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Symptoms of hormonal therapy and social support: Is there a connection? Comparison of symptom severity, symptom interference and social support among breast cancer patients receiving and not receiving adjuvant hormonal treatment

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A B S T R A C T

Background: Although there has been a significant reduction in mortality, breast cancer is the most frequent cancer among women worldwide. This decline in mortality has created a significant survivor population that must manage the post curative treatment phase, in order to have an increased quality of life and well-being. This study examined the relationship between symptom interference and severity with the perception of social support in the lives of women receiving or not receiving, hormonal therapy after initial treatment.

Methods and sample: Participants completed symptom severity and interference questionnaires, (MDASI and BCPT), a social support survey (MSPSS) and demographic and comorbidity questionnaires.

Results: Of the 210 women participants, higher symptom severity correlated with unemployment, living alone or being religious. Participants who were currently taking hormonal treatment ($n = 84$), reported a significant negative correlation between symptom severity, measured by MDASI, and social support ($p = 0.006$). Consequently, as symptom severity increased, perceived social support decreased.

In the BCPT assessment, decreased cognitive functioning ($p < 0.05$), pain ($p < 0.05$), bladder dysfunction ($p = 0.001$), and reduced self-image ($p < 0.01$) were significantly negatively correlated with social support for those participants currently taking hormonal therapy. Participants who had not previously received hormonal therapy ($n = 64$), cognitive dysfunction and bladder dysfunction were negatively correlated with social support. Women with preexisting heart or pulmonary dysfunction and arthritis reported statistically significant higher levels of symptom severity and decreased perceptions of social support.

Conclusions: Identifying socio-demographic variables and comorbidities that affect hormonal therapy symptom burden is essential for offering adequate support for breast cancer survivors.

Introduction

Breast cancer is currently the most common cancer among women worldwide (Parkin et al., 2005; OECD, 2011) and frequency has increased during the last two decades. The population of Israel experienced a 23.2% increase in the incidence of breast cancer between 1980 and 2010 (Hery et al., 2008; Israel Cancer Registry, 2013). Approximately 4000 women are diagnosed with breast cancer in Israel every year, and 900 women die from the disease. However, the number of women dying from breast cancer has decreased as a result of increased efforts in early detection and the development of more effective treatments (Israel Cancer Association, 2014). These statistics suggest that more women will become long term survivors of breast cancer.

Various studies have examined menopausal and general symptoms that women with breast cancer experience in response

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to chemotherapy and radiation treatments (Rosedale and Fu, 2010; Wengstrom, 2008). However, limited research has systematically assessed the symptom burden (symptom severity and symptom interference) of general and menopausal symptoms due exclusively to hormonal treatments. Additionally, relatively few studies have researched the correlation between adjuvant hormonal therapy symptoms and Quality of Life, QOL, as compared to the abundant studies that show a relationship between chemotherapy symptoms and QOL (Ganz et al., 2011; Ganz et al., 2003; Glaus et al., 2006; Shilling and Jenkins, 2007; Tchen et al., 2003).

This study was a part of a larger, hospital-wide study examining symptom experience and severity and their possible correlation with social support during the treatment and follow up trajectory. Here, we investigated the relationship between symptom occurrence and severity correlating with the presence of social support in the lives of women receiving, or not receiving, hormonal therapy after initial treatment in a hospital oncology clinic.

Symptom occurrence and severity across the breast cancer treatment trajectory

Breast cancer patients experience a number of symptoms including fatigue, pain, insomnia, upper gastrointestinal complaints and menopausal symptoms (Doorenbos et al., 2005; Fan et al., 2005; Kim et al., 2008). Various studies have examined the occurrence of symptoms after surgery (Bender et al., 2005; Ganz et al., 2004; Kenefick, 2006), during chemotherapy treatment (Kayl and Meyers, 2006: Kim et al., 2008), after chemotherapy (Bender et al., 2005; Ganz et al., 2004), during radiation (Kim et al., 2008), after radiation (Ganz et al., 2004: Kim et al., 2008) and one year after diagnosis (Arndt et al., 2006; Ganz et al., 2011).

Hormonal therapy treatment

Hormonal treatments are included in the regular protocol treatment for women with breast cancer when the tumor is positive for receptors (Vigler and Inbar, 2002), to be taken for 5–10 years after completion of curative treatment. Adjuvant hormonal treatment is prescribed for at least 5, and up to 10, years (Whelan and Pritchard, 2006) after completion of adjuvant chemotherapy. Adjuvant hormonal treatments, currently in use for patients with primary breast cancer, are divided into three groups: selective estrogen receptor modulators (SERMs), such as Tamoxifen; non steroidal aromatase inhibitors (AIs), such as Anastrozole, Letrozol and Exemestane (Steroidal) (Harwood, 2004), and leuteinizing hormone-releasing hormone (LHRH) agonists, such as Goserelin and Leuprorelin, which is prescribed for premenopausal women (Hallquist Viale, 2005).

In studies comparing the overall QOL of women receiving different hormonal medications or receiving no hormonal treatment, no difference was found in the QOL between the two groups. However, in women receiving hormonal therapy, differences were found between specific symptoms experienced by women according to the type of hormonal treatments they were given and QOL (Day et al., 1999; Fallowfield et al., 2006; Ganz et al., 2002; Land et al., 2006; Whelan and Pritchard, 2006). In a recent study in Israel, 132 women were asked about their hormonal symptoms and QOL. The majority of women complained of hot flashes and night sweats, yet they did not feel that these symptoms interfered with their overall QOL (Ochayon et al., 2010).

Hormone-related symptoms can be divided into a number of groups: vasomotor symptoms, vaginal symptoms, weight gain body-image issues, cognitive or mood changes, urinary incontinence and joint and muscle pain (Alfano et al., 2006; ATAC Trialists' Group, 2004, 2006; Badger et al., 2001; Big 1–98 Collaborative Group, 2005; Buzdar, 2003; Day et al., 1999; Glaus et al., 2006). In many studies, the occurrence of hot flashes is the most prominent symptom that appears in various frequencies (41%–78%). This symptom is particularly evident in women taking Tamoxifen (ATAC Trialists' Group, 2006; Land et al., 2006; Wilkinson, 2004). The menopausal symptoms are interrelated and can cause body-image problems, sexual dysfunction, relationship concerns and coping difficulties (Avis et al., 2005; Goss et al., 2011; Knobf, 2001; Murphy et al., 2012).

Research has shown that symptoms of hormonal treatment can negatively affect patients' QOL (Leonard et al., 1996; Murphy et al., 2012; Vigler and Inbar, 2002). Without accurate symptom measurement and appropriate intervention aimed to reduce their effects, patients may abandon treatments that have the potential for cure (Barron et al., 2007; Hershman et al., 2011; Neuget et al., 2012).

Israel protocol reflects international standards, recommending that oral endocrine therapy be prescribed to women with metastatic breast cancer or adjuvant therapy after various surgical and oncological treatments. Occasionally, hormonal therapy is given as neoadjuvant treatment to reduce the tumor prior to surgery (Woods et al., 2005) and sometimes, adjuvant post surgery. Women are prescribed SERM's (such as Tamoxifen) for 2.5 years and another 2.5 years of an AI after initial diagnosis and/or chemotherapy, if the tumor is hormone receptor positive.

Social support and breast cancer patients

Perceived social support, an individual's sense of being loved and cared for by a social network, is a key factor in determining how women cope with the diagnosis of breast cancer and subsequent treatment (Sammarco, 2009). Gilbar (2005), in her study among 64 Israeli breast cancer patients, found a highly significant inverse relationship between psychological distress and social support. Northouse and colleagues (1998) examined marital social support in American women, and observations suggested that cancer diagnosis put more of a strain on relationships than those women who received benign biopsy results. Both cancer patients and their husbands also experienced a decline in perceived social support. Women with sufficient social support may experience a survival benefit (Maunsell et al., 1995), in addition to improved health outcomes (Thompson et al., 2013). There is some evidence suggesting that age may be a factor in perceived support, where older women experience less social support than younger women (Sammarco, 2009).

Research on symptom severity and clusters of adjuvant hormonal therapy use has focused mostly on the curative treatment period (Ganz et al., 2011; Kim et al., 2008, 2009) However, there is a lack of data on symptom severity and symptom interference across the treatment trajectory of breast cancer, especially after initial radiation and/or chemotherapy is completed. The Symptom Severity Breast Cancer Treatment Trajectory Study (SSBCTT) seeks to describe and examine symptom severity, symptom interference and perception of social support across the breast cancer treatment trajectory and follows a large cohort of women receiving treatment in a tertiary medical center.

The current study is a cross sectional analysis of 210 women who received follow up treatment at the oncology clinic in a tertiary medical center during 2011. We examined the severity of hormonal symptoms among three groups of women: those who were currently taking hormonal treatment, those who had taken hormonal treatment in the past, and those who had never taken hormonal treatment. In addition to describing the distribution of symptom severity across the three groups, we observed sociodemographic factors that may be correlated with symptom

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