



Determinants of survival and hospitalization in older, heart failure patients receiving home healthcare



M.A. Muñoz^{a,b,*}, J. Real^b, J.L. Del Val^{a,b}, E. Vinyoles^{a,b}, X. Mundet^{a,b}, E. Frigola-Capell^b, M.A. Llauger^{a,b}, F. Orfila^{a,b}, M. Domingo^{b,c}, J.M. Verdú-Rotellar^{a,b}

^a Primary Healthcare Research Unit of Barcelona, Institut Català de la Salut, Barcelona, Spain

^b Primary Healthcare University Research Institute IDIAP-Jordi Gol, Barcelona, Spain

^c Cardiology Service and Heart Failure Unit, Hospital Universitari Germans Trias i Pujol, Badalona, Spain

ARTICLE INFO

Article history:

Received 2 October 2015

Received in revised form 16 December 2015

Accepted 9 January 2016

Available online 13 January 2016

Keywords:

Older

Heart failure

Home healthcare

Primary care

Mortality

Hospital admission

ABSTRACT

Introduction: Since reported evidence is both scarce and controversial, the objective of this study is to determine the risk factors involved in the prognosis of older patients with heart failure (HF) receiving home healthcare from primary care professionals.

Methods: Retrospective cohort community study was carried out in 52 primary healthcare centers in Barcelona (Spain). A follow-up was performed between January 2009 and December 2012 with 7461 HF patients aged >64 years. Information was obtained from primary care electronic medical records containing clinical data, functional and cognitive status, total mortality, and hospital admissions for cardiovascular events.

Results: Mortality and hospitalization during follow-up were higher in older, HF patients who received home healthcare than those who did not (HR 1.39, 95% CI 1.22–1.58 and 1.92 95% CI 1.72–2.14, respectively). The most relevant determinants for mortality were male gender (HR 1.40, 95% CI 1.10–1.79), previous hospital admission for HF (HR 1.29 95% CI 1.05–1.60), and severe dependence in activities for daily living (ADL) (HR 1.33, 95% CI 1.06–1.67). In contrast, severely dependent ADL patients were not more frequently hospitalized as a consequence of cardiovascular events (0.97, 95% CI 0.77–1.23).

Conclusions: Due to their greater comorbidity and age, mortality and hospitalization in patients requiring home healthcare were higher than those who did not. Among the HF patients receiving home care, mortality and hospital admissions were higher in men, older patients, and in those previously hospitalized for HF. Severe dependence in ADL determined a higher mortality but was not related to increased hospital admission rates.

© 2016 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

It is well known that heart failure (HF) prevalence is higher in the elderly, rising to 5% in the population aged 65–75 years and 10–20% in those older than 80 years [1,2]. The causes are progressive population aging, better coronary heart disease and cardiovascular comorbidity survival, and an improvement in HF treatment in recent decades [3].

Over the past 50 years, life expectancy has increased 10 years for both genders in the European Union: in 2013 it was 83.3 years for women and 77.8 years for men. Mortality and morbidity in chronic HF are directly related to age [4]. In fact, this disease represents the first cause of hospital admission in individuals older than 64 years and is the third cause of in-hospital death [5].

In addition, since most patients suffering from HF have other comorbidities, it is expected that many of them will need home healthcare. It has been reported that almost one in ten non-institutionalized individuals aged ≥65 requires assisted personal attention [6]. This is a temporal or permanent situation that can be characterized by difficulties with physical mobility and influenced through adverse social determinants [7].

When, as a consequence of becoming chronically ill or disabled, or recuperating after a recent hospital discharge, older individuals find that outpatient attendance implies considerable effort, home healthcare programs allow those with special needs to remain in their homes [8,9].

It has been reported that elderly people receiving home healthcare have increased mortality [10]. In order to deal with this situation some programs have been carried out with community-dwelling, frail, older people [11] and, specifically, HF patients at hospital discharge [12].

Although the engagement of primary care professionals is relevant in the management of such patients [13], no specific analysis has been carried out to ascertain their prognosis when they receive home care.

* Corresponding author at: Primary Care Research Unit of Barcelona, Institut Català de la Salut, IDIAP-Jordi Gol, Departament de Salut|Generalitat de Catalunya, Sardenya 375, Entlo, 08025 Barcelona, Spain.

E-mail address: mamunoz.bcn.ics@gencat.cat (M.A. Muñoz).

Since the population requiring home health care suffers from a higher comorbidity, it is expected to find higher rates of hospital admissions and mortality in this group.

The aim of our study is to identify the profile of older HF patients receiving home care from general practitioners and nurses, and to assess the determinants of mortality and hospitalization.

2. Methods

2.1. Study design and population

A retrospective cohort study based on clinical information from the SIDIAP database (Information System for the Development of Research in the Primary Care System) regarding patients attended in the 52 primary healthcare centers of the Institut Català de la Salut in Barcelona (Spain) [14]. Information about hospital admissions was obtained from a specific database known as CMBD-AH (Conjunto Mínimo Básico de Datos de Altas Hospitalarias). The study took place from 1st January, 2009 to 31st December, 2012.

2.2. Inclusion criteria

All adult patients aged >40 years living in Barcelona (Spain) with an HF diagnosis (International Classification Diseases (ICD-10: I50) recorded in their primary electronic medical records on 31st December, 2012, were included, and a sub-population >64 years was selected for the present study.

In order to analyze outcomes among patients attended in home healthcare programs, those registered as Z74 in the ICD-10 (need for assistance at home and no other household member able to render care) were extracted from the database.

2.3. Exclusion criteria

Individuals who had not used the public primary health care services during the period of the study.

2.4. Outcome variables

Between 1st January, 2009, and 31st December, 2012, patients underwent a follow-up to the time of their hospital admission as a consequence of a cardiovascular event (HF decompensation, myocardial infarction or unstable angina) or mortality.

2.5. Other variables

These included socio-demographic variables (age, gender), comorbidity (hypertension, diabetes, coronary heart disease, atrial fibrillation, stroke, depression, chronic obstructive pulmonary disease, renal failure), hospital admission in the year prior to inclusion, participation in home care health programs, dependence index, cognitive impairment, and HF treatment.

ADL dependence was measured by the Barthel index and categorized as severely dependent if the score was ≤ 60 points [15]. To evaluate cognitive impairment, the Pfeiffer test was considered when the score of mistakes made by the patient was ≥ 3 [16]. A Spanish version of both tests has been previously validated and they are regularly administered to home healthcare populations.

2.6. Sample size

Data were gathered from the registries completed by the general practitioners and nurses from the 52 primary healthcare centers in Barcelona (Spain). Out of an overall population of 1,261,171 individuals attended in these centers, a sample of 8176 HF patients was obtained, 7461 were older than 64 years.

2.7. Statistical analysis

Data are expressed as percentages for categorical variables and median (standard deviation) for continuous ones. Baseline homogeneity of variables according to HF and previous hospital admission was analyzed. Chi square, Student-t test, and ANOVA were employed to analyze the associations at the univariate analysis.

Cumulate incidence was calculated both for mortality and hospital admission as a consequence of a cardiovascular event during follow-up. To evaluate the effect of the different variables on mortality and hospital admission among the population receiving home healthcare, crude and adjusted Cox regression models were performed. Since mortality and hospital admission may preclude each other, competing-risks regression models, according to the method of Fine and Gray (1999), were performed.

p values < 0.05 were considered statistically significant. Statistical analysis was performed with Stata Statistical Package (StataCorp. 2011. *Stata Statistical Software: Release 12*. College Station, TX: StataCorp LP).

2.8. Ethics

The study protocol was approved by the ethics committee of the Primary Healthcare University Research Institute IDIAP-Jordi Gol. Confidentiality of data was guaranteed throughout the study and any data available for research purposes were anonymous.

3. Results

3.1. Patient characteristics

The cohort consisted of 7461 HF patients ≥ 65 years, 58.9% were women. Mean age was 80.6 years (standard deviation 7.1).

Almost one third of the patients were registered as receiving home healthcare ($n = 2211$) (29.6%). Median follow-up was 15.8 months (interquartile range, 6.5–28.9). With respect to outcomes, a total of 1542 patients (20.7%) died during follow-up and 2051 (27.5%) were admitted to hospital as a consequence of cardiovascular events. Comorbidity was present in 92.3% of the patients. Up to 37.8% had three or more concomitant conditions, the most frequent being hypertension (78.6%) and atrial fibrillation (38.2%). History of coronary heart disease was found in 26.2% of the patients.

Patients receiving home healthcare presented a higher probability of dying (Hazard Ratio 1.39, 95% confidence interval 1.22–1.58) and of being hospitalized for cardiovascular events (1.91, 95% confidence interval 1.71–2.14), after adjusting for sociodemographic profile (age, gender), previous HF hospital admission, cardiovascular comorbidity (hypertension, diabetes, coronary heart disease, atrial fibrillation, previous stroke, peripheral artery disease), any other comorbidity (chronic pulmonary obstructive disease, chronic nephropathy, depression), dependency in activities for daily living, and cognitive impairment.

3.2. Characteristics of patients receiving home healthcare

Patients receiving home healthcare were older and more frequently women, ADL dependent, and cognitively impaired. They also had higher comorbidity and had been hospitalized the year prior to inclusion in the study as a consequence of HF (Table 1). Survival curves showed that both mortality and hospital admissions during follow-up were significantly higher in the group of patients receiving home healthcare, after adjusting for potential confounders such as comorbidity, HF treatment, and dependence index (Fig. 1).

Among the cohort of patients receiving home healthcare, subjects were analyzed individually in order to ascertain the determinants of mortality and cardiovascular hospitalization during follow-up.

Multivariate adjusted analyses in this population showed that mortality during follow-up was higher in older men, those who had been

Download English Version:

<https://daneshyari.com/en/article/5964854>

Download Persian Version:

<https://daneshyari.com/article/5964854>

[Daneshyari.com](https://daneshyari.com)