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Short-term reconsultation, hospitalisation, and death rates after discharge from the emergency department in patients with acute heart failure and analysis of the associated factors. The ALTUR-ICA Study☆

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ABSTRACT

Background and objectives: The aim of this study was to define the following in patients with acute heart failure (AHF) discharged directly from accident and emergency (A&E): rates of reconsultation to A&E and hospitalisation for AHF, and all-cause death at 30 days, rate of combined event at 7 days and the factors associated with these rates.
Patients and method: The study included patients consecutively diagnosed with AHF during 2 months in 27 Spanish A&E departments who were discharged from A&E without hospitalisation. We collected 43 independent variables, monitored patients for 30 days and evaluated predictive factors for adverse events using Cox regression analysis.
Results: We evaluated 785 patients (78 ± 9) years, 54.7% women). The rates of reconsultation, hospitalisation, and death at 30 days and the combined event at 7 days were: 26.1, 15.7, 1.7 and 10.6%, respectively. The independent factors associated with reconsultation were no endovenous diuretics administered in A&E (HR 2.86; 95% CI 2.01–4.04), glomerular filtration rate (GFR) < 60 ml/min/m^2 (1.94; 1.37–2.76) and previous AHF episodes (1.48; 1.02–2.13); for hospitalisation these factors were no endovenous diuretics in A&E (2.97; 1.96–4.48), having heart valve disease (1.61; 1.04–2.48), blood oxygen saturation at arrival to A&E < 95% (1.60; 1.06–2.42); and for the combined event no endovenous diuretics in A&E (3.65; 2.19–6.10), GFR < 60 ml/min/m^2 (2.22; 1.31–3.25), previous AHF episodes (1.95; 1.04–3.25), and use of endovenous nitrates (0.13; 0.02–0.99).
Conclusion: This is the first study in Spain to describe the rates of adverse events in patients with AHF discharged directly from A&E and define the associated factors. These data should help establish the most adequate approaches to managing these patients.

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◊ The other members of the ICA-SEMES group are listed in Appendix A.

Tasas de reconsulta, hospitalización y muerte a corto plazo tras el alta directa desde Urgencias de pacientes con insuficiencia cardiaca aguda y análisis de los factores asociados. Estudio ALTUR-ICA

Palabras clave:
Insuficiencia cardiaca aguda
Mortalidad
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RESUMEN

Fundamento y objetivos: Definir en pacientes con insuficiencia cardiaca aguda (ICA) dados de alta directamente desde Urgencias: las tasas de reconsulta a Urgencias y hospitalización por ICA y de muerte por cualquier causa a 30 días; la tasa de estos 3 episodios combinados a 7 días; y los factores asociados con tales episodios.
Pacientes y método: Incluimos pacientes diagnosticados consecutivamente de ICA durante 2 meses en 27 servicios de urgencias hospitalarios (SUH) dados de alta sin hospitalización. Recogimos 43 variables independientes, con seguimiento a 30 días, e investigamos los factores predictivos para episodios adversos mediante regresión de Cox.
Resultados: Evaluamos 785 pacientes (78 ± 9 años, 54,7% mujeres). Las tasas de reconsulta, hospitalización y mortalidad a 30 días, y de episodio combinado a 7 días fueron de 26,1, 15,7, 1,7 y 10,6%, respectivamente. Los factores independientes asociados a reconsulta fueron no administrar diuréticos intravenosos en urgencias (HR 2,86; IC 95% 2,01-4,04), tasa de filtrado glomerular (TFG) < 60 ml/min/m^2 (1,94; 1,37-2,76) y episodios previos de ICA (1,48; 1,02-2,13); los asociados a hospitalización fueron no administrar diuréticos intravenosos (2,97; 1,96-4,48), tener cardiopatía valvular (1,61; 1,04-2,48) y saturación arterial de oxígeno a la llegada al SUH < 95% (1,60; 1,06-2,42); y los asociados a episodio combinado, no administrar diurético intravenoso (3,65; 2,19-6,10), TFG < 60 ml/min/m^2 (2,22; 1,31-3,25), episodios previos de ICA (1,95; 1,04-3,25) y uso de nitratos intravenosos (0,13; 0,02-0,99).
Conclusión: Presentamos por primera vez en España las tasas de episodios adversos en pacientes con ICA dados de alta directamente desde los SUH y definimos los factores asociados, lo cual debería ayudar a determinar acciones para mejorar la selección de los pacientes candidatos al alta directa desde Urgencias.

Introduction

Acute heart failure (AHF) is a frequent diagnosis in patients who consult in the hospital emergency departments (HED). Guidelines for the treatment of these patients are promulgated by different societies.[1–3] Recently, various scientific societies involved in the care of this syndrome in Spain have developed a guide.[4] Although the treatment to be administered in any AHF clinical scenario is widely agreed upon, the profile of the patient who can be discharged directly from the Emergency Department after diagnosis, treatment and a brief period of observation is still not clearly defined. European professionals from different specialities recently developed two consensus documents that delved into the importance of correctly selecting these patients and the need to define the standards that should be achieved in this subgroup of patients by individual HEDs (Hospital Emergency Departments).[5,6] In Spain, figures show that around 25% of patients with AHF are discharged from the Emergency Department without hospital admission,[7] and in other countries these percentages fluctuate between 16% in the United States[8] and 36% in Canada.[9] However, the adverse events that occur in these patients and the associated factors have not been sufficiently investigated. A preliminary study made by our group showed that the 30-day reconsultations in the Emergency Department of a group of 259 patients who had been discharged directly from the Emergency Department were related to an impaired functional capacity, whereas the precedent of arterial hypertension and high systolic blood pressure (SBP) in the Emergency Department (>160 mmHg) was associated with a lesser reconsultation.[10] However, said study did not assess whether the reconsultation to the Emergency department led to hospital admission. On the other hand, many emergency professionals are of the opinion that it is especially important to investigate the adverse events that occur during the first seven days, because when these occur within this short period of time, a causal relationship could potentially exist between that episode and the decision to discharge the patient. To answer these questions, the present study was proposed in which the endpoints were: (1) to know the rates of emergency department reconsultation, hospitalisation and death within 30 days following the direct discharge from the Emergency Department of patients with AHF; (2) to know the rate of a combined episode (for these three individual episodes) seven days after discharge, and (3) to define the factors associated with such episodes.

Method

A short-term prognosis study of patients discharged directly from the emergency department with the diagnosis of AHF (ALTUR-ICA study) was made using the data contained in the EAHFE registry (Epidemiology of Acute Heart Failure in Emergency Departments). This registry currently contains 9078 patients consecutively diagnosed with AHF in 34 Spanish HEDs collected during 4 inclusion periods: the first (EAHFE-1) from 15 April to 15 May 2007 (one month, 10 HEDs, 948 patients); the second (EAHFE-2) was performed between 1 June and 30 June 2009 (one month, 20 HEDs, 1483 patients); the third (EAHFE-3) between 1 November 2011 and 31 December 2011 (2 months, 25 HEDs, 3414 patients), and the fourth (EAHFE-4), between 1 January and 28 February 2014 (2 months, 27 HEDs, 3233 patients). The systematic inclusion of patients in the EAHFE Registry and the variables included in this registry have been described extensively in previous works.[7,11,12] To summarise, the diagnosis of the patient is based on the diagnostic criteria in force at the time of each screening and no intervention is performed on the patient. The patients are treated entirely at the discretion of the emergency care physicians, both with regard to