Characteristics of Asymptomatic Heart Failure Patients with Reduced Ejection Fraction in a Large US-Based Real-World Cohort

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Background

- Asymptomatic left ventricular systolic dysfunction (ALVSD) is characterized by having evidence of structural heart disease without clinical symptoms of heart failure (HF).
- The prevalence of ALVSD is estimated to be as high as that of overt HF; however, due to lack of symptoms and screening protocols it often remains undetected.
- These patients are at higher risk for developing clinical HF and death. Therefore, understanding characteristics of asymptomatic patients with reduced left ventricular ejection fraction (LVEF) may help to identify patients at risk for progression to later stage HF who may benefit from more intensive monitoring and management.

Objective

To characterize asymptomatic HF patients and compare patient characteristics and management to symptomatic HF patients

Methods

- The data source for this analysis was the OM1 HF Registry, a real-world cohort of patients followed longitudinally as part of a large, deterministically linked clinical and administrative dataset in the U.S. derived from medical and pharmacy claims, electronic medical record (EMR) data, and death data.
- This analysis included data from January 2013 to June 2021. Adult patients with HF were included if they had reduced LVEF (defined as <40%) prior to or on the date of their most recent New York Heart Association (NYHA) classification (index date) and had at least 12 months of baseline data.
- Asymptomatic patients were defined by NYHA Class I. Descriptive analyses of patients by NYHA Class I-IV were conducted.
- Comorbidities, treatments, and hospitalizations occurring within the 12 months prior to or on the index date were presented.

Results

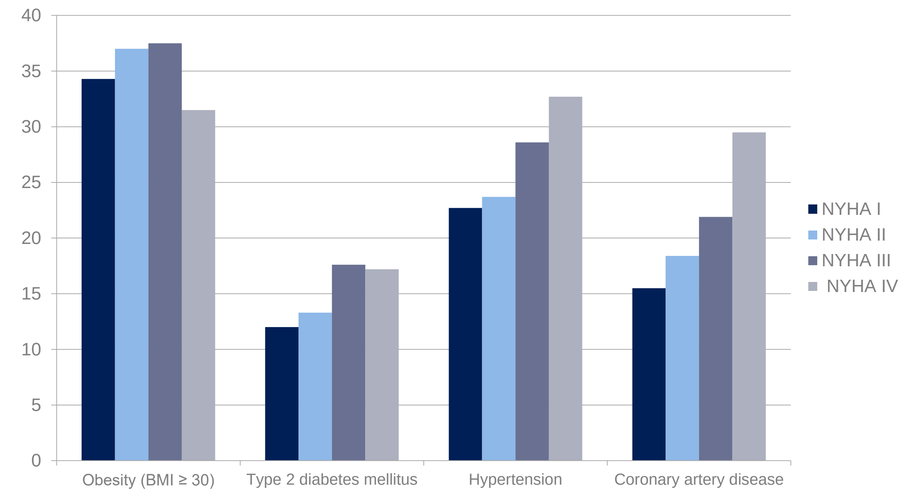
- Of the 178,242 patients in the OM1 HF Registry, 15,337 patients met the inclusion criteria and 3,703 (24%) were NYHA Class 1.
- The mean age of NYHA Class I patients was 71 years, 68% were male, and 11% were current smokers.
- Prevalence of selected comorbidities differed by NYHA class, with hypertension ranging from 23% to 33%, coronary artery disease from 16% to 30%, and Type 2 diabetes from 12% to 17%, for NYHA Class I and NYHA Class IV, respectively. Obesity was recorded in approximately one-third of patients and was similar across NYHA classes.
- The proportion of patients with a HF hospitalization in the past 12 months ranged from 16% to 47% for NYHA Class I and IV, respectively.
- Treatment with a beta blocker + renin-angiotensin-aldosterone system inhibitor (RAASi) in the 12 months prior to index ranged from 28% to 56% for patients in NYHA Class I and IV, respectively.

Table 1. Patient Characteristics by NYHA Class

		NYHA I (N=3,703)	NYHA II (N=7,546)	NYHA III (N=3,739)	NYHA IV (N=349)
Age (years)	Mean (s.d.)	71.1 (12.1)	71.9 (11.7)	72.7 (11.6)	72.6 (11.7)
Sex	Female	1,174 (32%)	2,430 (32%)	1,164 (31%)	93 (27%)
	Male	2,529 (68%)	5,116 (68%)	2,575 (69%)	256 (73%)
Race*	White	3,045 (99%)	6,212 (99%)	2,948 (99%)	260 (98%)
	Other	29 (1%)	66 (1%)	34 (1%)	6 (2%)
Geographic Region*	Northeast	512 (15%)	565 (8%)	335 (9%)	35 (11%)
	South	1,541 (44%)	2,955 (41%)	1,471 (41%)	163 (50%)
	Midwest	1,080 (31%)	3,025 (42%)	1,277 (36%)	87 (27%)
	West	399 (11%)	665 (9%)	480 (14%)	42 (13%)
Current Smoker	Yes, n (%)	420 (11%)	1,023 (14%)	565 (15%)	49 (14%)
HF hospitalization**	Yes, n (%)	596 (16%)	1,672 (22%)	1,269 (34%)	165 (47%)
Beta blocker + RAASi treatment**	Yes, n (%)	1,033 (28%)	2,727 (36%)	1,785 (48%)	197 (56%)

*Percentages exclude patients with unknown race and region; **In the 12 months prior to or on index

Figure 1. Prevalence (%) of Selected Comorbidities by NYHA Class



Conclusions

Compared to symptomatic HF patients (NYHA Class II-IV), asymptomatic patients (NYHA Class I) had a lower but still notable prevalence of comorbidities, medication use, and hospitalization, highlighting the need to identify and manage these patients to see if progression to symptomatic HF can be prevented.

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