

data reported 2 decades ago indicated that heart failure was as 'malignant' as many common types of cancer (with the notable exception of lung cancer) and was associated with a comparable number of expected life-years lost. Whether this is also the case in more recent years is unknown.

Methods: In a nationwide cohort study including 5.123.193 patients seen in French hospitals in 2012 with at least 5 years of follow-up (or dying earlier), all patients with a first admission to any hospital with heart failure or cancer were identified. We assessed the incidence of all-cause death during follow-up (2.523.627 person-years). We analysed the outcome for the most common types of cancer specific to men and women and the results were then age-adjusted in men and in women.

Results: In 2012, 409.210 men had a hospitalisation with heart failure (n = 164.601) or cancer (n = 244.609). Similarly, 325.410 women were admitted with heart failure (n = 127.734), or cancer (n = 197.676).

Heart failure was associated with a worse survival rate than urologic cancer in men and a worse survival rate than breast cancer, gynaecologic cancer and gastrointestinal cancer in women (figure). On an age-adjusted basis, cancer was associated with a worse survival than heart failure in men except for urologic cancer (see adjusted hazard ratios in table). Cancer was associated with a worse age-adjusted survival than heart failure in women except for breast cancer.

Conclusion: Heart failure may be as 'malignant' as many common types of cancer in men and in women. However, it is possible that the prognosis of HF has improved compared to that of cancer in the 2 last decades since only breast cancer in women and urologic cancer in men had a better prognosis than heart failure in an age-adjusted analysis.

Distinct comorbidity clusters in patients with acute heart failure: data from RELAX-AHF-2

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Background: Multimorbidity (≥ 2 comorbidities) is frequent and associated with worse prognosis in patients with acute heart failure (AHF). The co-occurrence of comorbidities is often not random but follows specific patterns (clusters).

Purpose: We sought to identify multimorbidity subtypes in patients with AHF and investigate their associations with clinical outcome.

Methods: We classified 6.545 patients (26% HFpEF, defined as LVEF \geq 50%) from the prospective RELAX-AHF-2 trial into multimorbidity subgroups using latent class analysis (LCA). LCA, a probabilistic model for clustering, was performed in the poLCA package in the R statistical package. A wide-ranging list of comorbidities – atrial fibrillation (AF), coronary artery disease (CAD), stroke, chronic kidney disease (CKD), obesity, hypertension, hypothyroidism, hyperthyroidism, chronic obstructive pulmonary disease (COPD), peripheral arterial occlusive disease (PAVD), anaemia, hyperlipidaemia, depression, and diabetes mellitus (DM) – was assessed to identify group membership. We investigated the association between multimorbidity subgroups and diuretic response and the composite outcome of 180-day all-cause death or hospitalization for HF (HHF) or renal failure (RF).

Results: We identified five distinct, mutually exclusive, multimorbidity groups: "diabetic nephropathy" (1) (N = 1.189; more often men, high prevalence of CKD and DM), "ischemic" (2) (N = 973; more often men, ischemic HF aetiology), "elderly/AF" (3) (N = 1.635; oldest, high prevalence of AF), "metabolic" (4) (N = 1.525; obese, hypertensive, more often HFpEF), and "young" (5) (N = 1.223; youngest, few comorbidities). After adjusting for confounders, patients with the diabetic nephropathy (hazard ratio [HR] 1.72, 95% confidence interval [CI] 1.44–2.07), elderly/AF (HR 1.38, 95% CI 1.15–1.65), and metabolic groups (HR 1.33, 95% CI 1.11–1.59) had higher rates of the composite outcome than patients with the young group, primarily driven by differences in HHF or RF. Treatment allocation (placebo or Serelaxin) modified the associations of multimorbidity groups with clinical outcome (Pinteraction < 0.001). Serelaxin treated patients with the young phenotype were associated with a lower risk for all-cause mortality (HR 0.59, 95% CI 0.38–0.91). The type of HF (HFpEF or HFpEF) did not modify (Pinteraction > 0.1) the associations of multimorbidity groups with clinical outcome.

Conclusions: Comorbidities naturally clustered in 5 distinct patterns in RELAX-AHF-2, which show differences in clinical outcomes. These data highlight that the unique combination of comorbidities can drive adverse outcomes and treatment response in patients with AHF.

Distinct comorbidity clusters in patients with acute heart failure: data from RELAX-AHF-2

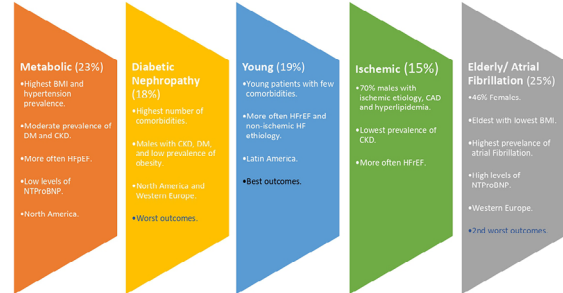


Fig 1. Concept figure summarizing the most important findings of this study. Abbreviations: CAD, coronary artery disease; CKD, chronic kidney disease; DM diabetes mellitus; BMI, body mass index; EF, ejection fraction; HF, heart failure; HFpEF, HF with preserved EF; HFpEF, HF with reduced EF.

Multimorbidity in patients with AHF

Clinical characteristics of patients with acute heart failure during the COVID-19 pandemic

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Introduction: Heart failure (HF) is the reason for the ever increasing number in hospitalization. Elderly age, comorbidities and currently ongoing COVID-19 pandemic result in fewer hospitalizations, more severe clinical presentation and more deaths in times of pandemic.

Aim: To compare the relations between different clinical parameters of 133 patients hospitalized at the Clinic for Cardiovascular Diseases, Clinical Hospital Centre Rijeka, Croatia in the period between January 1, 2021 and April 1, 2021. and cross-reference⁶ it with the data from the 150 patients in the same quarterly period in 2019. To determine heart-focused anxiety and anxiety symptoms, depressive symptoms and intolerance of uncertainty using standardized psychological questionnaire in patients hospitalized for HF in 2021.

Results: There were no statistically significant differences in age, gender, body mass index, NYHA class, heart rate and left ventricular ejection fraction between patients hospitalized during the 2021 pandemic compared to the 2019 pre-pandemic group. There was statistically significant higher blood pressure ($p < 0.01$) and more patients with diabetes mellitus ($p < 0.05$) at the time of the pandemic, while peripheral artery disease was statistically significantly more frequent before the pandemic ($p < 0.01$). Laboratory parameters between the two study groups regarding serum urea, creatinine, troponin and NT-proBNP concentrations and the estimated glomerular filtration rate were not statistically significantly different, except for sodium, which was statistically significantly higher at the time of the pandemic ($p = 0.046$). During the pandemic period 74 of the 133 hospitalized patients answered standardized psychological questionnaire. 20.3% patients had moderate and 5.4% severe anxiety (N = 19), also 28.4% had moderate depression and 10.8% moderately severe depression or severe depression (N = 29), while intolerance of uncertainty was found in 16.2% (N = 12) and cardiac anxiety in 18.9% (N = 14). There was no statistically significant difference in mortality for the two study periods ($p = 0.14$). Of the total number of patients treated for HF during the COVID-19 pandemic, 11 (8.3%) had a history of SARS-CoV-2 infection.

Conclusion: By comparing our two study groups we have found no statistically significant deterioration in most clinical parameters between the two groups, which indicates appropriate quality health care and preparedness of the health system for the hospitalized HF patients during the challenges posed by the pandemic. Anxiety and depression were not negligible in patients with HF hospitalised during the Covid-19 pandemic.