Int J Clin Exp Med 2017;10(8):12565-12570
www.ijcem.com /ISSN:1940-5901/IJCEM0052654

Original Article

Clinical characteristics of depressive disorders in inpatients with malignant tumours

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Received January 12, 2017; Accepted June 13, 2017; Epub August 15, 2017; Published August 30, 2017

Abstract: Existing clinical studies on depression of Chinese cancer patients focus on depressive symptoms; very few studied depressive disorders, which are more clinically relevant. This study investigated the prevalence and clinical characteristics of depressive disorders among inpatients with malignant tumours. Two trained psychiatrists interviewed 413 cancer inpatients, who were admitted to the oncology department, with the Chinese version of the Mini International Neuropsychiatric Interview (MINI). Socio-demographic and cancer-related variables of these patients were also collected. Prevalence of depressive disorders among inpatients with malignant tumours was 22.0%. Patients who were 18-59 years old, unmarried, with distant metastasis of cancer, a duration of time since cancer diagnosis ≤1.5 years, received palliative care, and had breast cancer were at higher risk for depressive disorders. Inpatients of the oncology department have high prevalence of depressive disorders. Oncologists should pay more attention to the mental health problems of these patients.

Keywords: Depressive disorder, malignant tumour, inpatient

Introduction

Studies have shown that cancer patients have higher risk of depression than the general population and patients with a variety of chronic diseases (stroke, diabetes mellitus, and cardiovascular disease) [1]. Prevalence of depressive disorders among cancer patients in Western countries has been reported to be 20.7% [2]. Co-occurring depression in cancer has been revealed to be an important risk factor for suicide, reduced quality of life, shortened survival period, extended hospital stay, and reduced compliance of anti-tumour treatment in cancer patients [3-7]. Therefore, depression is of great clinical concern in cancer patients, which is worthy of attention by oncologists. Although there have been several studies in China investigating depression in cancer patients, these studies were all limited to depressive symptoms [8]. Consequently, studies on depressive disorders, a more clinically significant depression diagnosis, are still lacking. In view of this limitation, we conducted a preliminary survey on prevalence and clinical characteristics of depressive disorders in inpatients with cancer.

Materials and methods

Subjects

Because of our limited research resources, this study only recruited sample from an oncology department of a tertiary hospital. We continuously recruited cancer patients from the inpatient list at the time of investigation with the assistance of head nurses in the hospital ward of the Department of Oncology in Tianjin People's Hospital, China, from March to December of 2013. The inclusion criteria were as follows: 1) verbal informed consent, 2) older than 18 years, 3) diagnosed with malignant tumours, without any restrictions in tumour types and stages, 4) no intellectual problems and able to

be interviewed by investigators, and 5) no language disorders. This study excluded patients with communication problems, mental retardation or benign tumours. The research protocol was approved by the Ethics Committee of Tianjin Anning Hospital before the start of the study.

The researchers screened a total of 545 inpatients who met the inclusion conditions during the study period. A total of 477 patients were willing to participate in this study; finally, complete interview data were available for 413 patients (response rate: 75.8%). Among these study subjects, 208 (50.4%) and 205 (49.6%) were males and females, respectively. The mean age was 55.9±19.6 years, ranging between 18 and 85. With respect to marital status, 362 (87.7%), 20 (4.8%), 13 (3.1%), 10 (2.4%), 6 (1.5%), and 2 (0.5%) were married, widowed, unmarried, remarried, separated/divorced, and cohabitating, respectively. For education levels, 82 (19.9%), 149 (36.1%), 32 (7.7%), 123 (29.8%), and 27 (6.5%) patients were illiterate or had not graduated from elementary school, had completed elementary school, middle school, high school, and college and above, respectively. Tumour types: 123 (29.8%), 104 (25.2%), and 76 (18.4%) patients had digestive tract cancer, breast cancer, and lung cancer, respectively. The remaining 110 cases had other tumours (liver cancer, ovarian cancer, and urinary system cancer). Regarding tumour stages, 119 (28.8%), 97 (23.5%), and 197 (47.7%) patients were divided into local, regional, and distant metastasis, respectively. Regarding anti-tumour treatment regimens, 225 (54.5%), 47 (11.4%), and 141 (34.1%) patients were undergoing chemotherapy, radiotherapy, and palliative care, respectively. Among the 132 eligible cases who did not complete study, 78 (59.1%) were men and the mean age was 45.2±23.7 years. A comparison between the subjects who did not complete and completed this study showed no statistically significant difference in the proportion of males (X^2=3.055, P=0.080); however, the ages of the non-completers were significantly lower (t=5.179, P<0.001).

Methods

Research tools

(1) The Chinese version of the Mini International Neuropsychiatric Interview (MINI): MINI is a brief structured interview that is designed by Sheehan and Lecrubier. This instrument can generate diagnoses of 16 types of Axis I mental disorders according to the Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Psychiatric clinicians were trained to use this diagnostic evaluation tool after simple training. At present, this tool has been widely used in multi-centre clinical drug studies and clinical practices. The Chinese version of the MINI was introduced by Si et al. [9]. It has good reliability and validity as well as high consistency among interviewers. In this study, this tool generated diagnoses of 2 types of depressive disorders: major depressive disorder and dysthymia. The timeframe of the diagnosis was current, which was defined as those disorders occurred within the last month, or occurred one month ago but still present in the last month. The 2 types of depressive disorders were diagnosed in modules 1 and 2 of the MINI. At beginning, the module asked 1-2 screening questions on the core symptoms of depressive disorders. If the core symptom screening result was negative, the patient then skipped to the next module; otherwise, all questions were asked throughout the entire module. (2) A self-designed general information questionnaire containing gender, age, education level, and marital status. (3) The tumour clinical characteristics questionnaire including the tumour type, disease stage (local, regional metastasis, and distant metastasis) [10], duration from tumour diagnosis to the study time, number of hospital admissions, and current treatment regimen (chemotherapy, radiotherapy, and palliative care).

Procedures of diagnostic evaluation

The investigators were 2 psychiatrists from the Tianjin Anning Hospital with ≥3 years of clinical experience. These 2 investigators had received training for the use of the MINI and joined an agreement test involving 3 depressed patients, 1 schizophrenia patient, and 2 patients with bipolar disorders before the study. The Kappa coefficient of the consistency of depressive diagnoses was 0.95. During the duration of fieldwork, the investigators first introduced the significance and procedures of this study. After verbal informed consent from the subjects was obtained, one-to-one face-to-face MINI interview was performed (if necessary, medical re-

Table 1. Prevalence of depressive disorders among inpatients with different characteristics

Variable		Number of subjects	Number of cases with depressive disorders	Prevalence	X^2	P
Gender	Male	208	40	0.19	1.917	0.166
	Female	205	51	0.25		
Age (years)	≥60	233	42	0.18	4.999	0.025
	18-59	180	49	0.27		
Marital status	Married	372	76	0.20	5.611	0.018
	Unmarried	41	15	0.37		
Education	High school and above	150	28	0.19	1.555	0.212
	Middle school and below	263	63	0.24		
Employment	Yes	295	64	0.22	0.069	0.793
	No	118	27	0.23		
Stage of cancer	Local	119	19	0.16	6.549	0.038
	Regional	97	18	0.19		
	Metastatic	197	54	0.27		
Time since cancer diagnosis	>1.5 years	215	31	0.14	15.139	<0.001
	≤1.5 years	198	60	0.30		
Number of hospital admissions	≤6	204	51	0.25	2.064	0.151
	>6	209	40	0.19		
Treatment regimen	Chemotherapy	225	33	0.15	20.612	<0.001
	Radiotherapy	47	9	0.19		
	Palliative care	141	49	0.35		
Type of cancer	Digestive tract cancer	123	22	0.18	8.299	0.040
	Breast cancer	104	32	0.31		
	Lung cancer	76	19	0.25		
	Others	110	18	0.16		

cords were reviewed) and variables on socio-demographic and tumour clinical characteristics were also collected.

Statistical analysis

Prevalence of depressive disorders among cancer inpatients was calculated. Prevalence of depressive disorders of the patients according to tumour characteristics was also calculated. Chi-square test was performed to test the differences in prevalence rates of depression between subjects with different socio-demographic and clinical characteristics. SPSS 15.0 was used for these analyses. The statistical significance level was P≤0.05 (two-tailed).

Results

Prevalence of depressive disorders among inpatients with tumours

A total of 91 cases with depressive disorders were detected. Prevalence of depressive disorders was 22.0%. There were 47 and 44 cases of major depressive disorder and dysthymia, respectively, and the corresponding rates were 11.4 and 10.7%, respectively.

Characteristics of patients with different tumour

Results of comparisons of prevalence of depressive disorders between patients with different socio-demographic characteristics (**Table 1**) showed that patients who aged 18-59 years old, unmarried, had significantly higher prevalence of depressive disorders than the patients who aged 60 years old and above, and were married, respectively (P<0.05).

Comparisons of prevalence of depressive disorders among patients with different clinical characteristics (**Table 1**) showed that the incidence of depressive disorders was higher among patients who had distant tumour metastases, a duration of time since cancer diagnosis ≤1.5 years, received palliative care, and breast cancer than those of patients who had local tumours, a duration of time since cancer diagnosis >1.5 years, received chemotherapy/radiotherapy, and other types of cancers, respectively (P<0.05).

Discussion

The review by Tang et al. [11] stated that the current psychooncology services for cancer patients in China are still at the beginning stages. Oncologists in the majority of general hospitals lack knowledge of the important functions of socio-psychological factors in tumour development, progression, treatment, and rehabilitation. There are only a few cancer hospitals in China that provide psychooncology services for patients. Therefore, an analysis of the depressive disorders in inpatients of the oncology department is helpful for increasing the understanding of the mental health of cancer patients by oncologists and is helpful for the rehabilitation of cancer patients. This study showed that more than 1/5 of inpatients with tumours were complicated with depressive disorders, of whom more than half had major depressive disorders. This prevalence was significantly higher than that in general inpatients in general hospitals in China (7-16.2%) [12, 13] and inpatients with stroke (5.4%) [14], but it was close to the 20.7% prevalence of depressive disorders in cancer patients in Western countries [2]. These data indicate that depressive disorders have already become one of the most important mental health problems in inpatients of the oncology department in China.

Previous literature has shown that female gender, young age, and being divorced or windowed were risk factors of depression in cancer patients [15-17]. This study first showed that the depressive disorders were more common among patients who were 18-59 years old and unmarried; however, the differences in the prevalence rates between males and females were not significant. These results were partially similar to those in the literature. The gender difference in depressive disorders in this study was not significant, which might be due to the inclusion of mixed patients with a variety of tumours whereas previous studies primarily included patients with a specific type of cancer. The higher depressive disorder prevalence rates in young patients might be associated with the higher negative influences of malignant tumours on their life and occupation because young people have relatively more responsibilities regarding family burden, occupation, and social pressure than elderly patients [16]. Suffering from cancer is a major negative life event. Patients with a good marital relationship can obtain more family support to buffer the adverse influences of major diseases on their emotional state [15]; therefore, cancer patients who were unmarried had higher depressive disorder prevalence. The literature also showed that late-stage cancer patients had higher risk of depression [18, 19], which was similar to the analysis results that showed that patients who had distant tumour metastases and received palliative care had higher prevalence of depressive disorders. These higher depression rates were considered to be associated with the poor quality of life and prognosis of cancer patients with distant metastasis. Patients who received palliative care were also in the late stages of cancer; thus, the depressive disorder prevalence was also naturally higher in these patients. In addition, the analytic results of this study found that patients with a duration between the definite diagnosis of cancer and the investigation time <1.5 years were prone to develop depression; similar results have been reported in the literature [20, 21]. This finding might be associated with large psychological burdens and the fear of death of patients at the early stages of a definite diagnosis of cancer. Over time, patients gradually accept the reality, and the severity of psychological reactions decreased; therefore, the depressive disorder prevalence also decreased accordingly. Moreover, this study found that types of tumours had significantly associations with depressive disorders. The prevalence of depressive disorders among breast cancer patients was the highest. This finding was also similar to two previous reports [21, 22], because breast cancer was associated with both the major health hazard of the tumours and with the damage of appearance image and sexual function of female patients [21]. In summary, these results showed that depressive disorders of cancer patients were associated with a range of socio-demographic factors and clinical characteristics, indicating that depression in cancer patients might be the result of complex social and clinical factors. The above findings are consistent with the emphasis of the importance of socio-psychological intervention for cancer patients in the current clinical practice of psychooncology [11, 23].

Because this was a preliminary study, the primary limitation of this study was that the participants were only recruited from inpatients of an oncology department of a tertiary general

hospital. Cancer patients in outpatient departments and other categories of hospitals were not included; therefore, the representativeness of the study sample was limited. Additionally, the study subjects who did not complete this study were younger than those who completed this study. Because the analysis of disease characteristics of depressive disorders showed that younger patients had higher risks of depression, this study might underestimate the prevalence of depressive disorders amongst cancer patients. Finally, this study only roughly analyzed the disease characteristics of depression in patients with malignant tumours and did not perform in-depth multivariate analyses. In addition, this study did not collect past mental disorder history, family history, age of first onset of depression attack, disease courses, and treatment conditions of patients with confirmed depressive disorders. Therefore, the analysis of the characteristics of cancer patients complicated with depressive disorders was not comprehensive. This limitation will be further improved in future studies. Although there are limitations, this is the first study to reveal the prevalent depressive disorders in inpatients with malignant tumours in China, suggesting the importance of psychosocial interventions in cancer treatment and rehabilitation and indicating the importance of strengthening psychooncology studies and services in the oncology department.

Disclosure of conflict of interest

None.

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