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Increased emotional distress in type-D cardiac patients without a partner

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Abstract

Objective: The distressed (type-D) personality is an emerging risk factor in coronary artery disease that has been associated with adverse prognosis, impaired health status, and emotional distress. Little is known about factors that may influence the impact of type-D personality on health outcomes. Therefore, the aim of this study was to determine the combined effect of type-D and not having a partner on symptoms of anxiety and depression. **Methods:** Patients (n=554) hospitalized for acute myocardial infarction or implantable cardioverter defibrillator implantation completed the 14-item type-D Scale (DS14) during hospitalization and the State–Trait Anxiety Inventory and Beck Depression Inventory at 2 months follow-up. **Results:** Stratifying by personality and partner status showed that type-D patients without a partner had a higher risk of both anxiety [odds ratio (OR)=8.27; 95% confidence interval (CI)=2.50–27.32] and depressive symptoms (OR=6.74; 95% CI=2.19–20.76) followed by type-D patients with a partner (OR=3.73; 95% CI=2.16–6.45 and OR=3.81; 95% CI=2.08–6.99, respectively) and non-type-D patients without a partner (OR=2.04; 95% CI=1.05–3.96 and OR=3.03; 95% CI=1.46–6.31, respectively) compared to non-type-D patients with a partner, adjusting for demographic and clinical baseline characteristics, indicating a dose–response relationship. **Conclusion:** Lack of a partner further exacerbated the risk of symptoms of anxiety and depression in the already distressed type-D patients. In clinical practice, it is important to identify type-D patients without a partner and carefully monitor them, as they may be less likely to alter health-related behaviors due to their increased levels of distress.

Keywords: Type-D personality; Depression; Anxiety; Partner; Myocardial infarction; Implantable cardioverter defibrillator

Introduction

There is increasing emphasis on patient-centered outcomes in cardiovascular disease (CVD), such as quality of life and emotional distress [1]. Knowledge of the determinants of these outcomes is also important in order to facilitate identification of high-risk patients in clinical practice [1]. The distressed (type-D) personality may be an important determinant of individual differences in outcomes, as this personality disposition has been associated with an increased risk of adverse prognosis [2–5], impaired quality of life and health status [6,7], exhaustion and fatigue [8], and a wide range of emotional distress, including anxiety [9], depressive symptoms [9,10], and posttraumatic stress disorder [11]. Type-D has been shown to be a risk factor for adverse health outcomes across different types of CVD, including peripheral arterial disease [6], coronary artery disease (CAD) [12], chronic heart failure [10], arrhythmias [9], and heart transplantation [13,14]. The risk associated with type-D in relation to clinical outcome is on par with established biomedical risk factors such as left ventricular dysfunction [3,4,15].

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Type-D personality is characterized by the two stable personality traits negative affectivity (the tendency to experience negative emotions across time and situations) [16] and social inhibition (the tendency to inhibit the expression of emotions and behaviors in social interactions to avoid disapproval by others) [17]. The prevalence of type-D ranges from 24–34% in patients with CAD [3,4] and arrhythmias [9] to 33–53% in patients with hypertension [18], peripheral arterial disease [6], and chronic heart failure [10,19].

Little is known about factors that may influence the impact of type-D personality on prognosis, quality of life, and emotional distress. Knowledge of these factors is important for optimizing risk stratification in clinical practice and may also point to targets for intervention. There are several pathways that may link type-D to adverse health outcomes, including physiological and behavioral pathways. As for physiological pathways, they may comprise inflammation [19,20], blood pressure reactivity to stress [21], and hyperactivity of the hypothalamic–pituitary–adrenal axis, including increased levels of cortisol [21,22]. Potential behavioral pathways comprise health-related behaviors, including failure to change risk factors, such as smoking, and poor treatment adherence [3,23]. In addition, because type-D patients inhibit behavior in social interactions, it is likely that communication with doctors is impaired, which may also hinder effective treatment [24]. However, to date, these potential mechanisms have not been examined in type-D patients.

A potentially important behavioral factor influencing the relationship between type-D and health outcomes is social support. Since social support has been shown to buffer the effects of stress on both well-being [25] and cardiovascular function [26,27], lack of support may enhance the adverse effects of type-D personality on health outcomes, including emotional distress. By analogy, since type-D patients have been shown to have fewer social ties and to experience less social support than non-type-D patients [3], type-D patients who have a fulfilling relationship with a partner may be at less risk for adverse health outcomes than patients without a partner.

Therefore, the aim of this study was to determine the combined effect of type-D personality and not having a partner on symptoms of anxiety and depression across different CVD treatment groups, that is, in patients with acute myocardial infarction (MI) or patients who received an implantable cardioverter defibrillator (ICD). An additional advantage of pooling data was to enhance the statistical power of the study, which has also been advocated by others [28].

Methods

Patient population and design

Patients hospitalized for acute MI or ICD implantation between May 2003 and December 2005 were included from five hospitals in the Netherlands (Catharina Hospital, Eindhoven; Amphia Hospital, Breda; St. Elisabeth Hospital, Tilburg; TweeSteden Hospital, Tilburg; and St. Anna Hospital, Geldrop). Inclusion criteria were hospitalization for acute MI (n=452) or ICD implantation (n=210). Exclusion criteria were significant cognitive impairments (e.g., dementia) and severe life-threatening comorbidities (e.g., cancer). Criteria for diagnosis of acute MI were troponin I levels that are more than twice the upper limit, typical ischemic symptoms (e.g., chest pain) lasting for more than 10 min, and ECG evidence of ST segment elevation or new pathological Q waves. ICDs were implanted for primary or secondary prevention of ventricular arrhythmias, according to accepted criteria [29].

Patients completed self-report measures on type-D personality at baseline as well as measures on anxiety and depressive symptoms at 2 months follow-up. The 2-month follow-up period was adopted due to logistic reasons. Two months after acute MI or ICD implantation, patients visited the outpatient clinic for a routine control. To minimize patient burden, we combined our study with these visits to the hospital. Demographic and clinical variables were obtained from the medical records. Of the original 662 patients, 554 patients were included in the final analyses (i.e., 390 MI patients and 164 ICD patients; see Fig. 1). The 108 patients who were excluded comprised 62 MI patients and 46 ICD patients. Excluded patients differed signifi-

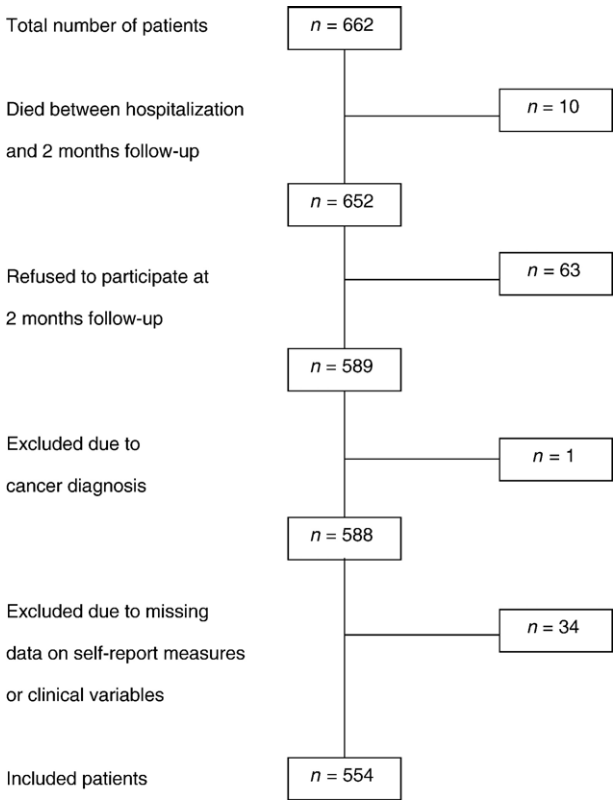

Fig. 1. Flowchart of patient selection.