Ten year evolution of clinical characteristics and short-term outcome of patients admitted with heart failure

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Background/Introduction: Heart failure (HF) continues to be a leading cause of morbidity, decreased quality of life (QoL) and mortality worldwide. Contributing to decreased QoL is the high rehospitalization rate, which is often related to non-cardiac causes, highlighting the important multimorbidity of the HF population. Detailed clinical and outcome data for HF admissions in Belgium over time are only scarcely available.

Purpose: We aimed to evaluate and compare two groups of patients admitted with HF ten years apart, regarding clinical characteristics, comorbidities, use of HF medication and devices, as well as rehospitalization rate and all-cause mortality three months post-discharge.

Methods: This is a monocentric retrospective observational cohort study conducted in Belgium. Two groups of patients admitted for acute decompensated HF who were discharged alive were included and compared: 340 patients during 2011-2012 and 319 patients during 2021-2022.

Results: The two cohorts did not differ significantly regarding age (77.3 vs. 78.4 years), gender (47.4 vs. 44.5% women), number of patients with HF with reduced ejection fraction (47.4 vs. 48.6%) and NT-proBNP on admission (8514 vs. 7398 pg/mL). Similarly, comorbidities including diabetes, chronic obstructive pulmonary disease, peripheral artery disease, stroke and renal failure were comparable in both groups.

Concerning medical therapy at discharge, mineralocorticoid receptor antagonists (MRA) were used significantly more frequently in the latest cohort. However, there was no change in administration of beta-blockers or renin angiotensin aldosterone system antagonists. As part of the implementation of new therapies for heart failure with reduced ejection fraction, 29% of patients were prescribed sodium-glucose cotransporter-2 (SGLT-2) inhibitors, while sacubitril/valsartan was given in 13% of the cases. The use of internal defibrillators (ICD) and resynchronization devices (CRT) doubled from 2011-2012 to 2021-2022 (3.9 vs. 9.6%, p = 0.002). In-hospital length of stay decreased significantly over a ten-year period across all ejection fraction subgroups from 7 to 5 days (figure 1). The combined outcome of rehospitalization for HF and all-cause mortality three months post-discharge remained constant at approximately 20% (figure 2).

Conclusion: Clinical characteristics and comorbidities of patients admitted with acute decompensated HF did not change significantly between 2011 and 2022. Uptake of evidence-based medicine for HF increased, especially for MRA, SGLT-2 inhibitors and sacubitril/valsartan, as did the use of ICD and CRT, but still with considerable potential for improvement. Although in-hospital length of stay decreased significantly over time, rehospitalization rates for HF and all-cause mortality within 90 days post-discharge remained high and did not improve. These sobering results illustrate the need for continuing efforts to improve the care and outcome of HF patients.
Rehospitalization and all-cause mortality

Event free Survival

Number of days after discharge

2011-2012
2020-2021

p = ns