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Co-occurrence of anxiety and depressive symptoms following breast cancer surgery and its impact on quality of life

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ABSTRACT

Purpose: Little is known about the prevalence of combined anxiety and depressive symptoms (CADS) in breast cancer patients. Purpose was to evaluate for differences in demographic and clinical characteristics and quality of life (QOL) prior to breast cancer surgery among women classified into one of four distinct anxiety and/or depressive symptom groups.

Methods: A total of 335 patients completed measures of anxiety and depressive symptoms and QOL prior to and for 6 months following breast cancer surgery. Growth Mixture Modelling (GMM) was used to identify subgroups of women with distinct trajectories of anxiety and depressive symptoms. These results were used to create four distinct anxiety and/or depressive symptom groups. Differences in demographic, clinical, and symptom characteristics, among these groups were evaluated using analyses of variance and Chi square analyses.

Results: A total of 44.5% of patients were categorized with CADS. Women with CADS were younger, non-white, had lower performance status, received neoadjuvant or adjuvant chemotherapy, had greater difficulty dealing with their disease and treatment, and reported less support from others to meet their needs. These women had lower physical, psychological, social well-being, and total QOL scores. Higher levels of anxiety with or without subsyndromal depressive symptoms were associated with increased fears of recurrence, hopelessness, uncertainty, loss of control, and a decrease in life satisfaction.

Conclusions: Findings suggest that CADS occurs in a high percentage of women following breast cancer surgery and results in a poorer QOL. Assessments of anxiety and depressive symptoms are warranted prior to surgery for breast cancer.

1. Introduction

Population-based studies suggest that depression and anxiety disorders affect about 6.7% and 18% of Americans, respectively (Kessler et al., 2003, 2010). What is less clear, particularly in primary care settings, is the percentage of individuals who have mixed anxiety and depression disorders (Means-Christensen et al., 2006; Roy-Byrne et al., 1994; Zbozinek et al., 2012). Part of this uncertainty comes from ambiguity in the definitions of anxiety and depression, each of which refers to several different types and levels of disorders that vary in terms of the severity of the symptoms experienced (Katon and Roy-Byrne, 1991).

Both depression and anxiety are more common in oncology patients than in the general population. These two symptoms are often assessed together and referred to as psychological distress (Brintzenhofe-Szoc et al., 2009). Previous psychological treatment, lack of an intimate confiding relationship, younger age, and severely stressful non-cancer life experiences were associated with the co-occurrence of depression and anxiety in women with breast cancer (Burgess et al., 2005). Additionally, in oncology patients, these two treatable conditions are associated with non-adherence to treatment recommendations; increased time in the hospital; and impaired physical, social, and family functioning (Mitchell et al., 2011). Finally, findings suggest that anxiety and depression are associated with a poorer prognosis and increased mortality (Jones, 2001).

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Several systematic reviews have noted wide variations in the prevalence rates for anxiety and depression in oncology patients (Mitchell et al., 2011; Singer et al., 2010; van't Spijker et al., 1997). Although many studies mention the co-occurrence of anxiety and depression in these patients, only three studies were identified that provided information on the exact prevalence rates for combined anxiety/depressive symptoms (CADS) in patients with breast cancer (Brintzenhofe-Szoc et al., 2009; So et al., 2010; Van Esch et al., 2012). In a large epidemiological study that assessed patients at the time of diagnosis or prior to the initiation of cancer treatment (n = 8175), using the Brief Symptom Inventory (Brintzenhofe-Szoc et al., 2009), 10.8% of the patients with breast cancer had CADS, 14.9% had only anxiety symptoms, 2.8% had only depressive symptoms, and 71.5% had neither symptom.

In the second study that assessed Chinese patients (n = 218) midway through chemotherapy (CTX) or radiation therapy (RT) for breast cancer, using the Hospital Anxiety and Depression Scale (HADS) (So et al., 2010), 15.6% of the sample had CADS. In the third longitudinal study that assessed CADS in patients prior to the diagnosis of breast cancer (n = 482) and again at 12 and 24 months after the diagnosis, using the short-form of the State-Trait Anxiety Inventory (STAI) and the Center for Epidemiological Studies-Depression (CES-D) Scale (Van Esch et al., 2012), the occurrence rates for CADS were 28%, 14%, and 10%, respectively. The occurrence of CADS at the time of cancer diagnosis was associated with higher levels of fatigue and poorer quality of life (QOL) at 12 and 24 months after cancer diagnosis.

While findings from these studies suggest that CADS occurs in 10%–28% of patients with breast cancer depending on the time of the assessment (Brintzenhofe-Szoc et al., 2009; So et al., 2010; Van Esch et al., 2012), the demographic and clinical characteristics associated with CADS as well as its impact on QOL outcomes have not been evaluated rigorously. In addition, single assessments of anxiety and depressive symptoms were used to diagnosis CADS. However, significant heterogeneity exists in the trajectories of anxiety and depressive symptoms over the course of patients' cancer treatment (Kyranou et al., 2014a, 2014b).

Our research team evaluated anxiety (Miaskowski et al., 2015) and depressive (Dunn et al., 2011) symptoms in women (n = 398) prior to and for six months following breast cancer surgery. Our detailed characterization of anxiety and depressive symptoms in these patients provided an opportunity for us to evaluate for differences in demographic and clinical characteristics, as well as QOL outcomes prior to breast cancer surgery among women who were classified into one of four distinct groups (i.e., Lower Anxiety and Resilient; Lower Anxiety and Subsyndromal Depressive symptoms; Higher Anxiety and Resilient; Higher Anxiety and Subsyndromal Depressive symptoms). Knowledge of preoperative characteristics associated with the co-occurrence of anxiety and depressive symptoms can be used by nurses to identify higher risk patients and initiate pre-emptive or postoperative interventions to reduce psychological distress in these patients.

2. Methods

2.1. Patients and settings

This descriptive, study is part of a larger study that evaluated for neuropathic pain, lymphedema, and other symptoms in a sample of women who underwent breast cancer surgery. A detailed description of the methods are published elsewhere (Dunn et al., 2011; McCann et al., 2012; Miaskowski et al., 2014; Van Onselen et al., 2013). In brief, patients were recruited from Breast Care Centers located in a Comprehensive Cancer Center, two public hospitals, and four community practices.

Patients were eligible to participate if they were ≥18 years of age; would undergo breast cancer surgery on one breast, were able to read, write, and understand English; agreed to participate; and gave written informed consent. Patients were excluded if they were having breast cancer surgery on both breasts or had distant metastasis at the time of diagnosis.

A total of 516 patients were approached and 410 were enrolled in the study (response rate 79.5%). For those who declined participation, the major reasons for refusal were: too busy, overwhelmed with the cancer diagnosis, or insufficient time available to do the assessment prior to surgery. A sample of 335 patients was available to be used in the creation of the anxiety and depressive symptom groups.

2.2. Study procedures

The Committee on Human Research at the University of California, San Francisco and the Institutional Review Boards at each of the study sites approved the study. During the patients' preoperative visit, a staff member explained the study to the patient and introduced the patient to the research nurse who met with the women, determined eligibility, and obtained written informed consent prior to surgery. After providing consent, patients completed the enrollment questionnaires. Patients were contacted two weeks after surgery to schedule the first post-surgical appointment. The research nurse met with the patients either in their home or in the Clinical Research Center at one, two, three, four, five, and six months after surgery.

2.3. Instruments

A demographic questionnaire obtained information on age, education, ethnicity, marital status, employment, and financial status. Medical records were reviewed to obtain information on disease and treatment characteristics.

Patient's functional status was assessed using the KPS scale, which ranges from 30 (I feel severely disabled and need to be hospitalized) to 100 (I feel normal, I have no complaints or symptoms). The KPS has well established validity and reliability (Karnofsky, 1977).

The Self-Administered Comorbidity Questionnaires (SCQ) is a short and easily understood instrument that was developed to measure comorbidity in clinical and health service research settings (Sangha et al., 2003). The questionnaire consists of 13 common medical conditions. Patients were asked to indicate if they had the condition; if they received treatment for it; and did it limit their activities (indication of functional limitations). For each condition, a patient can receive a maximum of 3 points. The SCQ has well-established validity and reliability and was used in studies of patients with a variety of chronic conditions (Brunner et al., 2008; Cieza et al., 2006; MacLean et al., 2006).

The Spielberger State-Trait Anxiety Inventories (STAI-T, STAI-S) consist of 20 items each that are rated from 1 to 4. Scores for each scale are summed and can range from 20 to 80. A higher score indicates greater anxiety. The STAI-T measures an individual's predisposition to anxiety determined by his/her personality and estimates how a person generally feels. The STAI-S measures an individual's transitory emotional response to a stressful situation. It evaluates the emotional responses of worry, nervousness, tension, and feelings of apprehension related to how a person feels "right now" in a stressful situation. Cutoff scores of ≥31.8 and ≥ 32.2 indicate high levels of trait and state anxiety, respectively (Kennedy et al., 2001; Spielberger et al., 1983). In this study, Cronbach's alphas for the STAI-T and STAI-S were 0.88 and 0.95, respectively.

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