THE EFFECT OF DEPRESSION AND ANXIETY ON THE PERFORMANCE STATUS OF CONGESTIVE HEART FAILURE PATIENTS

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ABSTRACT

Individuals who are diagnosed with congested heart failure (CHF) undergo major changes in lifestyle. The present cross-sectional study was conducted to identify the relationship between CHF patients and their performance status, and how it is influenced by the presence of the level of depression and anxiety. 84 eligible participants were enrolled in the study between June 2005 and March 2006 at the Department of Cardiology, Mahatma Ghandi Medical College & Hopital, Jaipur. The patients were screened using the General Health Questionnaire to screen for co-morbid psychiatric conditions. The patients were assessed for depression and anxiety, and their performance status using 17-item Hamilton Depression Rating Scale, Montgomery-Asberg Depression Rating Scale, Hamilton Anxiety Rating Scale and Short-Form Health Survey (SF-36) for the health-related quality-of-life measurements. The study findings indicate that there is a positive correlation between anxiety and depression in CHF patients. The findings also indicated that depression and anxiety are positively correlated with the performance status of CHF patients. The duration of CHF correlated with the performance status of CHF patients. It can be concluded that anxiety and depression are prevalent among CHF patients and that they interfere with the performance status; additionally, duration on CHF also interferes with performance status. Addressing depression and anxiety can help in enhancing the patient's performance status.

Key word: CHF, depression and anxiety, performance status in CHF

INTRODUCTION

The incidence & prevalence enhance with age and after the age of 65 years, congestive heart failure (CHF) is one of the major cause of hospitalization & disability**(1-2)** and death rate is 6-7 time higher in CHF patients as compare the general population.3 The depression & anxiety are most common psychological morbidity which effect the performance status of congestive heart failure (CHF) patients.

Previous few studies showed that 25% patients treated at primary care setting had psychological problems, mainly depression and/or anxiety.**(5)** About 22 percent of non-psychiatric patients

showed clinically relevant psychological symptoms in study done by Runkewitz et al.(6)

Depression, one of major psychological morbidity risk factor and had associated with increasing risk of hypertension, Diabetes, cardiovascular disease, stroke.(7) Primary Health practitioners are considered to be caretakers who have a specific concern for the assessment, recognition, and treatment of psychiatric disorders(8). However, the identification and management of psychological problems by primary care physicians remain poor and inadequate(9). The diagnosis of depressive or anxiety disorders is reported to be only 50%–60%(10), and physicians do not take into description over 50% of psychiatric conditions(11).

High risk of anxiety and depression are generally found in female, single or divorced and problem of fatigue and/or cardiovascular symptoms.(6) CHF patients have associated anxiety & depression and study showed that had associations, CHF mortality and sudden cardiac death to depression, anxiety and both depression and anxiety.(12-13)

Furthermore, there is strong association between CHF Outpatients/inpatients mortality and depression and patients whose have existing coronary artery disease with depression, showed relative risk 1.5 to 2.5 for morbidity and mortality.

Several studies have proposed that CHF patients, anxiety, and depression have an inferior quality of life, greater disability, and an increased rate of hospitalization, but other studies have not simulated this findings(14-15).

Although most guidelines endorsed enlightening the quality of life and helping patients comply with the treatment for cardiovascular diseases,

particularly among elderly individuals with severe infirmity and functional impairment, the exact role of psychological factors has not been assessed. The present study was designed to evaluate the influence of anxiety & depression on functional status of patients with CHF.

Methodology

Study Design: This study was a cross-sectional and investigation of enrollment data for subjects with CHF. The study protocol was approved by the ethical committee, SP Medical College Bikaner, and all study participants signed an informed consent.

Study subjects

The sample 84 eligible participants were enrolled in the study between June 2005 and March 2006 at the Department of Cardiology, , Mahatma Ghandi Medical College & Hopital, Jaipur. The diagnoses of CHF were assigned by a cardiologist. The NYHA functional classification was included to evaluate the degree to which heart failure limited physical activities corresponding to disease severity. As functional abilities decrease, NYHA classification increases from class I to class IV. In the current study, NYHA classification was determined using a semi-structured clinical interview, those participants who completed all study measures were consecutively included as outpatients and were interviewed to complete a brief questionnaire in which they were asked to indicate their age in years, gender, education, and marital status and whether or not they had been diagnosed with different health co-morbidity, including asthma, cancer, coronary artery disease, diabetes, heart attack, emphysema or chronic obstructive pulmonary disorder (COPD), , osteoarthritis, rheumatoid arthritis, hearing loss, osteoporosis, or stroke. Participation was voluntary

Study tools

All participants were evaluated using the Semi-structured study tools. for the assessment of depressive symptoms by using 17-item Hamilton Depression Rating Scale (HDRS$_{17}$)(16) and the Montgomery-Asberg Depression Rating Scale (MADRS)(17), for the assessment of anxiety symptoms by using the Hamilton Anxiety Rating Scale (HARS)(18) and the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36)(19) for the health-related quality-of-life measurements. Subjects were investigated only for anxiety and depressive symptoms, not using an interview, to classify individuals as meeting criteria for major depressive disorder or an anxiety disorder.

Hamilton Depression Rating Scale (HDRS): The HDRS, a 17-item clinician-rated scale, was used to evaluate depressive symptom severity. It includes confounding items (eg, pain complaints with fatigue or irritability and anxiety), weights some items over others (eg, 0–3 vs 0–5 scored items), and possesses other psychometric flaws. However, Cicchetti and Sparrow's guidelines (1981) for assessing reliability coefficients, gained excellent total score reliability for the HDRS (intraclass correlation coefficient = 0.98).

Montgomery-Asberg Depression Rating Scale (MADRS): The MADRS was developed in response to few of the restrictions of the HDRS and other approaches to measuring depression. Neither the HDRS nor the MADRS cover all 9 symptom domains required to identify a major depressive episode according to the DMS-IV-TR. The MADRS, considered to be sensitive to treatment variations, is briefer and more identical than the HDRS. A restriction of the MADRS is the lack of a structured interview, which may affect its reliability. However, the internal reliability of the MADRS is acceptable, with a Cronbach α of 0.84.

SF-36: The SF-36 is a generic quantity of health status and is widely used across the world. The SF-36 is a multi-item scale that assesses 8 health areas: physical functioning, role limits due to physical problems, social functioning, bodily pain, mental health, role restrictions due to emotional problems, vitality, and general health perceptions. The SF-36 categorizes functional problems concomitant with mood disorder symptoms and other common health problems in primary care patients. Reliability approximations for physical and mental summary scores usually exceed 0.90.(20)

RESULTS

Patient Characteristics

Eighty four participants with no history of psychopathology were consecutively admitted and involved in the current study. Patients had not taken psychotropic drugs before recruitment into the present study and had no history of previous psychotropic medication. The CHF conditions included IHD (68%), hypertension (17%), diabetes (14%), valvular heart disease (6%), and cardiomyopathy (2%). Subjects with CHF had a average age of 54.2 years (range, 33–73 years; SD = 10.0); 74 (88.1%) were men, and 10 (11.9%) were women. Of the patients with CHF, 12 (14.29%) were in NYHA class I (no restriction of physical activity), 46 (54.76%) in NYHA class II (slight restriction of physical activity), 20 (23.81%) in NYHA class III (marked restriction of physical activity), and 6 (7.14%) in NYHA class IV (unable to carry out any physical activity without uneasiness and symptoms of cardiac insufficiency at rest). Seventy one (87.65%) CHF patients also had hypertension, 12 (14.29%) patients had diabetes, 6 (7.1%) had peripheral vascular disease, and 2

(2.34%) had COPD. The CHF patients had a average duration of illness of 6.2 years (SD = 2.6), and a mean of 7.35 (SD = 3.63) previous hospitalizations.

Relationship between depressive, anxiety symptoms and quality of life

In the present study, three sequential regression analyses were performed to identify the association between depressive symptoms and anxiety symptoms with the quality of life of the patients (Table 2).

For the PCS, the significant predictors were the depressive factor and the diagnosis (CHF vs hypertension) and, when combined, only the depressive factor predicted higher scores on the PCS (standardized β coefficient = −0.27; P = .014).

For the MCS, the significant correlation were found in sex (men vs women), diagnosis (CHF vs hypertension), depressive factor, lifetime hospitalizations, and HARS score and, in the final model, CHF (standardized β coefficient = −0.59; P < .001) and sex (women) (standardized β coefficient = 0.13; P = .03) were significant predictors of higher scores on the MCS.

DISCUSSION

Patients with CHF were more often hospitalized and showed more anxiety and more physically ill. In CHF patients, depressive symptom level was the only significant predictor of physical health, while diagnosis and sex were significant predictors of mental health. Satisfaction with life was predicted by group, lifetime hospitalizations, and HARS score.

The findings of the present study indicate that anxiety and depressive symptoms represent relevant predictors of poor quality of life in patients with chronic illnesses such as cardiovascular diseases. Additionally, we found that anxiety and depression symptoms were rarely detected or correctly treated by physicians. Earlier contact with psychiatric services were done only 2 (0.01%) of the patients of the present study.

This finding should encourage working together to correctly approach and managing complex and chronic diseases such as CHF by physicians and psychiatrists. The role of anxiety in this subgroup appears to be critical. However, Anxiety was found to be associated with somatic phobias, death wishes, and somatic pain a significant predictor of lower satisfaction with life.

Due to intolerability of somatic pain and disability, CHF patients may have high tendency of suicide. Only 2(1.6%) patients had previous taken consultation from psychiatric physician.

 Most people who commit suicide have visited a physician in the month before the suicide, and these visits represent an opportunity to save people. None of the patients in the study by Faris et21 al committed suicide on the same day that they saw a psychiatrist. The 5 most common symptoms listed in the week before the suicide were anxiety, unspecified gastrointestinal symptoms, depression, unspecified cardiac symptoms, and hypertension. These symptoms could be considered to be early warning signs of unrecognized psychiatric disorders such as affective or anxiety disorders, which may increase the risk of suicide.

Juurlink et al(22) study showed a high level association between the collective number of illnesses and symptoms and the predictable risk of severe depression. Compared with patients with no identified illness, for example, patients with 3 illnesses had about a 3-fold increase in the estimated risk ofdepression/ suicide, and patients

with 5 illnesses had about a 5-fold increase in risk. Frierson[23] noted that severe depression in elderly individuals with several coexisting medical problems is a major psychiatric problem which was major depression and was the most common psychiatric problem in the CHF patients. Klein-Schwartz and Oderda[24] found that patients had worsening ischemic heart disease, congestive heart failure, and suicide attempts those had preexisting cardiovascular disease and severe somatic pains.

Relevant psychosocial factors may be important in developing anxiety, depression, and cardiovascular diseases. For example, patients' beliefs about their illness should be adequately explored. Family stress, family coping, health stress, and the patient's personality should be evaluated in order to predict life satisfaction. These variables taken together may produce an "at risk mental state" in which individuals may not be able to mobilize resources and coping abilities.

Similar to Juurlink et[22] al, in the present study, tendency of suicide with lethal methods than the hypertension patients those face more chronic condition like CHF. Physicians therefore should be aware of the risk of suicide among patients experiencing severe pain because patients may see suicide as the only way of escaping their suffering.

CONCLUSION

Anxiety and depression frequently coexist with cardiovascular diseases and may have complex relationships. Our findings have important implications for prevention. Physicians, nurses, and other health care professionals should be alert to the quality of life related to patients with chronic illnesses who may have symptoms of depression and anxiety and a high risk for suicide. Our findings suggest the need for health professionals to screen patients with chronic illnesses in order to promote psychosocial rehabilitation and decrease the caregivers' and patients' stress.

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Table 1: Subject Characteristics of Congestive Heart Failure (CHF)

Variables	Value
Men, %	**88.1**
Age, mean $\pm$ SD, y	**54.2** $\pm$10.2
Duration of illness, mean $\pm$ SD, y	**6.20** $\pm$2.60
No. of previous hospitalizations, mean $\pm$ SD	**7.35** $\pm$3.63
$HDRS_{17}$ score, mean $\pm$ SD	**16.73** $\pm$2.24
$MADRS_{10}$ score, mean $\pm$ SD	**14.75** $\pm$3.68
$HDRS_{16}$ score, mean $\pm$ SD	**18.84** $\pm$6.86
$MADRS_9$ score, mean $\pm$ SD	**15.72** $\pm$6.46
Depression score, mean $\pm$ SD	**22.46** $\pm$6.37
HARS score, mean $\pm$ SD	**12.79** $\pm$4.71
SF-36 (PCS) score, mean $\pm$ SD	**43.14** $\pm$8.71
SF-36 (MCS) score, mean $\pm$ SD	**49.23** $\pm$7.3
HDRS suicidality, %	
0	**20.24**
1	**54.76**
2	**25**
MADRS suicidal ideation, %	
0	**3.57**
1	**22.62**
2	**58.33**
3	**15.48**

Table 2: Sequential Regression Analyses Assessing Multivariate Association Between Quality-of-Life Measures (SF-36) and Depressive and Anxiety Symptoms

Variable	1	2	3	4	5	Final
Sex (men v women)	-.03	-.04	-.04	-.06	-0.02	
Lifetime hospitalization		.09	.16	.13	.11	
Depression			-.26	-.17	-.16	-.25
HARS score				-.12	-.13	
Suicidality						.03
R^2 changes	.002	.002	.03	.02	.01	0.15
Significant F changes	<.001	.35	.34	.02	.15	<.001
Sex (men v women)	.10	.10	.09	.12	.12	.12
Lifetime hospitalization		-.04	-.03	-.04	-.02	-.04
Depression			.04	.12	.12	.12
HARS score				-.12	-.11	-.12
Suicidality					.02	
R^2 changes	0.23	.01	.001	.001	.01	0.26
Significant F changes	<.001	.05	.56	.54	.07	<.001