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Relationship between the depression status of patients with resectable non-small cell lung cancer and their family members in China

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ABSTRACT

Purpose: Less work on depression status has been done with family members of patients with non-small cell lung cancer (NSCLC). This study investigated depression status of patients and their family members; and the relationship of the depression status between these two groups.
Methods: This cross-sectional study enrolled 194 patients diagnosed with non-small cell lung cancer as well as their family members. In this study, a self-administered General Information Questionnaire was used to collect general information and the Self-rating Depression Scale (SDS) to assess depression status. Linear correlation analysis was used to probe the relationship of the depression status between patients and their family members.
Results: Of the 194 patients, 148 (76.3%) showed symptoms of depression. 148 (76.3%) family members had depression symptoms. The severity of depression in patients was positively correlated with that of family members ($r = 0.577$, $p < 0.01$).
Conclusions: Patients with lung cancer and their family members suffered depression, and the two were correlated. A prospective study might prove helpful in determining the real relationship existing between the two groups' mental status and whether early detection and intervention might ameliorate this current situation.

Introduction

Lung cancer is the most common form of cancer and the most common cause of cancer-related death in the world (Parkin et al., 1999; Pisani et al., 1999). It is likely that the incidence of lung cancer will continue to increase (Gronberg et al., 2010). And the prognosis for lung cancer patients (especially those with advanced disease) is not favorable (Browning et al., 2009). Compared with other types of cancer, lung cancer patients report some of the highest rates of psychological distress (Zabora et al., 2001)and are at higher risk for psychosocial problems during and after treatment. One out of four persons with lung cancer experience periods of depression or other psychosocial problems during their treatment (Carlsen et al., 2005). For patients and their family members, the diagnosis of lung cancer and the following surgery are significant, negative life events which, not surprisingly, exert noticeable influences on psychological health.

Research indicates that patients with lung cancer suffer negative emotions of fear, anxiety and depression (Jiang and Luo, 2009). These emotions, in turn, affect the whole treatment and postoperative recovery process of the patients. And such negative factors, especially depression, have also been speculated to be a predictor of survival among lung cancer patients. Over the last several decades, investigators have attempted to identify an association between depression and cancer survival, but these efforts have yielded mixed results. A prospective cohort study didn't support the hypothesis that depression is associated with survival among non-small cell lung cancer (NSCLC) patients after curative

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resection (Nakaya et al., 2006). However, one prospective study found a statistically significant association between higher depression scores and an increased risk of mortality from lung cancer (Buccheri, 1998). Studies on perioperative psychological performance arrive at similar conclusions (Naruke, 1995). Additionally, recent meta-analyses suggested that there may be an association between depression and survival (Pinquart and Duberstein, 2010; Satin et al., 2009), the variability in individual study findings may be the result of different relationships according to cancer type and stage (Onitilo et al., 2006)and the lack of prior investigation into molecular determinants of prognosis, as well as numerous factors influencing the depression status of patients with lung cancer (Pearman, 2008).

As the main source of care, family members play an important role on emotional communication with patients and their psychological states can impinge directly on the mental condition of patients (Zhang and Li, 2004). Actually, family members of cancer patients are under high stress (Cameron et al., 2002). Because taking care of a patient with cancer can be overwhelming both mentally and physically, and family members spend a significant amount of their time caring for their ill loved one (Haley et al., 2001), which can further impact family members' life quality and lead to financial problem (Rhee et al., 2008). Rhee and colleagues also found that two-thirds of family members of cancer patients reported having to make major life changes and one-fourth reported difficulty in functioning normally due to increased stress levels since the diagnosis (Rhee et al., 2008). Family members of patients with cancer may experience poorer physical, psychological, and spiritual wellbeing, as well as poorer social functioning, than family members of patients with other chronic diseases (Sherif et al., 2001).

Less work has been done with family members, but research suggests that they also suffer from higher rates of depression. While some studies suggest that family members experience approximately equal symptoms of psychological distress such as depressed or anxious mood when compared to patients (Janda et al., 2007), others report that family members have even higher levels of depression than do the cancer patients that they care for (Braun et al., 2007; Rhee et al., 2008). Depressive symptomatology, as well as other mental health and quality of life-related variables, has been frequently researched and conceptualized as an individual matter, but it seems that symptom levels are likely to co-vary in close relationships (Lim and Zebrack, 2004). Any change in the functioning of one individual may affects the functioning of other family members; therefore not only will any changes in the health status of one individual, such as illness or psychosocial issues, affect the family members, but the way in which the family members cope will in turn affect the patient's physical and psychosocial status. Thus, while external variables such as disease severity and social support may affect patients and family members' quality of life and psychosocial wellbeing directly, the interdependence of patients and family members contribute to a situation in which the health status of all family members can affect each other (Lim and Zebrack, 2004).

Few studies address the associations between the depression status of patients and their family members. The objective of the present study is: (i) To investigate the depression status of patients with resectable NSCLC; (ii) To investigate the depression status of family members; (iii) To investigate the relationship between the depression status of patients with NSCLC and their family members.

Methods

Participants and procedures

This study invited 236 patients with resectable NSCLC patients and their family members to participate this investigation. The patients had been diagnosed for 5–15 days and were scheduled for treatment in the Thoracic Department of The Second Xiangya Hospital of Central South University between Dec. 2010 and June 2011. During the study, 30 invitations had been declined; and 12 invalid data had been excluded. Finally, 194 patients (and, for each, a single member of their family) were enrolled successfully.

Each participant was fully informed as to the purpose of the study before written consent was obtained. Inclusion criteria for patients were as follows: the patient was: i) older than 18 years; ii) willing to participate in and complete the tests; iii) aware of the diagnosis of cancer; iv) had been predetermined to undergo a curative surgical procedure (based on pathology reports indicating an International Union Against Cancer disease stage of T1 toT3, N0/1 and M0); v) able to speak Chinese; vi) presenting no evidence of brain tumor based on computerized tomography or magnetic resonance images of the head; vii) presenting no active concomitant cancer or other medical condition; and viii) physically able to cope with the completion of the questionnaires.

Inclusion criteria for family members were as follows: i) willing to participate in and complete the tests; ii) older than 18 years of age; iii) able to speak Chinese; iv) serving as the main source of economic and social care of the enrolled patient; v) having good relationship with the patient (assessed and recommended by the patient); vi) be in good health (self-reported) and without other significant negative events recently. Above all, only one family member meeting these criteria best was enrolled for each patient. Under the same conditions, we are willing to choose family members living together with patients or being the main source of daily care provision; and the general order of priority (according to multi-factors consideration, such as social relationship, kin and national customs) is that: spouse, children or parents, brothers or sisters, other family members. When it comes to a complicated family relationship or more members meet the criteria, the inclusion decision mainly depends on the recommendation made by the patient and the relation evaluation made by us.

The study design was cross-sectional, descriptive and correlational. One or two days after hospitalization (while the patient was awaiting surgery) all patients and their enrolled family members completed the General Information Questionnaire for general information and Depression Scale (SDS) to assess depression symptoms.

Instruments

General Information Questionnaire A self-administered questionnaire, consisting of demographic data: gender, age, nationality, religion, educational level, marital status, profession, health insurance coverage, and (in the case of family members) relationship to patient. Especially, the data of pathological stage and histology type were finished by patients or their family members, if they had been informed by doctors when making diagnosis; if not, the data were obtained from the clinical data.

Self-rating Depression Scale (SDS) (Wang, 1999)was used to rate depressive mood. It consists of 20 items selected by the factor analysis. It has been translated into a wide variety of languages and its validity and reliability across cultures have been thoroughly assessed. Respondents described how frequently they experienced each symptom on a 4-point scale: 'little of the time', 'some of the time', 'good part of the time', or 'most of the time'. The frequency was converted to an integer between 1 and 4, and the total SDS score is the sum of the numbers obtained in response to the 20 questions. The severity of depression equals the total score/80. <0.5 indicates no depression; 0.5–0.59 indicates slight to mild depression; 0.6–0.69 indicates moderate depression; >0.7 indicates severe depression. A previous study by our colleagues suggested that