups and multivariable logistic regression analysis were generated.

Results:

- Of the 124 ATTR-CA patients (mean age of 79.9 ± 7.4, 87% men, 90% Caucasians), 51 (41%) were ATTR-rEF.
- Compared to ATTR-pEF, at the time of PYP, ATTR-rEF were more symptomatic (NYHA-FC ≥ 3, 61% vs 26%, p=0.001), had lower CAD prevalence (37% vs 55%, p=0.05), worse mean diastolic dysfunction (3 vs 2.15, p<0.01), lower TAPSE (<1.7, 59% vs 25%, p<0.001) and higher creatinine (1.63 ± 0.85 vs 1.27 ± 0.55 mg/dl, p=0.01).
- There was no difference in terms of biomarkers (BNP, p=0.1 and troponin, p=0.3) and interventricular septal thickness (p=0.2).
- Over a mean follow up period of 1.5±0.3 yrs, 27 (22%) patients died. ATTR-rEF was associated with higher mortality compared to ATTR-pEF (35% vs 12%, p=0.002; OR 3.9, 95%CI 1.57-9.57, p=0.003).
- On multivariable logistic regression analysis adjusting for TAPSE and creatinine, reduced EF was an independent predictor of mortality (OR 2.13, 95% CI 0.01-0.31, p=0.03).

Conclusions:

- HFrEF is present in more than one-third of patients with ATTR-CA at the time of diagnosis, and is an independent predictor of mortality in ATTR-CA.