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Time-course of depressive symptoms in patients with heart failure

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ABSTRACT

Background: It is unclear how depressive symptoms in patients with heart failure develop over time and whether this trajectory of depressive symptoms is associated with hospital admission and prognosis.
Aim: To describe the time-course of depressive symptoms and determine the relationship with hospitalisation and mortality.
Method: Data was analysed using 611 patients with completed CES-D questionnaires at baseline and at 18 months. Data on hospitalisation was collected 18 months after discharge and data on mortality was collected 18 and 36 months post-discharge.
Results: A total of 140 (61%) of the 229 patients with depressive symptoms at discharge had recovered from depressive symptoms after 18 months whereas 71 (18%) of the 382 non-depressed developed depressive symptoms and 89 (39%) of the 229 depressed remained depressed. Patients with recently (i.e. during the last 18 months) developed depressive symptoms showed a significantly higher risk for cardiovascular hospitalisation (HR 1.7, 95% CI 1.1–2.6, $P = .016$). After 36 months, patients with developed depressive symptoms after discharge were at a higher risk of all-cause mortality (HR 2.0, 95% CI 1.2–3.5, $P = .012$) and there was a trend towards a higher risk of all-cause mortality in patients with ongoing depressive symptoms (HR 1.7, 95% CI 0.98–3.1, $P = .056$).
Conclusion: A significant proportion of patients with HF, who were reported depressive symptoms at discharge recovered from depressive symptoms during the following 18 months. However, patients who remained having depressive symptoms or patients who developed depressive symptoms had a worse prognosis.

Introduction

Heart failure (HF) is a clinical syndrome that is increasing in incidence worldwide. It results in high morbidity and mortality, and a lower five year survival rate than many common forms of cancer such as breast and prostate cancer [1]. Major depression and depressive symptoms are common in patients with HF and significantly more frequent compared to an age and gender matched population [2]. It is estimated that 16%–38 % of patients with HF have depressive symptoms, depending on the type of assessment diagnostic instruments used [3]. The presence of depressive symptoms, even in the absence of a confirmed diagnosis of major depressive disorder, increases the risk of non-compliance [4,5], delay in seeking hospital care [6], higher usage of health care resources and clinical events [7,8]. In addition, the presence of depression may also affect the impact of disease management programs, as these interventions may not be as effective in depressed patients [9].

Despite these adverse outcomes of depression in HF patients, only a few trials have been published that address treatment and the results are inconclusive [10,11]. In the large scaled SADHART-CHF study (n = 469), treatment with selective serotonin re-uptake inhibitor (SSRI) was not favourable compared to placebo regarding reductions in depressive symptoms as well as in long-term follow-up end points [10]. In a small pilot study (n = 36), however, SSRI improved depressive symptoms and general health perceptions, compared with placebo [11].

Others have shown that changes in depressive symptoms are associated to poorer outcomes. In patients with HF (n = 147) an increase in Beck Depression Inventory score (BDI) from baseline to 1-year follow-up was associated with an increased number of cardiovascular hospitalisations and deaths over a median of 5 years follow-up from baseline [12]. Blumenthal and colleagues, in their study of effects of exercise training on depressive symptoms, had the same experience and reported that a decrease in BDI score between baseline and

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3-month follow-up was associated with an increased number of hospitalisations and deaths [13]. However these studies did not report on the proportions of patients whose depression remitted, or those that, stayed depressed or developed depression. From the ENRICHD study (a study in post MI patients), it is known that a large proportion of depressed patients remit spontaneously, without any structured intervention [14]. The same experience has been reported in HF patients [15,16]. In the study of Fulop and colleagues, patients with depressive symptoms at 24 weeks (persistent or recently developed) also used significantly more health care resources compared to those without depressive symptoms [15]. In the study of Dekker and colleagues, patients with persistent or incident depressive symptoms at 3 or 6 months had the worst health-related quality of life [16]. With the exception of these two studies [15,16] it is today unclear how depressive symptoms in HF patients develop over time and how this trajectory of depressive symptoms is associated with hospital admission and prognosis. Such information could help in the interpretation of the effect of depressive symptoms on clinical events and might also guide optimal timing of assessment for depressive symptoms in HF.

The purpose of this study was to describe the time-course of depressive symptoms in patients with HF during 18 months following hospitalisation due to HF and determine its relationship with the hospital admission rate and mortality. A second purpose was to compare the prognostic information of depressive symptoms assessed 18 months after hospital discharge.

Methods

Study design

Data was collected in the COACH (Coordinating study evaluating Outcomes of Advising and Counselling in Heart failure) study and additional long-term follow-up data was collected. COACH was a multi-centre, randomised trial designed to compare basic and intensive support to standard treatment in patients with HF. The methodology, main results and baseline depression data of the trial have been published previously [17–19]. In summary, patients were recruited during a period of 28 months from October 2002 to February 2005. All patients had been admitted to hospital with symptoms of HF, New York Heart Association (NYHA) functional classification II–IV. Patients were >18 years of age and had evidence of structural underlying heart disease. Major exclusion criteria were: concurrent inclusion in another study or in a HF clinic, inability to complete the questionnaires; any invasive procedure or cardiac surgery intervention within the last 6 months or planned during the following 3 months; ongoing evaluation for heart transplantation; and inability or unwillingness to give informed consent. After written informed consent, patients were randomised into three groups: care as usual and two intervention groups (basic and intensive support). Patients completed questionnaires and were interviewed by an independent interviewer not involved in the care for these patients. The Central Ethics Committee approved the study, including the 3-year extended follow-up, and the investigation conformed to the principles outlined in the Declaration of Helsinki.

Measurements

Depressive symptoms

Depressive symptoms were assessed by The Centre for Epidemiological Studies Depression Scale (CES-D). This questionnaire was administered a few days before discharge from the hospital and 18 months after hospitalisation. The CES-D is a 20-item self-report questionnaire designed to measure depressive symptoms in the general population and in the medically ill [20]. A total sum score is used (0–60), with higher scores indicating more depressive symptoms. A cut-off point of 16, which is generally used to define patients at risk of clinical depression was used to distinguish between HF patients with depressive symptoms (CES-D≥16) and patients without depressive symptoms (CES-D<16). By using baseline and 18-month data, patients were classified into 4 categories of depressive symptoms: 1) ongoing: patients with depressive symptoms at index hospitalisation and at the 18-month follow-up; 2) remission: patients with depressive symptoms at index hospitalisation but not at 18-month follow-up; 3) new episode: patients without depressive symptoms at index hospitalisation but with depressive symptoms at 18-month follow-up and 4) non depressed: patients without depressive symptoms at index hospitalisation and 18-month follow-up.

Hospitalisation and mortality

Data on hospitalisation and mortality was collected from the patient's medical record and by interviews with the patient during follow-up. In this study, data on hospitalisation was collected 18 months after discharge whereas data on mortality was collected at 18 and 36 months after discharge. Hospitalisation was defined as an unplanned overnight stay in a hospital due to any cause. Regarding the 18-month follow-up period, reason for hospitalisation, cause of death and date of the event were adjudicated by a central end-point committee. Concerning the 36-month (1095 days) follow-up, only data on mortality was collected from the hospital registry, the patient's general practitioner and/or the municipality.

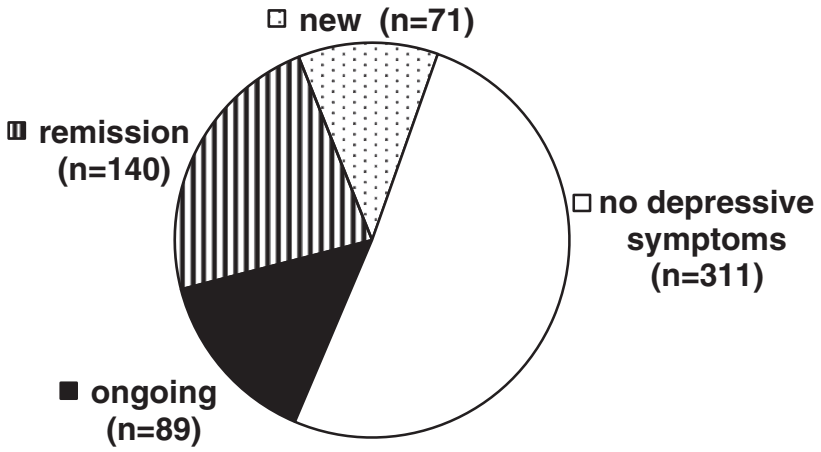

Fig. 1. Course of depressive symptoms in HF patients during the 18-month follow-up. (n = 611).