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ORIGINAL ARTICLE

# Clinical characteristics and prognosis of heart failure in elderly patients

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**KEYWORDS**
Heart failure;
Preserved ejection fraction;
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**Abstract**
*Objectives:* The aim of this study was to assess prevalence, clinical characteristics, and prognosis in elderly patients with heart failure with preserved ejection fraction (HFPEF) compared to patients with heart failure with reduced ejection fraction (HFREF) who were followed in an internal medicine unit.
*Methods:* In this retrospective observational study, the sample consisted of 301 patients followed in an internal medicine referral unit between January 2007 and December 2010. All patients were checked to determine their vital status on 31 December 2012. Survival was analyzed using Kaplan-Meier curves, and compared using the log-rank test.
*Results:* Of the 301 patients, 165 (54.8%) were women. In the 263 cases (87.4%) who underwent echocardiographic assessment, 190 (72.2%) had HFPEF and 73 (27.8%) had HFREF. Mean age was similar in the two groups (80.1 and 79.9 years; p=0.905), with a predominance of women in the HFPEF group (60.5% women, 42.5% men; p=0.025). The main etiology was hypertensive heart disease in the HFPEF group. Regarding treatment, more beta-blockers were administered in the HFREF group. No statistically significant differences were observed between the groups in terms of cardiovascular risk factors, comorbidities, NYHA functional class, or mortality.
*Conclusion:* Clinical characteristics were similar for both HFPEF and HFREF patients. Women were predominant in the HFPEF group, as was hypertensive etiology. No significant differences in mortality were observed between the groups.


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**PALAVRAS-CHAVE**
Insuficiência cardíaca;
Insuficiência cardíaca com fração de ejeção preservada;
Insuficiência cardíaca com fração de ejeção dimuída;
Idosos;
Sobrevivência

**Características clínicas e prognóstico da insuficiência cardíaca em doentes idosos**

**Resumo**
*Introdução e objetivos:* O objetivo do estudo é analisar a prevalência, as características clínicas e o prognóstico dum grupo de doentes idosos com diagnóstico de insuficiência cardíaca com fração de ejeção preservada (IC/FEP) seguidos numa consulta especializada e compará-los com os doentes que apresentam fração de ejeção dimuída (IC/FED).
*Materiais e métodos:* Estudo retrospetivo observacional incluindo 301 doentes, seguidos numa consulta especializada de Medicina Interna, no período entre janeiro de 2007 e dezembro de 2010 cujo *status* vital foi determinado a 31 de dezembro de 2012. Para a análise de sobrevivência foram utilizadas as curvas de Kaplan-Meier e na comparação foi utilizado o teste de Log-rank.
*Resultados:* 301 doentes foram estudados, sendo 165 (54,8%) do sexo feminino. Nos 263 (87,4%) casos nos quais foi realizado o estudo ecocardiográfico, 190 (72,2%) correspondiam a doentes com diagnóstico de IC/FEP e 73 (27,8%) de IC/FED. A idade média foi similar nos dois grupos (80,3 e 79,9 anos, p 0,905), sendo maior a percentagem de mulheres (60,5% face a 42,5%, p 0,025) e com predomínio de etiologia hipertensiva no grupo com IC/FEP. Quanto ao tratamento, o uso de betabloqueantes foi maior no grupo com IC/FED. Não foram encontradas diferenças significativas entre ambos os grupos relativamente a fatores de risco cardiovascular, comorbilidades, classe funcional ou mortalidade.
*Conclusão:* As caraterísticas clínicas dos doentes com IC/FEP e com IC/FED são similares. No grupo de IC/FEP predominam os doentes do sexo feminino e a etiologia hipertensiva. Não foram observadas diferenças na mortalidade entre ambos os grupos.


## Introduction

Heart failure (HF) continues to be a major burden on public health systems, with high morbidity and mortality and spiraling costs, which account for 1–2% of the annual health budget of most developed nations.[1] In Spain, it is the third leading cause of death from cardiovascular disease; ischemic heart disease and cerebrovascular disease are the leading causes, with estimated mortality of 4.2% and 4.4% for the years 2010 and 2011, respectively. Moreover, HF is the primary cause of hospitalization in patients aged 65 or over, accounting for 2–2.5% of the total number of annual hospital admissions.[2] Furthermore, the readmission rate following a first hospitalization for HF is high, increasing from 38% in the first month[3] to 43% at 6–12 months.[4]

The prevalence of HF is on the rise due not only to the improved prognosis of patients with ischemic heart disease (IHD) or hypertension, but also to the progressive aging of the population. The census for the Spanish population for the last two decades showed an increase of nearly 50% in life expectancy of 1–2 years in the population aged from 77 to 87 years.[2] Moreover, the prevalence of HF is estimated at 6.8% in people aged 45 years or older, and 16.1% in people older than 75,[5] and it is precisely in the latter population that the incidence and prevalence of heart failure with preserved ejection fraction (HFPEF) rises.[6]

Though the survival of HF patients has improved in recent years, prognosis continues to be poor, with 50% mortality five years after diagnosis.[7] Most clinical trials are on patients with heart failure with reduced ejection fraction (HFREF), and it is in this population that current therapies have shown to improve life expectancy.[8] In contrast, the findings on HFPEF remain inconclusive, which underscores the need for further studies on these patients, who are the most prevalent among elderly populations, as most internal medicine departments can attest.[9]

Few studies have compared the clinical characteristics of elderly patients with HFREF in comparison to those with HFPEF. The aim of this study was to assess prevalence, clinical characteristics, and medium-term prognosis of a group of elderly HFPEF patients in comparison to elderly HFREF patients who were followed in an internal medicine unit.

## Methods

This was a retrospective observational study of a cohort of 301 patients who were followed in an internal medicine unit HF unit in a tertiary referral hospital in north-eastern Spain with an estimated catchment population of 400 000.[10] Patients were consecutively included for study between January 1, 2007 and December 31, 2010, and their vital status was checked to determine whether they were alive on December 31, 2012. Patients were referred from primary health care, emergency departments, and cardiology and internal medicine wards.

Only patients aged 18 years or older were included in the study. HF was diagnosed according to the clinical practice guidelines of the European Cardiology Society[11] and the American College of Cardiology/American Heart Association,[12] based on the presence of HF symptoms and signs.

At the time of inclusion and during follow-up, data were collected on sociodemographic, clinical, laboratory,