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REVIEW ARTICLE

A closer look at acute heart failure: Putting Portuguese and European data into perspective

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Abstract
Introduction and Objectives: Acute heart failure (AHF) is a heterogeneous clinical syndrome requiring urgent therapy. The prognosis is poor after the index hospitalization, with a high risk for rehospitalization and early death. The costs of managing AHF are thus increasing rapidly. A literature review was performed to gather and compare data on prevalence and treatment and to identify gaps in AHF management, based on European and Portuguese studies.
Methods: A literature search from 1995 to 2014 was conducted in selected databases (BIOSIS Previews, EMBASE and Ovid MEDLINE).
Results and Discussion: Seven Portuguese and nine European studies were analyzed. The mean age of AHF patients was ≥65 years and 30–50% were women. Coronary artery disease (42.3% vs. 61.9%) and hypertension (53.3% vs. 76.7%) were identified as primary etiologies in Europe and in Portugal. Similar proportions of heart failure with preserved ejection fraction were found in the Portuguese (19.9–44.7%) and European (32.8–39.1%) studies. Overall, all-cause mortality rates were comparable (six months: 9.3–25.5% vs. 13.5–27.4%; one year: 15.9–31% vs. 17.4–46.5%), as was in-hospital mortality (5.5–14% vs. 3.8–12%) in Portuguese and European studies, respectively. Length of stay was comparable. The studies were performed in very different hospital settings and data on treatment were scarce.
Conclusions: Gaps were identified in treatment and clinical pathways of patients with AHF. Based on the results of this review, collection and investigation of data on the disease and treatment solutions, training in disease management, and improved organization of healthcare should be the subject of further investment.

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PALAVRAS-CHAVE
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Um olhar sobre a insuficiência cardíaca aguda: dados portugueses e europeus em perspetiva

Resumo
Introdução e objetivos: A insuficiência cardíaca aguda (ICA) é uma síndrome heterogénea que requer intervenção terapêutica urgente. O prognóstico pós-hospitalização é crítico existindo risco aumentado de reospitalização e morte precoce. Consequentemente, os custos da gestão de ICA aumentam exponencialmente. De forma a comparar dados de prevalência e tratamento e identificar lacunas na gestão de ICA, foi realizada uma revisão de literatura.
Métodos: Realizou-se uma pesquisa bibliográfica entre 1995-2014 recorrendo a termos específicos e bases de dados selecionadas (BIOSIS *Previews*, EMBASE, *Ovid* MEDLINE).
Resultados e discussão: Sete estudos portugueses e nove europeus foram considerados. A idade média foi ≥65 anos, sendo 30-50% mulheres. A etiologia primária, na Europa e em Portugal, foram a doença coronária (42,3-61,9%) e a hipertensão (53,3-76,7%). Doentes com insuficiência cardíaca com fração de ejeção preservada nos estudos portugueses (19,9-44,7%) e europeus (32,8-39,1%) foram semelhantes. As taxas de mortalidade por todas as causas foram igualmente comparáveis (seis meses: 9,3-25,5% *versus* 13,5-27,4%; um ano: 15,9-31% *versus* 17,4-46,5%, assim como a taxa de mortalidade intra-hospitalar (5,5-14% *versus* 3,8-12%) nos estudos portugueses e europeus, respetivamente. A duração do internamento foi comparável. Os estudos foram realizados em realidades hospitalares distintas. Os dados da gestão farmacológica são limitados.
Conclusões: Foram identificadas lacunas no tratamento e percurso clínico do doente com ICA. Com base nos resultados desta revisão, a geração e investigação de novos dados sobre a doença e soluções de tratamento, treino na gestão da doença, e melhoria na organização dos cuidados de saúde deverão ser áreas de maior investimento.

List of abbreviations

ACS	acute coronary syndrome
AF	atrial fibrillation
AHF	acute heart failure
CAD	coronary artery disease
CCU	cardiac care unit
CDHF	chronic decompensated heart failure
CHF	chronic heart failure
CKD	chronic kidney disease
COPD	chronic obstructive pulmonary disease
ECG	electrocardiogram
EF	ejection fraction
ESC	European Society of Cardiology
ESICM	European Society of Intensive Care Medicine
HF	heart failure
HFpEF	heart failure with preserved ejection fraction
HFrEF	heart failure with reduced ejection fraction
ICU	intensive care unit
IV	intravenous
LOS	length of stay
NYHA	New York Heart Association

Introduction

Heart failure (HF) is a major public health problem worldwide and is associated with high mortality, morbidity, and healthcare costs. The overall prevalence of HF in the US is 2.4% of the adult population, while the corresponding rates in Europe range between 2% and 4.3%, rising to 10–16.1% among individuals aged ≥70 years.[1–3] Acute heart failure (AHF) is a complex pathological entity, defined by the European Society of Cardiology (ESC) guidelines as the rapid onset of, or change in, symptoms and signs of HF.[4] In most cases, AHF arises as a result of deterioration in patients with a previous diagnosis of HF (HF with either reduced ejection fraction [HFrEF] or preserved ejection fraction [HFpEF]).[4] The prognosis of patients with AHF is poor, with high rates of rehospitalization and mortality. In the US nearly 25% of patients with AHF are rehospitalized within 30 days of the index presentation.[5,6] In Europe, approximately 44–50% are rehospitalized within one year of an acute episode,[3,7] with significant rates of in-hospital and one-year mortality (6.7%[8] and 17.4–21%,[7,9] respectively). Long-term all-cause mortality is also very high: nearly 50% of patients with a diagnosis of HF will die within five years.[10] A prospective analysis also shows that the rate of HF deaths can rise to 23% at 30 days.[11] This has prompted medical societies, researchers, policy makers and the pharmaceutical industry to focus their efforts on consolidating and analyzing evidence and developing innovative solutions for the treatment of patients with AHF.

Despite the advances seen in the treatment of chronic heart failure (CHF) over the past few years, the management of patients with AHF, including classification, diagnosis and treatment, has not changed significantly.[3] This can be attributed, at least in part, to the wide heterogeneity