Original research article

Comparison of hospitalized and ambulatory patients with heart failure in the Czech Republic and Europe. Data from the ESC Heart Failure Long-Term Registry

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ABSTRACT

Introduction: The ESC Heart Failure Long-Term Registry (ESC-HFLTR) is a prospective observational study which takes place in 211 cardiology centres of 21 European and Mediterranean countries, members of the European Society of Cardiology.
Aim: To compare basic demographic and clinical characteristics of both, the patients hospitalized for acute heart failure and the patients observed in outpatient clinics for chronic heart failure in the Czech Republic with published European-wide data.
Methods: Altogether 692 consecutive patients were included in the Czech part of ESC-HFLTR (5.6% of the whole registry) from May 2011 to April 2013. These patients were either admitted to hospital or examined in the outpatient clinic for HF during one predefined day of the week. The basic characteristics of 160 hospitalized (25.3%) and 532 ambulatory (74.7%) patients were analysed statistically, compared with each other and finally contrasted with available data from the whole ESC-HFLTR.
Results: Czech in-hospital patients were generally older than the ambulatory patients with HF (73 vs. 66 years; $p < 0.001$) and were less frequently men (62.5 vs. 75.7%). They had also significantly higher incidence of comorbidities. On the contrary, the outpatients underwent more often pacemaker implantation and coronary revascularization than hospitalized patients. The dominant HF aetiology was ischaemic in both groups. The HF with preserved

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ejection fraction was more frequently represented among the hospitalized HF patients. On the other hand, more ambulatory patients had dilated cardiomyopathy as the primary cause of HF.

In comparison with the data from the whole ESC-HFLTR Czech HF patients in both groups had significantly higher body weight, systolic blood pressure and higher incidence of comorbidities. In addition, they had more frequently implanted a pacemaker.

Conclusion: Czech HF patients had worse cardiovascular risk profile as well as higher incidence of comorbidities compared to the patients from the whole ESC-HFLTR.

Introduction

Prevalence of chronic heart failure (HF) in general population is about 1–2%. However, it substantially rises above the age of 75 when it reaches over 8% and is one of the most frequent causes of morbidity and mortality in this population [1]. Every year, approximately 40,000 new cases of HF are diagnosed in the Czech Republic [2]. Randomized clinical trials provide relatively detailed information about basic characteristics of specific HF patient groups. Nevertheless, these patient groups are often highly selected. For the proper interpretation of clinical study results there is a need of more information on the whole HF population, from which these patients were chosen. International epidemiological studies brought further evidence to this topic [3–5] but these trials concerned rather for prognosis, therapy and adherence to current guidelines than for clinical characteristics of both, hospitalized and ambulatory HF patients. Moreover, there is a lack of national data, which would describe the Czech population of HF patients and how they differ compared to the European one.

The European Heart Failure Long-Term Registry (ESC-HFLTR) gathered information from 21 European and Mediterranean countries to observe how the European Society of Cardiology (ESC) recommendations regarding pharmacological as well as non-pharmacological treatment of HF are adopted to clinical practice [3]. With the aim to obtain national comparative data on basic demographic and clinical characteristics of patients either hospitalized for acute HF or observed in outpatient clinics for chronic HF we analysed data from the Czech part of the ESC-HFLTR and compared it subsequently with the information from the whole registry.

Methods

Study design

The ESC-HFLTR is a prospective multicentre observational study which gathers information on ambulatory as well as hospitalized HF patients from 211 cardiology centres in 21 European and Mediterranean member countries of the European Society of Cardiology. The patients were enrolled into the registry during one day per week for 24 months. The main goal of the international survey was to evaluate how HF treatment guidelines are incorporated to clinical practice. The Czech part of the ESC-HFLTR consisted of seven cardiology centres from which six were university hospitals and one was community hospital. Basic demographic and clinical data acquired from the Czech part of the ESC-HFLTR were analysed separately. At first, comparison of the hospitalized and the outpatient part of Czech cohort was made. At second, the data on the Czech HF patients were contrasted with the published data from the whole registry [3].

Study population

One predefined day in the week during 2-year period all patients with chronic HF seen by the cardiologists in the outpatient clinics, as well as those admitted to hospital for either acute, pre-existing, or new onset of HF with the need of intravenous therapy were included into the study. The consecutive patients were chosen according to clinical judgement of attending physicians. No specific inclusion/exclusion criteria existed with the exception of the patient's age higher than 18 years. The whole survey was approved by The Czech Society of Cardiology.

Statistical analysis

Continuous variables are presented as medians and interquartile range (IQR). Comparisons between continuous variables were made using the Student unpaired t-test. Categorical variables are expressed as percentage and compared by χ^2 test. The value of $p < 0.05$ was considered to be significant. All calculations were performed using commercially available statistical software (STATISTICA Cz 12, StatSoft, Czech Republic).

Results

Czech hospitalized vs. ambulatory heart failure patients

From May 2011 to April 2013 altogether 692 patients were enrolled into the study. Of them 160 (23.1%) were hospitalized for acute HF, while 532 (76.9%) were examined for chronic HF in the outpatient setting. The Czech in-hospital patients were generally older than the ambulatory patients (73 vs. 66 years; $p < 0.001$) and were less frequently men (62.5 vs. 75.7%; $p < 0.001$). They also had significantly higher incidence of comorbidities such as atrial fibrillation (52.6 vs. 41.9%;