that agitation gradually increased from the morning until a peak around 1600 hours, then decreased thereafter. However, we did not examine the temporal pattern of the agitated behaviours in AD patients. A study using the ABID to examine the temporal pattern of agitated behaviours in patients with dementia is needed. Third, the data used in the present study was obtained from two outpatient clinics. Future large-scale studies are needed to validate these important findings for a wide range of dementia patients.

In conclusion, the present study suggests that the Japanese version of the ABID is a reliable and valid instrument, and that agitated behaviours can be divided into three subtypes: (i) 'physically agitated behaviour'; (ii) 'verbally agitated behaviour'; and (iii) 'psychosis'. As suggested by Cohen-Mansfield,[1,20] understanding these subtypes of agitation might have important clinical implications for the formulation of individualized treatment plans for agitation in patients with dementia. Clinical interventions for agitation in patients with dementia that are based on these three subtypes of agitated behaviour might be beneficial for distressed caregivers in Japan.

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REFERENCES

1 Cohen-Mansfield J. Agitation in the elderly definitional and theoretical conceptualizations. In: Hay DP, Klein DT *et al*, eds. *Agitation in Patients with Dementia: A Practical Guide to Diagnosis and Management*. Washington, DC: American Psychiatric Publishing Inc., 2003; 1–21.
2 Hirono N, Mori E, Tanimukai S *et al*. Distinctive neurobehavioral features among neurodegenerative dementias. *J Neuropsychiatry Clin Neurosci* 1999; **11**: 498–503.
3 Hirono N, Kobayashi H, Mori E. Caregiver burden in dementia: evaluation with a Japanese version of the Zarit caregiver burden interview. *No To Shinkei* 1998; **50**: 561–567. (in Japanese).
4 Cummings JL, Mega M, Gray K, Rosenberg-Thompson S, Carusi DA, Gornbein J. The Neuropsychiatric Inventory: comprehensive assessment of psychopathology in dementia. *Neurology* 1994; **44**: 2308–2314.
5 Cohen-Mansfield J, Marx MS, Rosenthal AS. A description of agitation in a nursing home. *J Gerontol* 1989; **44**: 77–84.
6 Tractenberg RE, Weiner MF, Thal LJ. Estimating the prevalence of agitation in community-dwelling persons with Alzheimer's disease. *J Neuropsychiatry Clin Neurosci* 2002; **14**: 11–18.
7 Finkel SI, Lyons JS, Anderson RL. Reliability and validity of the Cohen-Mansfield Agitation Inventory in institutionalized elderly. *Int J Geriatric Psychiatry* 1992; **7**: 487–490.
8 Koss E, Weiner M, Ernesto C *et al*. Assessing patterns of agitation in Alzheimer's disease patients with the Cohen-Mansfield Agitation Inventory. The Alzheimer's Disease Cooperative Study. *Alzheimer Dis Assoc Disord* 1997; **11**: 45–50.
9 Cohen-Mansfield J, Werner P, Watson V, Pasis S. Agitation among elderly persons at adult day-care centers: the experiences of relatives and staff members. *Int Psychogeriatr* 1995; **7**: 447–458.
10 Rabinowitz J, Davidson M, De Deyn PP, Katz I, Brodaty H, Cohen-Mansfield J. Factor analysis of the Cohen-Mansfield Agitation Inventory in three large samples of nursing home patients with dementia and behavioral disturbance. *Am J Geriatr Psychiatry* 2005; **13**: 991–998.
11 Logsdon RG, Teri L, Weiner MF *et al*. Assessment of agitation in Alzheimer's disease: the agitated behavior in dementia scale. *J Am Geriatr Soc* 1999; **47**: 1354–1358.
12 Teri L, Logsdon RG, McCurry SM. Nonpharmacologic treatment of behavioral disturbance in dementia. *Med Clin North Am* 2002; **86**: 641–656.
13 Homma A, Niina R, Ishii T *et al*. Assessment of validity of of a Japanese version of Cohen-Mansfield Agitation Inventory. *Jpn J Geriatr Psychiatry* 2002; **13**: 831–835. Japanese).
14 Ikeda M, Shigenobu K, Fukuhara R *et al*. Delusions of Japanese patients with Alzheimer's disease. *Int J Geriatr Psychiatry* 2003; **18**: 527–532.
15 Cohen-Mansfield J, Billig N. Agitated behaviors in the elderly. I. A conceptual review. *J Am Geriatr Soc* 1986; **34**: 711–721.
16 McKhann G, Drachman D, Folstein M, Katzman R, Price D, Stadlan EM. Clinical diagnosis of Alzheimer's disease: report of the NINCDS-ADRDA Work Group under the auspices of Department of Health and Human Services Task Force on Alzheimer's Disease. *Neurology* 1984; **34**: 939–944.
17 Hughes CP, Berg L, Danziger WL, Coben LA, Martin RL. A new clinical scale for the staging of dementia. *Br J Psychiatry* 1982; **140**: 566–572.
18 Zarit SH, Reever KE, Bach-Peterson J. Relatives of the impaired elderly: correlates of feelings of burden. *Gerontologist* 1980; **20**: 649–655.
19 Folstein MF, Folstein SE, McHugh PR. 'Mini-mental state'. A practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res* 1975; **12**: 189–198.
20 Cohen-Mansfield J, Libin A. Verbal and physical non-aggressive agitated behaviors in elderly persons with dementia: robustness of syndromes. *J Psychiatr Res* 2005; **39**: 325–332.
21 Choy CN, Lam LC, Chan WC, Li SW, Chiu HF. Agitation in Chinese elderly: validation of the Chinese version of the Cohen-Mansfield Agitation Inventory. *Int Psychogeriatr* 2001; **13**: 325–335.
22 Logsdon RG, Teri L, McCurry SM, Gibbons LE, Kukull WA, Larson EB. Wandering: a significant problem among community-residing individuals with Alzheimer's disease. *J Gerontol B Psychol Sci Soc Sci* 1998; **53**: 294–299.
23 Cohen-Mansfield J, Werner P. Management of verbally disruptive behaviors in nursing home residents. *J Gerontol A Biol Sci Med Sci* 1997; **52**: 369–377.
24 Cohen-Mansfield J, Taylor L, Werner P. Delusions and hallucinations in an adult day care population. A longitudinal study. *Am J Geriatr Psychiatry* 1998; **6**: 104–121.
25 Aalten P, de Vugt ME, Lousberg R *et al*. Behavioral problems in dementia: a factor analysis of the neuropsychiatric inventory. *Dement Geriatr Cogn Disord* 2003; **15**: 99–105.
26 Cohen-Mansfield J. Temporal patterns of agitation in dementia. *Am J Geriatr Psychiatry* 2007; **15**: 395–405.

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Oncologists' Recognition of Supportive Care Needs and Symptoms of Their Patients in a Breast Cancer Outpatient Consultation

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Objective: The purpose of this study was to investigate the accuracy of oncologists' recognition of their patients' supportive care needs and symptoms in breast cancer outpatient consultation in Japan.
Methods: The participants included a sample of randomly selected outpatients with breast cancer and two oncologists. The patients responded to validated self-administered questionnaires to assess their supportive care needs and symptoms. The oncologists responded to a questionnaire in which they indicated their perception of level of the same set of needs or symptoms following consultation. The two data sets were compared statistically.
Results: Complete data sets were available for 408 patients. Low negative predictive values for the psychological (30%) and information domain (30%) indicated that the patients often have psychological and information needs that the oncologists do not appropriately recognize. The sensitivity and specificity of the physicians' assessment for all physical symptoms except pain were <40 and >85%, respectively, indicating that the physicians could not detect, but could rule out the possibility of a patient experiencing physical symptoms. Borderline/clinical depression and anxiety were the only two symptoms that the oncologists reported more frequently than the patients did. As a result, the specificity of the physicians' assessment for the detection of borderline/clinical depression and anxiety was relatively low (74 and 27%).
Conclusions: Oncologists' recognition may not accurately reflect their patients' supportive care needs and symptoms in usual care. Incorporation of a standard assessment system for supportive care needs and symptoms in clinical practice must heighten the oncologists' awareness of their patients' these problems.

Key words: quality of life – palliative care – psycho-oncology – breast neoplasms

INTRODUCTION

Breast cancer has been the most frequently diagnosed cancer among Japanese women since the mid-1990s (1). Currently, more than 40 thousand women are reported to develop breast cancer annually. Patients with breast cancer frequently experience both physical and psychological symptoms. Anti-cancer treatments, such as surgery, chemotherapy, hormonal therapy or any/all of these modalities in combination, often cause a broad range of symptoms such as lymphedema (2), menopausal symptoms (3), pain, fatigue, nausea/vomiting and appetite loss (4,5). Psychological and behavioral symptoms such as insomnia, depression and cognitive disturbances are also frequent and disrupt the patients' quality of life (6–8). Furthermore, the quality of life of these patients often deteriorates, especially if they are 50 years of age or younger (9).

More recently, the importance of assessing cancer patients' supportive care needs has come to be recognized (10). Supportive care needs can be defined as requirements for care arising during illness and treatment to manage symptoms and side effects, enable adaption and coping, optimize understanding and informed decision-making, and minimize decrements in functioning. (11) Each patient's experience of a particular problem varies individually; therefore, the severity of a problem alone is not the best or only indicator of a patient's supportive care needs. Assessment of the patient-perceived needs would enable medical staffs to recognize what kind of help each of our patients requires directly, and to provide care to meet such requirements. Nonetheless, the accuracy of physicians' recognition of their patients' supportive care needs has not yet been investigated. One exception was a study conducted by Newell et al. (12), who explored how well-informed attending oncologists were of the physical symptoms associated with chemotherapy, psychological symptoms and the supportive care needs of 204 patients with cancers of various lesions and stages. They found that (i) fatigue, nausea, vomiting and hair loss were well-recognized symptoms, (ii) the level of awareness for psychological symptoms tended to be lower than that for physical symptoms, (iii) the perception level of oncologists about the supportive care needs of their patients was higher than the level reported by the patients themselves and (iv) the oncologists' workload and rapport with the patients were associated with their awareness of depression and the psycho-social care needs of their patients; however, the fact that the vast majority of participants were undergoing systemic chemotherapy limited the generalizability of their findings. Furthermore, no studies reported how well oncologists recognize patients' supportive care needs in Asian countries.

Effective symptom management has been hindered by the inadequate assessment by medical professionals of their patients' symptoms. A previous study demonstrated that discrepancy in the assessment of pain severity between the patients themselves and their physicians was a strong predictor of inadequate pain management (13). Few studies have investigated how comprehensively an attending oncologist recognizes the severity of the physical symptoms and psychological symptoms of their patients in routine clinical practice. Petersen et al. (14) compared the patients' own and their physicians' assessments of the health-related quality of life in the palliative care setting. They found that the physicians reported fewer problems or symptoms than the patients did, for all domains, except physical and social functioning, and that the agreement between the patients and their physicians was lowest for emotional and social functioning among the symptom and quality-of-life domains defined by EORTC QLQ-C30. Brunelli et al. (15) examined how accurately health-care providers (including both physicians and nurses) assess the quality of life of terminally ill cancer patients and found that the agreement rate between the physicians and their patients was higher for physical symptoms than for psychological or cognitive symptoms. Some other previous studies have investigated the accuracy of physicians' evaluation of the intensity of single symptoms such as pain (13), fatigue (16), depression (17) and adverse effects of anticancer treatments (18), and of the quality of life of patients with cancer (19).

In this study, we investigated the accuracy of the attending oncologists' assessment of supportive care needs and symptoms of their patients in a large sample of Japanese outpatients with breast cancer in a routine clinical practice setting, in accordance with the principles adopted in Newell's study described above.

PATIENTS AND METHODS

SUBJECTS

This is a secondary analysis of data collected for a previously published study, in which we investigated the psychometric properties of the Japanese version of the Short-form Supportive Care Needs Survey questionnaire (SCNS-SF34-J). The study subjects were ambulatory female patients with breast cancer attending the outpatient clinic of the Department of Oncology, Immunology and Surgery at Nagoya City University Hospital.

The eligibility criteria for inclusion in the study were women who were (i) diagnosed to have breast cancer, (ii) 20 years of age or older, (iii) informed of the cancer diagnosis and (iv) well enough to complete the survey questionnaire (0–3 on the ECOG performance status). The exclusion criteria were patients with (i) severe mental or cognitive disorders, or (ii) inability to understand the Japanese language. We selected the participants at random using a visiting list and a random number table for logistic reasons (to control the number of patients enrolled per day).

This study was approved by the Institutional Review Board and Ethics Committee of Nagoya City University Graduate School of Medical Sciences, Japan, and was conducted in accordance with the principles laid down in the Helsinki Declaration. Written consent was obtained from each patient after she had been given a thorough explanation of the purpose and method of the study.

PROCEDURE

PATIENTS' SURVEY

After informed consent was obtained, the patients were asked to complete the self-administered questionnaire described below at home and return it the following day. In the case of inadequate answers, clarifications were sought over the telephone.

SUPPORTIVE CARE NEEDS

The Short-form Supportive Care Needs Survey questionnaire (SCNS-SF34) is a self-administered instrument for assessing the perceived needs of patients with cancer (20). It includes 34 items mapped to five domains of need: psychological, health system and information, physical and daily living, patient care and support, and sexuality. The psychological domain assesses the needs related to emotions and copings, such as 'Fears about the cancer spreading'. The health system and information need includes items related to hospitals and preferences for information about the disease and its treatment, such as 'being treated in a hospital or clinic that is as physically pleasant as possible' and 'being adequately informed about the benefits and side-effects of treatments before you choose to have them'. The physical and daily living domain assesses the needs related to physical symptoms and performing activities, such as 'work around the home' and 'lack of energy/tiredness'. The patient care and support domain includes items related to health-care providers and choices, such as 'reassurance by medical staff that the way you feel is normal'. Finally, the sexuality domain assesses the needs related to sexual relationships, such as 'changes in sexual feelings'. Respondents are asked to indicate their level of need for help over the last month in relation to their having cancer using the following five response options {1 [no need (not applicable)], 2 [no need (satisfied)], 3 [low need], 4 [moderate need] and 5 [high need]}. The validity and reliability of the Japanese version of this scale have been established by the authors (21).

PHYSICAL SYMPTOMS

The European Organization for Research and Treatment of Cancer Quality of Life-C30 questionnaire (EORTC QLQ-C30) was used for the comparative measurement; this is one of the most frequently used self-rating questionnaires to assess cancer patients' quality of life (22). It consists of 30 items and 5 multi-item function subscales plus global health status/quality-of-life subscales (physical, role, emotional, cognitive and social function), 4 multi-item symptom subscales (fatigue, pain, nausea and vomiting) and 6 separate items to assess the severity of 5 symptoms (dyspnea, sleep disturbance, appetite loss, diarrhea, and constipation) and the financial impact. The Japanese version of the EORTC QLQ-C30 has been established (23). We added three items to determine the severity of chemotherapy-related symptoms that are frequently experienced by the study population (hair loss, hot flushes and tingling).

PSYCHOLOGICAL SYMPTOMS

The Hospital Anxiety and Depression Scale (HADS) was used to evaluate the severity of anxiety and depression (24). This questionnaire consists of a seven-item anxiety subscale and a seven-item depression subscale. It assesses the patients' mental status over the preceding week. We previously established the reliability and validity of the Japanese version of this questionnaire in cancer patients (25). A previous study suggests that each subscale score enables us to classify patients' anxiety and depression levels as low (a score of 0–7), borderline (8–10) and clinical (11–21).

SOCIO-DEMOGRAPHIC AND BIOMEDICAL FACTORS

An *ad hoc* self-administered questionnaire was used to obtain information on the socio-demographic status of the patients, including the marital status, level of education and employment status. Performance status, as defined by the Eastern Cooperative Oncology Group (ECOG), was evaluated by the attending physicians. All other medical information (e.g. regarding the clinical stage and anti-cancer treatment) was obtained from the patients' medical records.

ATTENDING ONCOLOGISTS' SURVEY

Attending physicians were asked to complete a questionnaire which included the following items immediately after their consultation and were blinded to the results of the patients' questionnaire responses. They were provided with manuals to fill this questionnaire, including the definition of each response option and word definitions.

SUPPORTIVE CARE NEEDS

The questions were designed to determine whether the physician believed whether his/her patient had experienced any/all of the five domains of needs included in the SCNS, with four response options [1 (no need), 2 (low need), 3 (moderate to high need) and 4 (don't know)].

PHYSICAL SYMPTOMS

The questions were designed to determine whether the physician believed that his/her patient had experienced any of the 13 potential symptoms (corresponding to the items in the patients' questionnaire) during the week prior to the outpatient's visit to the clinic. The enquiry about the symptoms was made using the same terms as for the patients. Four response options were used [1 (not had it at all), 2 (had it a little), 3 (had it quit a bit/very much) and 4 (don't know)]. This response system corresponded to the Likert scale applied in the EORTC QLQ-C30 questionnaire.

PSYCHOLOGICAL SYMPTOMS

The questions were designed to determine whether the physician believed that his/her patient was currently experiencing anxiety and depression, respectively, with four response options [1 (low), 2 (borderline), 3 (clinical) and 4 (don't know)].

Statistical Analysis

We consider that whether oncologists perceive their patients have a need/symptom correctly or not is the foundation of symptom management rather than they do the intensity a need/symptom accurately. Thus, each of the responses by both the patients and oncologists was dichotomized as experienced and not experienced, and we compared these two data sets statistically by calculating the following indices.

Sensitivity and Specificity

Sensitivity is a statement of probability, defined as the proportion of positive results obtained on the patients for the condition being evaluated. Specificity is a statement of the proportion of negative results among those who do not have the condition being evaluated. These two are the measures of the performance of a binary classification test, not influenced by prevalence of the condition being evaluated.

Positive Predictive Value and Negative Predictive Value

Positive predictive value (PPV) is the proportion of patients who have the condition among those with a positive test result, and negative predictive value (NPV) is the proportion of patients who do not have the condition among those who have a negative test result. PPV and NPV are dependent on the population being tested and are influenced by the prevalence of the condition being evaluated. A high specificity causes the PPV to increase and a high sensitivity causes the NPV to increase, assuming that the condition being evaluated is constant.

Cohen's κ Index

This measures the agreement, taking into account the agreement occurring by chance, and ranges from -1 to 1. A value of zero would indicate accidental agreement. The greater the value, the higher the agreement.

A P value of <0.05 was adopted as the significance level in all of the statistical analyses, and all the P values reported were two-tailed. All the statistical procedures were performed using the SPSS software, version 13.0J, for Windows (SPSS Inc., 2004).

RESULTS

Patient Characteristics

A pool of 420 potential participants was identified for the study (Table 1). Twelve patients were excluded: seven as they refused to participate, two because of cognitive disturbance, one because of very advanced disease and two for not providing responses despite giving their consent to participate. The socio-demographical and clinical characteristics of the remaining 408 patients are shown in Table 1. The mean ($\pm$ SD) and median age of the study population were 56.1 ($\pm$ 12.1) and 55 years, respectively.

Supportive Care Needs

The prevalence of psychological needs as perceived by the oncologists (70.0%) was as high as that reported by the patients themselves (74.0%), and the sensitivity and specificity for psychological need were the greatest and the lowest, respectively, among the needs domains (Table 2). The sensitivity and specificity were the lowest (18.8%) and greatest (87.9%), respectively, for the sexual domain. The NPV for the psychological and information domain was very low (30%). The κ value ranged from <0.01 for 'information need' to 0.15 for 'care and support needs'.

Physical Symptoms

The most prevalent symptom was fatigue (76.5%), followed by pain (57.6%), insomnia (46.2%) and hot flushes (41.4%) (Table 2). For each of the physical symptoms, the prevalence

Table 1. Study characteristics ($n = 408$)

Characteristic	n	Percent
Age	Mean: 56.1 (SD = 12.1), median: 55 (range, 27–89)	
Sex		
Female	408	100.0
Marital status		
Married	311	76.2
Job		
Employed (full time/part time)	182	44.6
Clinical stage		
0	24	5.9
I	142	34.8
II	148	36.3
III	24	5.9
IV	11	2.7
Recurrence	59	14.5
ECOG performance status		
0	369	90.4
1	33	8.1
2	4	1.0
3	2	0.5
History of anticancer treatment		
Surgery	381	93.4
Chemotherapy	180	44.1
Radiation therapy	157	38.5
Days after diagnosis	Mean: 1039.8 (SD = 1352.7), median: 701 (range, 11–17915)	

ECOG, Eastern Cooperative Oncology Group.

Table 2. Supportive care needs and symptoms: patients' report vs. oncologists' perceptions ($n = 408$)

Measurement	Prevalence (%) reported by		Sensitivity[a] (%)	Specificity[b] (%)	PPV[c]	NPV[d]	κ
	Patients	Oncologists					
Needs							
Psychological	74.0	70.0	71.8	34.9	75.8	30.3	0.06
Health system and information	69.8	31.9	32.0	68.3	70.0	30.3	<0.01
Physical	47.7	44.2	51.0	62.0	55.0	58.1	0.13
Patient care and support	44.2	27.8	35.6	78.4	56.6	60.5	0.15
Sexual	20.8	13.5	18.8	87.9	29.1	80.5	0.08
Physical symptoms							
Fatigue	76.5	24.8	28.2	86.5	87.1	27.0	0.08
Pain	57.6	46.3	58.5	70.3	72.9	55.5	0.28
Insomnia	46.2	9.1	11.2	92.7	56.8	54.9	0.04
Hot flashes	41.4	16.0	22.6	88.7	58.5	61.9	0.12
Numbness	39.7	8.6	11.2	93.1	51.4	61.5	0.05
Constipation	39.6	2.9	3.1	97.2	41.7	60.5	<0.01
Dyspnea	32.4	1.0	2.3	99.6	75.0	68.1	0.03
Appetite loss	23.3	8.6	17.9	94.2	48.6	79.1	0.16
Diarrhea	17.6	1.5	5.6	99.4	66.7	83.1	0.08
Hair loss	17.4	9.1	38.0	97.0	73.0	88.1	0.43
Nausea	14.0	6.1	28.1	97.4	64.0	89.3	0.33
Vomiting	5.1	1.0	4.8	99.2	25.0	95.0	0.06
Psychological symptoms							
Anxiety (borderline/clinical)	20.8	74.0	77.6	26.9	21.9	82.1	0.02
Depression (borderline/clinical)	16.9	26.5	30.4	74.3	19.4	84.0	0.04
Depression (clinical)	5.6	1.7	8.7	98.7	28.6	94.8	0.11
Anxiety (clinical)	5.1	4.4	9.5	95.9	11.1	95.1	0.06

[a] The sensitivity is the proportion of true positives of all patients who have a need/symptom.
[b] The specificity is the proportion of true negatives of all patients who do not have a need/symptom.
[c] The positive predictive value (PPV) is the proportion of patients who have a need/symptom among those who are perceived to do so by oncologists.
[d] The negative predictive value (NPV) is the proportion of patients who do not have a need/symptom among those who are perceived not to have a need/symptom by oncologists.

reported by the physicians was lower than that reported by the patients themselves. The sensitivity was <40% and specificity >85% for all physical symptoms except pain (59 and 70%, respectively). The NPV was the lowest for fatigue (27%). The κ values ranged from <0.01 for constipation to 0.43 for hair loss.

PSYCHOLOGICAL SYMPTOMS

About 5% of the patients reported clinical depression and anxiety, respectively, and about 15% reported borderline depression and anxiety, respectively (Table 2). Borderline/clinical depression and anxiety were the only two symptoms that the oncologists reported more frequently than the patients themselves among all investigated variables. As a result, the specificity for borderline/clinical depression and anxiety were moderate (74%) and low (27%), respectively. On the other hand, the sensitivity and specificity for clinical depression and anxiety were less than 10% and more than 95%, respectively. Besides the difference in the classification of the symptom severity, the PPVs for psychological symptoms were the lowest, ranging from 11% for clinical anxiety to 29% for clinical depression. The κ value ranged from 0.02 for borderline/clinical anxiety to 0.11 for clinical depression.

DISCUSSION

Provision of supportive care to meet patients' individual needs is instrumental in enhancing their quality of life. Oncologists' awareness of the supportive care needs and symptoms of cancer patients is crucial to achieving this goal. The results of this study, however, indicate that they may have difficulty in accurately assessing such needs or symptoms of the patients in an oncology breast cancer outpatient clinic.

One of the strengths of this study was the large sample size. Selection of participants at random and the very high participation rate proved the external validity. According to the breast cancer registry developed by the Japanese Breast Cancer Society in the year 2006, there were 20 510 newly diagnosed patients throughout Japan, and the characteristics of the patients with primary breast cancer in Japan were as follows: 99.5% were females, the mean age of the patients was 57.2 years, and the most frequent clinical stage was I (35.4%), followed by IIA (26.2%) and IIB (9.9%); the characteristics of our present study population were similar. Thus, we consider that this population can be thought of as being representative of Japanese breast cancer patients. Third, patients with a broad spectrum of supportive care needs and physical and psychological symptoms were assessed using validated questionnaires.

Before discussing the results, attention should be paid to whether a statistical index is dependent on the prevalence of the condition being evaluated. Sensitivity and specificity are independent of the prevalence of the condition and therefore indicate the screening capability of the test itself. But from the clinical point of view, interest must be focused on the proportion of patients who actually 'have' the condition being evaluated among those who have a 'positive' test result and those who 'do not' have the condition among those who have a 'negative' test result. PPV and NPV provide the clinical usefulness of the test as it is applied in clinical practice. Cohen's κ coefficient values show the overall level of agreement beyond chances, but fail to provide clinically meaningful information equivalent to that provided by the above indexes; the values also depend on the observed marginal prevalence. But this is simply a consequence of the purpose of κ.

One of the important findings of this study is that it clarified that the oncologists' recognition of the supportive care needs of their patients was less than optimal among any of domains, although it is highly important to provide care so as to directly meet the needs of individual patients' requirements. Especially, the lowest NPV for psychological needs and information needs indicated that the patients often have psychological and information needs that are not recognized by their physicians. The very low PPV for sexual needs may suggests that sexual needs remain unreported, even though the importance of sexual problems in cancer patients is getting better recognized (26). Few studies have explored the accuracy of the physicians' assessment of supportive care needs in their patients. Newell et al. conducted an investigation in mixed cancer patients undergoing chemotherapy (12). The patients' supportive care needs were assessed using the Cancer Needs Questionnaire (CNQ), a precursor of the SCNS-SF34, and the physicians reported their recognition using the same questionnaire as that applied in this study. They found that the rate of supportive care need perceived by the physicians was much higher than that reported by the patients, and that the sensitivity and specificity ranged from 96% (for health information) to 50% (for interpersonal communication), and 49% (for care and support) to 31% (for information need), respectively. As compared with that study, the rate of need reported by the patients was higher in this study, and the sensitivity and specificity obtained in this study were relatively low and relatively high, respectively. These discrepancies may be explained by the difference in the questionnaire used to assess the patients' needs, or the difference in the format of the questionnaire (use of touch-screen computer in Newell's study). Also, physicians may have begun to pay more attention to or better anticipate their patients' need of supportive care, since the participants of Newell's study were undergoing chemotherapy.

Among physical symptoms, pain was one of the best recognized symptoms, but the recognition level was still not optimal. The sensitivity and specificity for all physical symptoms other than pain were <40 and $>85\%$, respectively, indicating that the physicians could not detect, but could rule out the possibility of a patient experiencing physical symptoms. The lowest NPV and highest disagreement level for fatigue suggested that this symptom may be one of the most underestimated symptoms, consistent with a previous report (27). The κ value was the highest for hair loss among all the symptoms and need, but even that remained to be moderate, although hair loss is one of the symptoms that can be observed visually. This result indicated that each patient perceives and reports her symptoms in a very individual manner; therefore, the physicians need to ask each patient directly about her own experience.

Previous literature has reported the difficulty of physicians in assessing the psychological symptoms of their patients (11,16,27). Our results showed that the physicians had a difficulty assessing severity of psychological symptoms and recognized clinical depression and anxiety in less optimal level. The low PPVs for anxiety and depression may indicate that oncologists may not be familiar with depression and anxiety in their patients. The fact that physicians reported borderline/clinical anxiety three times more frequently than the patients themselves indicates that physicians anticipate that many of their patients have some level of psychological distress. Another explanation is that the fact that the research group which mainly consists of psychiatrists observed their practice might partly influence their ratings.

This study had some limitations as well as strengths. First, the results may be dependent on the oncologists' personal ability to recognize patients' problems, and only two oncologists participated in this study. Therefore, enrollment of a larger number of oncologists may be required to allow generalization of the findings in further study. Second, situational factors which might influence the accuracy of assessment in each consultation, such as the workload pressure, duration of the doctor–patient relationship etc., were not taken into account. Third, this study did not investigate factors associated with oncologists' perception of their patients' needs and symptoms, since this study did not investigate potential factors associated with them comprehensively. And again including only two oncologists hampered those analyses. Forth, the fact that this study was conducted on patients with specific characteristics suggests that caution must be exercised while extrapolating the results to patients with other characteristics.

The results of this study indicate that oncologists' recognition may not accurately reflect their patients' supportive care needs and symptoms. Implementation of routine assessment of patients' problems and feedback them to oncologists using appropriate assessment tools in clinical practice would be beneficial. Other medical professionals, such as nurses, could help with patient examinations and work to facilitate information exchange between the physicians and patients. A randomized controlled trial failed to prove the efficacy of routine quality-of-life measurement in either doctor–patient communication or patient well-being in oncology practice (28). Also, some other randomized controlled trials conducted to investigate the efficacy of provision of psychosocial support based on needs questionnaires have been reported (29,30), but the results were controversial. These studies indicate that intervention combined with routine symptom assessment/feedback to oncologists and psychosocial care provided according to patients' needs may be meaningful, particularly in patients with high needs or distress levels. Further studies to investigate the effectiveness of such interventions are required.

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Conflict of interest statement

None declared.

References

1. Matsuda T, Marugame T, Kamo K, Katanoda K, Ajiki W, Sobue T. Cancer incidence and incidence rates in Japan in 2005: based on data from 12 population-based cancer registries in the Monitoring of Cancer Incidence in Japan (MCIJ) project. *Jpn J Clin Oncol* 2011;41:139–47.
2. Norman SA, Localio AR, Potashnik SL, Simoes Torpey HA, Kallan MJ, Weber AL, et al. Lymphedema in breast cancer survivors: incidence, degree, time course, treatment, and symptoms. *J Clin Oncol* 2009;27:390–7.
3. Hickey M, Saunders C, Partridge A, Santoro N, Joffe H, Stearns V. Practical clinical guidelines for assessing and managing menopausal symptoms after breast cancer. *Ann Oncol* 2008;19:1669–80.
4. Arndt V, Stegmaier C, Ziegler H, Brenner H. A population-based study of the impact of specific symptoms on quality of life in women with breast cancer 1 year after diagnosis. *Cancer* 2006;107:2496–503.
5. Given CW, Sikorskii A, Tamkus D, Given B, You M, McCorkle R, et al. Managing symptoms among patients with breast cancer during chemotherapy: results of a two-arm behavioral trial. *J Clin Oncol* 2008;26:5855–62.
6. Akechi T, Okuyama T, Imoto S, Yamawaki S, Uchitomi Y. Biomedical and psychosocial determinants of psychiatric morbidity among postoperative ambulatory breast cancer patients. *Breast Cancer Res Treat* 2001;65:195–202.
7. Bower JE. Behavioral symptoms in patients with breast cancer and survivors. *J Clin Oncol* 2008;26:768–77.
8. Turner J, Kelly B, Swanson C, Allison R, Wetzig N. Psychosocial impact of newly diagnosed advanced breast cancer. *Psychooncology* 2005;14:396–407.
9. Avis NE, Crawford S, Manuel J. Quality of life among younger women with breast cancer. *J Clin Oncol* 2005;23:3322–30.
10. Wen KY, Gustafson DH. Needs assessment for cancer patients and their families. *Health Qual Life Outcomes* 2004;2:1–12.
11. Ream E, Quennell A, Fincham L, Faithfull S, Khoo V, Wilson-Barnett J, et al. Supportive care needs of men living with prostate cancer in England: a survey. *Br J Cancer* 2008;98:1903–9.
12. Newell S, Sanson-Fisher RW, Girgis A, Bonaventura A. How well do medical oncologists' perceptions reflect their patients' reported physical and psychosocial problems? Data from a survey of five oncologists. *Cancer* 1998;83:1640–51.
13. Cleeland CS, Gonin R, Hatfield AK, Edmonson JH, Blum RH, Stewart JA, et al. Pain and its treatment in outpatients with metastatic cancer. *N Engl J Med* 1994;330:592–6.
14. Petersen MA, Larsen H, Pedersen L, Sonne N, Groenvold M. Assessing health-related quality of life in palliative care: comparing patient and physician assessments. *Eur J Cancer* 2006;42:1159–66.
15. Brunelli C, Costantini M, Di Giulio P, Gallucci M, Fusco F, Miccinesi G, et al. Quality-of-life evaluation: when do terminal cancer patients and health-care providers agree? *J Pain Symptom Manage* 1998;15:151–8.
16. Hinds PS, Hockenberry-Eaton M, Gilger E, Kline N, Burleson C, Bottomley S, et al. Comparing patient, parent, and staff descriptions of fatigue in pediatric oncology patients. *Cancer Nurs* 1999;22:277–88; quiz 88–9.
17. Passik SD, Dugan W, McDonald MV, Rosenfeld B, Theobald DE, Edgerton S. Oncologists' recognition of depression in their patients with cancer. *J Clin Oncol* 1998;16:1594–600.
18. Fromme EK, Eilers KM, Mori M, Hsieh YC, Beer TM. How accurate is clinician reporting of chemotherapy adverse effects? A comparison with patient-reported symptoms from the Quality-of-Life Questionnaire C30. *J Clin Oncol* 2004;22:3485–90.
19. Sneeuw KC, Sprangers MA, Aaronson NK. The role of health care providers and significant others in evaluating the quality of life of patients with chronic disease. *J Clin Epidemiol* 2002;55:1130–43.
20. Boyes A, Girgis A, Lecathelinais C. Brief assessment of adult cancer patients' perceived needs: development and validation of the 34-item Supportive Care Needs Survey (SCNS-SF34). *J Eval Clin Pract* 2009;15:602–6.
21. Okuyama T, Akechi T, Yamashita H, Toyama T, Endo C, Sagawa R, et al. Reliability and validity of the Japanese version of the Short-form Supportive Care Needs Survey Questionnaire (SCNS-SF34-J). *Psychooncology* 2009;18:1003–10.
22. Aaronson NK, Ahmedzai S, Bergman B, Bullinger M, Cull A, Duez NJ, et al. The European Organization for Research and Treatment

of Cancer QLQ-C30: a quality-of-life instrument for use in international clinical trials in oncology. *J Natl Cancer Inst* 1993;85:365–76.

23. Kobayashi K, Takeda F, Teramukai S, Gotoh I, Sakai H, Yoneda S, et al. A cross-validation of the European Organization for Research and Treatment of Cancer QLQ-C30 (EORTC QLQ-C30) for Japanese with lung cancer. *Eur J Cancer* 1998;34:810–5.
24. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand* 1983;67:361–70.
25. Kugaya A, Akechi T, Okuyama T, Okamura H, Uchitomi Y. Screening for psychological distress in Japanese cancer patients. *Jpn J Clin Oncol* 1998;28:333–8.
26. Takahashi M, Kai I, Hisata M, Higashi Y. Attitudes and practices of breast cancer consultations regarding sexual issues: a nationwide survey of Japanese surgeons. *J Clin Oncol* 2006;24:5763–8.
27. Ahlberg K, Ekman T, Gaston-Johansson F, Mock V. Assessment and management of cancer-related fatigue in adults. *Lancet* 2003;362: 640–50.
28. Velikova G, Booth L, Smith AB, Brown PM, Lynch P, Brown JM, et al. Measuring quality of life in routine oncology practice improves communication and patient well-being: a randomized controlled trial. *J Clin Oncol* 2004;22:714–24.
29. Aranda S, Schofield P, Weih L, Milne D, Yates P, Faulkner R. Meeting the support and information needs of women with advanced breast cancer: a randomised controlled trial. *Br J Cancer* 2006;95:667–73.
30. McLachlan SA, Allenby A, Matthews J, Wirth A, Kissane D, Bishop M, et al. Randomized trial of coordinated psychosocial interventions based on patient self-assessments versus standard care to improve the psychosocial functioning of patients with cancer. *J Clin Oncol* 2001;19:4117–25.

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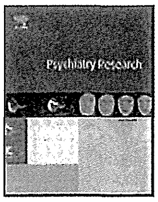

Brief report

Ictal physiological characteristics of remitters during bilateral electroconvulsive therapy

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ABSTRACT

Ictal heart rate (HR) and postictal suppression in ictal EEG are believed to be predictive of the therapeutic efficacy of eletroconvulsive therapy (ECT) for depression. However, regarding ictal peak HR, previous studies investigated ictal HR on only one or two occasions during the course of ECT. We prospectively examined whether two physiological parameters, ictal peak HR and postictal suppression in ictal EEG, during every session, including those with abortive seizure, predicted ECT efficacy. Ictal peak HR and postictal suppression index were analyzed in 53 consecutive inpatients with depression using generalized estimating equations analysis, which corrects for the repeated nature of the observations. The peak HR and postictal suppression index were associated with therapeutic efficacy in remitters during sessions with adequate seizure. The physiological characteristics of the remitters included lower peak HR, lower stimulus energy, and higher postictal suppression index. However, these results could not be generalized, and are limited to non-atropine conditions and bilateral ECT.

1. Introduction

Electroconvulsive therapy (ECT) represents an effective treatment option for depression (UK ECT Review Group, 2003; Fink and Taylor, 2007). Optimizing the treatment efficacy of ECT using physiological parameters, e.g. ictal EEG (Nobler et al., 1993; Krystal et al., 1995; Nobler et al., 2000) and cardiovascular parameters, including blood pressure and heart rate (HR) (Swartz, 2000; Saravanan et al., 2002; Azuma et al., 2007), has been extensively examined.

Regarding ictal EEG, especially right unilateral ECT, ictal EEG markers were reported to be predictors of therapeutic efficacy (Kimball et al., 2009), but there is some discussion that the appearance of a typical EEG seizure per se may indicate the difference between neurophysiologic response to seizure provocation among patients, which reflects the strength of the endogenous inhibitory processes that terminate seizures, and may result in better ECT outcomes (Perera et al., 2004). Among cardiovascular parameters, the rate pressure product (RPP) and the peak HR during seizure, correlate with electrical stimulus dose, and are associated with atropine use before anesthesia (Mayur et al., 1998a,b; Swartz, 2000). Regarding the efficacy of ECT in terms of cardiovascular response, RPP and peak HR were reported to be potential indexes of treatment efficacy (Gangadhar et al., 2000; Swartz 2000; Saravanan et al., 2002). Thus, we examined the association between the efficacy of bilateral (BL) ECT and the physiological effects, ictal peak HR, and ictal EEG markers in the naturalistic ECT course throughout ECT sessions, including sessions with abortive seizure, under conditions of no atropine use and under propofol anesthesia.

2. Methods

2.1. Subjects

A consecutive series of 53 depressed inpatients that had not responded to at least 4 weeks of standard pharmacotherapy and were referred for ECT at the Department of Psychiatry, Nagoya City University Hospital, were included in the study. All subjects fulfilled the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, criteria for unipolar major depression or bipolar disorder/most recent episode depressed (American Psychiatric Association, 1994). The diagnosis was determined by at least two psychiatrists through a clinical interview and a review of the psychiatric records. Patients with the following conditions were excluded: a past or present history of schizophrenia, schizoaffective disorder, substance abuse or substance dependence, significant neurological illness, or any other significant medical illness; a grave abnormality on an X-ray, computed tomographic image, or EEG; and/or the administration of ECT within the previous 6 months. Ten days before and after a course of ECT, the severity of depression was assessed using the GRID Hamilton Rating Scale for Depression (GRID-HAMD) (Tabuse et al., 2007). The attending psychiatrists, who were directly involved in the clinical management of the patients, completed the ratings. The study protocol was approved by the Ethics Committee of Nagoya City University Medical School. All subjects were informed as to the purpose and procedures of the study, and all patients provided written informed consent for the study.

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2.2. Electroconvulsive therapy and medication

Electroconvulsive therapy was administered through electrodes positioned bilaterally on the fronto-temporal region. For the pulse wave instrument, ThymatronTM System IV (THYMATRON System IV, Somatics, Inc., Lake Bluff, IL, USA) was used. The stimulation dose for the first session was calculated using the half age method for 16 patients and the titrated method on the basis of age for other patients. Our empirical titrating method started at 10% (under 50 years of age) or 20% (above 50 years of age), and if seizure did not occur, the stimulus dose was increased by 10%. We selected the LOW 0.5 pre-set program, which used a 0.5-ms pulse width, and adjusted the frequency to maximize the duration. Intravenous injection of propofol and 3 mg of vecronium bromide was administered. We recorded the electroencephalographic seizure during the administration of ECT. We checked and transcribed the ictal peak HR and postictal suppression index during EEG seizure from the EEG recordings, which the ECT machine produced and automatically recorded. The postictal suppression index indicated the degree of suppression at the end of the seizure (%). A higher value means good suppression. To ensure the validity of seizure induction, we set the minimum seizure duration at 20 s (adequate seizure). If an electroencephalographic seizure did not occur (missed seizure) or lasted less than 20 s (abortive seizure), re-stimulation at a higher stimulus intensity was subsequently carried out by increasing the pulse wave stimuli by 10% up to 100%, for a maximum of three stimulations per session. The investigator measured the EEG seizure duration. Seizures were further monitored clinically in a cuffed leg.

All patients were on antidepressants, which remained unchanged at the minimal dose through the ECT courses. These antidepressants and the number of patients taking them included 17 patients taking mianserin, 6 patients taking sertraline, 1 patient taking maprotiline, 6 patients taking paroxetine, 8 patients taking fluvoxamine, 8 patients taking amoxapine, 26 patients taking trazodone, 2 patients taking nortriptyline, 1 patient taking imipramine, 4 patients taking amitriptyline, 6 patients taking clomipramine, and 4 patients taking milnaciprane. Lithium and antiepileptic drugs were withdrawn before ECT. Because of clinical considerations, the use of benzodiazepine was permitted during the study to alleviate insomnia and anxiety. Benzodiazepine dosage at the time of the first ECT session never exceeded 4 mg/d of lorazepam or its equivalent. Twenty-five (47.2%) and 23 (43.4%) patients were administered antipsychotics and benzodiazepine, respectively, and five (9.4%) received an antiparkinson drug. Two patients received antihypertensive medications and their blood pressure was well controlled.

2.3. Statistical analysis

We analyzed the available physiological measurements, peak HR during EEG seizure (peak HR) and the postictal suppression index, from all available ECT sessions. A remitter was defined as a 50% reduction of the baseline GRID-HAMD score and a score of 7 or less points on the posttreatment GRID-HAMD score. A responder was defined as a 50% reduction of the baseline GRID-HAMD score. The change in treatment response was examined by paired *t*-test. Remitter or responder was the dependent variable, and each physiological measurement (peak HR, postictal suppression index) was an independent variables in generalized estimating equations (GEE) analyses, controlling for number of treatments as a within-subjects covariate. Furthermore, we controlled for age, stimulus dose (which was associated with peak HR) (Swartz, 2000; Swartz and Shen, 2007), pretreatment HAMD, electrical stimulus dose method for the first session (half age method or titrated method), propofol dose (mg/kg), and gender as covariates. To examine the influence of abortive seizure on efficacy, we analyzed both the sessions with adequate seizure and the sessions with adequate and abortive seizures. We used GEE analysis because the measurements in each patient were correlated within subjects, and the number of courses and treatments varied among subjects. Statistical significance was set at $P < 0.05$ (two-tailed).

3. Results

Table 1 shows the demographic data of the 53 patients. From a total of 745 (average sessions ± S.D. was 14.1 ± 3.8 sessions/patient), we used the available 706 sessions. Of the 706 available sessions, 543 resulted in adequate seizures (10.2 ± 2.4 sessions per patient), 88 resulted in abortive seizures, and 75 resulted in missed seizures. However, of these sessions, 419 sessions with adequate seizures and 466 sessions with adequate and abortive seizures were available for the analysis using both peak HR and postictal suppression index. The patient physiologic data in the 419 and 466 sessions showed a peak HR of 117.9 ± 22.1/min and 116.8 ± 22.0/min, a postictal suppression index of 76.4 ± 21.2% and 76.3 ± 21.0%, a EEG duration of 57.4 ± 34.3 s and 51.4 ± 35.2 s. The patient experimental parameters in the 419 and 466 sessions showed a stimulus energy of 42.8 ± 24.1% and 44.3 ± 24.6%, and a propofol dose of 2.1 ± 0.6 mg/kg and 2.1 ± 0.6 mg/kg, respectively. The Pearson's correlation coefficients (r) between peak HR and energy, controlling for age, were −0.027 ($n = 419$, $P = 0.58$) in the sessions with adequate seizure and −0.30 ($n = 466$, $P = 0.52$) in the sessions with adequate and abortive seizures. However, among remitters, the Pearson's r was 0.26 and 0.28, controlling for age ($n = 105$, $P = 0.007$, $n = 123$, $P = 0.002$), respectively. The total number of stimulus sessions was not significantly different between remitters (13.7 ± 3.5) and non-remitters (14.2 ± 4.0) (*t*-test, $t = 0.457$, $df = 51$, $P = 0.65$). The number of sessions was not significantly different between remitters (10.8 ± 1.9) and non-remitters (10.5 ± 2.2) (*t*-test, $t = -0.377$, $df = 51$, $P = 0.71$). The average stimulus dose was significantly different between remitters (33.8 ± 17.7%) and non-remitters (45.9 ± 25.2%) (*t*-test, $t = 5.42$, $df = 417$, $P < 0.001$). The average peak HR was not statistically significant between remitters and non-remitters (*t*-test, $t = 1.71$, $df = 417$, $P = 0.09$).

Table 1
Patient demographic data and physiological parameters.

$N = 53$	Mean	S.D.
Age, years	49.6	12.4
Age of onset, years	41.6	14.5
Gender (male/female)	31/22	-
Diagnosis (MDD/BD)	49/4	-
Current episode, months	21.0	20.9
Number of previous episodes	1.7	2.0
Pretreatment GRID-HAMD score	20.2	5.7
Posttreatment GRID-HAMD score	10.2	5.7

MDD, Major depressive disorder; BD, Bipolar disorder; GRID-HAMD, GRID-Hamilton Rating Scale for Depression.

The GRID-HAMD score decreased from 20.2 ± 5.7 to 10.2 ± 5.7 and was statistically significant (paired *t*-test, $t = 11.1$, $df = 52$, $P < 0.001$). Of 53 patients, 16 (30.2%) and 26 (49.1%) were judged to be remitters and responders, respectively, according to the criteria defined above. The interval between the final treatment and the assessment of the post-ECT outcome was 7.3 ± 6.0 days. There was no significant difference in remitters or non-remitters between patients using major tranquilizers (Mann-Whitney U, $z = -1.512$, $P = 0.13$) and minor tranquilizers (Mann-Whitney U, $z = -0.632$, $P = 0.53$). In the GEE analysis, peak HR and postictal suppression index were statistically significant only during the sessions with adequate seizure for remitters (Table 2).

4. Discussion

We demonstrated that the physiological characteristics of remitters during bilateral ECT are not associated with higher peak HR, higher stimulus energy, or lower postictal suppression index. The peak HR in our study was lower than that in Swartz's study (Swartz and Shen, 2007), which recommended increasing the electrical dose if the peak HR was less than 140 bpm, although the peak HR in our study was 117.9 ± 22.1. One of the possible explanations for this difference in peak HR is use or non-use of atropine before anesthesia (Perrin, 1961; Mayur et al., 1998b). Another possible explanation is the relatively higher dose of propofol anesthesia (2.1 ± 0.6 mg/kg) used. Propofol anesthesia lowered the cardiovascular response more than thiopental or methohexital (Rampton et al., 1989; Villalonga et al., 1993), although the peak HR in 0.5-ms pulse widths was reported to be higher than in the 1.0-ms pulse width (Swartz and Manly, 2000). Because the average stimulus dose in remitters was lower than that in non-remitters, we could assume that the change in seizure threshold through the ECT course in remitters was lower than that in non-remitters, and that both the stimulus dose and the peak HR emerged inversely. From the results of the ictal physiological characteristics of remitters, lower stimulus energy implied a lower seizure threshold change during the BL ECT course, and peak HR positively correlated with the lower stimulus dose, and higher postictal suppression index emerged as an ictal seizure marker. Thus,

Table 2
Results from remitter and responder during sessions with adequate seizure ($n=419$) and adequate and abortive seizure ($n=466$) by GEE analysis.

	Adequate seizure ($n=419$)				Adequate and abortive seizure ($n=466$)			
	Remitter		Responder		Remitter		Responder	
	Coefficient	*P*	Coefficient	*P*	Coefficient	*P*	Coefficient	*P*
Age	-0.007	0.829	-0.025	0.412	-0.006	0.862	-0.018	0.540
Gender	0.217	0.800	-0.370	0.605	0.264	0.758	-0.348	0.627
Pretreatment GRID-HAMD	-0.142	0.072	0.055	0.406	-0.124	0.083	0.067	0.301
Electrical stimulus method	1.583	0.063	-0.581	0.453	1.444	0.078	-0.581	0.453
Peak HR	-0.023	0.048	-0.008	0.478	-0.020	0.051	-0.008	0.478
Postictal suppression index, %	0.025	0.035	0.007	0.366	0.016	0.084	0.005	0.478
Stimulus dose, %	-0.036	0.014	-0.015	0.201	-0.031	0.016	-0.667	0.389
Propofol, mg/kg	-0.443	0.295	-0.431	0.258	-0.333	0.434	-0.276	0.458

Dependent variable, Remitter, posttreatment GRID-HAMD showed a 50% reduction and was <8 points; Responder; the reduction of postteratment GRID-HAMD showed a 50% reduction; GRID-HAMD,GRID-Hamilton rating scale for depression; peak HR, peak heart rate; GEE analysis, Generalized Estimating Equations analysis.

we need to further examine patients with depression who show these physiological characteristics.

Before drawing conclusions from this observational study, we must mention the limitations of the study. Firstly, our patients were prescribed antidepressants, benzodiazepines, major tranquilizers, and antihypertensive medications. These drugs could influence the ECT-induced physiological parameters. Secondly, it was reported that, under thiopental anesthesia, the timing of the electrical stimulus influences the depth of narcosis (Sartorius et al., 2006). We stimulated when the musculature was effectively reluctant, and did not check the depth of induced narcosis. Therefore, the actual depth of narcosis might influence the ictal physiological effects. Thirdly, the rate of remitters in our study was low. We assumed that the variation in the rating days might influence the posttreatment GRID-HAMD (Prudic et al., 2004), and the 0.5-ms pulse width we used, might associate with the relatively lower response, because the ultrabrief BL ECT of 0.3-ms pulse width showed lower final remission rate (Sackeim et al., 2008). In conclusion, we demonstrated that the characteristics of remitters were lower seizure threshold change during BL ECT, lower peak HR, and higher postictal suppression under conditions of no atropine use before ECT, and with propofol anesthesia, and that these characteristics of remitters that were in line with our method need to be examined.

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References

American Psychiatric Association, 1994. Diagnostic Statistical Manual of Mental Disorders. American Psychiatric Press, Washington, DC.

Azuma, H., Fujita, A., Sato, K., Arahata, K., Otsuki, K., Hori, M., Mochida, Y., Uchida, M., Yamada, T., Akechi, T., Furukawa, T.A., 2007. Postictal cardiovascular response predicts therapeutic efficacy of electroconvulsive therapy for depression. Psychiatry and Clinical Neurosciences 61, 290–294.

Fink, M., Taylor, M.A., 2007. Electroconvulsive therapy: evidence and challenges. JAMA 18, 330–332.

Gangadhar, B.N., Mayur, P.M., Janakiramaiah, N., Subbakrishna, D.K., Rao, G.S., 2000. Cardiovascular response during ECT: a cross-over study across stimulus conditions. Journal of ECT 16, 177–182.

Kimball, J.N., Rosenquist, P.B., Dunn, A., McCall, V., 2009. Prediction of antidepressant response in both 2.25xthreshold RUL and fixed high dose RUL ECT. Journal of Affective Disorders 112, 85–91.

Krystal, A.D., Weiner, R.D., Coffey, C.E., 1995. The ictal EEG as a marker of adequate stimulus intensity with unilateral ECT. Journal of Neuropsychiatry and Clinical Neuroscience 7, 295–303.

Mayur, P.M., Gangadhar, B.N., Girish, K., Prasad, K.M., Subbakrishna, D.K., Janakiramaiah, N., 1998a. Acute post-ECT cardiovascular response: a comparison of threshold right unilateral and bilateral ECT. Journal of ECT 14, 94–98.

Mayur, P.M., Shree, R.S., Gangadhar, B.N., Subbakrishna, D.K., Janakiramaiah, N., Rao, G.S., 1998b. Atropine premedication and the cardiovascular response to electroconvulsive therapy. British Journal of Anaesthesiology 81, 466–467.

Nobler, M.S., Sackeim, H.A., Solomou, M., Luber, B., Devanand, D.P., Prudic, J., 1993. EEG manifestations during ECT: effects of electrode placement and stimulus intensity. Biological Psychiatry 34, 321–330.

Nobler, M.S., Luber, B., Moeller, J.R., Katzman, G.P., Prudic, J., Devanand, D.P., Dichter, G.S., Sackeim, H.A., 2000. Quantitative EEG during seizures induced by electroconvulsive therapy: relations to treatment modality and clinical features. I. Global analyses. Journal of ECT 16, 211–228.

Perera, T.D., Luber, B., Nobler, M.S., Prudic, J., Anderson, C., Sackeim, H.A., 2004. Seizure expression during electroconvulsive therapy: relationships with clinical outcome and cognitive side effects. Neuropsychopharmacology 29, 813–825.

Perrin, G.M., 1961. Cardiovascular aspects of electric shock therapy. Acta Psychiatrica Scandinavica 36 (Suppl 152), 1–45.

Prudic, J., Olfson, M., Marcus, S.C., Fuller, R.B., Sackeim, H.A., 2004. Effectiveness of electroconvulsive therapy in communitysettings. Biological Psychaitry 55, 301–312.

Rampton, A.J., Griffin, R.M., Stuart, C.S., Durcan, J.J., Huddy, N.C., Abbott, M.A., 1989. Comparison of methohexital and propofol for electroconvulsive therapy: effects on hemodynamic responses and seizure duration. Anesthesiology 70, 412–417.

Sackeim, H.A., Prudic, J., Nobler, M.S., Fitzsimons, L., Lisanby, S.H., Payne, N., Berman, R.M., Brakemeier, E., Perera, T., Devanand, D.P., 2008. Effects of pulse width and electrode placement on the efficacy and cognitive effects of electroconvulsive therapy. Brain Stimulation 1, 71–83.

Saravanan, E.S., Gangadhar, B.N., Janakiramaiah, N., Pandey, R.S., Murthy, H.S., Subbakrishna, D.K., 2002. Does higher cardiovascular response to ECT predict early antidepressant effect? Journal of Affective Disorders 69, 101–108.

Sartorius, A., Munoz-Canales, E.M., Krumm, B., Krier, A., Andres, F.J., Bender, H.J., Henn, F.A., 2006. ECT anesthesia: the lighter the better? Pharmacopsychiatry 39, 201–204.

Swartz, C.M., 2000. Physiological response to ECT stimulus dose. Psychiatry Research 97, 229–235.

Swartz, C.M., Manly, D.T., 2000. Efficiency of the stimulus characteristics of ECT. American Journal of Psychiatry 157, 1504–1506.

Swartz, C.M., Shen, W.W., 2007. ECT generalized seizure drives heart rate above treadmill stress test maximum. Journal of ECT 23, 71–74.

Tabuse, H., Kalali, A., Azuma, H., Ozaki, N., Iwata, N., Naitoh, H., Higuchi, T., Kanba, S., Shioe, K., Akechi, T., Furukawa, T.A., 2007. The new GRID Hamilton Rating Scale for Depression demonstrates excellent inter-rater reliability for inexperienced and experienced raters before and after training. Psychiatry Research 153, 61–67.

The UK ECT Review Group, 2003. Efficacy and safety of electroconvulsive therapy in depressive disorders: a systematic review and meta-analysis. Lancet 361, 799–808.

Villalonga, A., Bernardo, M., Gomer, C., Fita, G., Escobar, R., Pacheco, M., 1993. Cardiovascular response and anesthetic recovery in electroconvulsive therapy with propofol and thiopental. Convulsive Therapy 9, 108–111.

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Development of a Japanese Benefit Finding Scale (JBFS) for Patients With Cancer

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Abstract

The primary aim of this study was to develop a scale to evaluate benefits for patients with cancer under treatment in Japan (the Japan Benefit Finding scale [JBFS]). The participants were 98 patients with cancer who completed the JBFS, which has 26 items, the General Health Questionnaire short version (GHQ 12). Factor analysis, structural equation modeling (SEM), and correlation analysis were performed. Three key domains were identified: "Recognition of one's role in the family and priorities," "Appreciation for life," and "Faith." Validity was confirmed by SEM. There was a significant correlation between the JBFS and GHQ 12. The reliability and validity are adequate, and the JBFS shows that Japanese patients who found benefits in cancer were able to adjust to their disease.

Keywords

benefit finding, scale, cancer patient, Japanese

Introduction

Patients with cancer experience physical problems such as pain, fatigue, and nausea, and psychological problems such as anxiety, depression, distress,[1,2,3] and spiritual pain. A growing body of literature suggests that individuals coping with trauma seek to make sense of their experience and that some individuals derive benefits of personal growth from the experience.[4,5] Positive changes that result from this trauma are referred to as benefit finding.

A study shows that posttraumatic growth of disease-free women 5 to 15 years diagnosis showed slight association with mental quality of life (QOL) and happiness,[6] posttraumatic growth marginally related to lower perceived stress,[7] and meta-analysis of posttraumatic growth after cancer revealed that growth was related to increased positive mental health, reduced negative mental health, and better subjective physical health.[8] These studies show that some of patients with cancer find benefits after posttraumatic experiences, and benefit finding relate with QOL. To improve patients' QOL, examination of benefit finding is important.

As for details of benefit findings, Antoni et al found that most women diagnosed with early-stage breast cancer reported that their lives had changed in positive ways.[4] The reported common positive changes included becoming more accepting, focusing more on the importance of relationships with family and friends, and changing life priorities. Another study showed that women with breast cancer reported greater positive psychosocial adaptation, such as improved life outlook, enhanced interpersonal relationships, and deeper spiritual and religious satisfaction, in comparison with controls.[9]

The Benefit Finding scale was developed to evaluate this phenomenon, with domains of growth, personal priorities, daily activities, and family.[10,11] The studies referred to above are from Western countries, and relatively few studies of benefit finding have been performed in Japan. In our previous study about meaning of illness for terminally ill patients with cancer,[12] there were differences in attitude toward cancer; patients in Western countries tended to confront with illness or fight against illness, however, those in Japanese tended to live together with the illness. We predicted that there were some differences in construction of the benefit findings.

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Table 2. Results of Factor Analysis Showing Items and Factor Loadings

	Items in Each Factor	F 1	F 2	F 3	Commonality
	Factor 1: Recognition of one's roles in the family and priorities				
(12)	Having cancer has made me more sensitive to my family issues	0.87			0.69
(13)	Having cancer has made me realize the importance of planning for my family's future	0.66			0.38
(1)	Having cancer has brought my family closer together	0.53			0.30
(2)	Having cancer has brought me feel family's love	0.50			0.42
(14)	Having cancer has made me think about my life and work	0.47			0.45
(9)	Having cancer has taught me to be patient	0.42			0.22
(10)	Having cancer has led me to be more accepting of things	0.42			0.29
(16)	Having cancer has helped me plan what I can do in my life	0.38			0.18
	Factor 2: Appreciation for life				
(19)	Having cancer has made me appreciate life		0.81		0.63
(17)	Having cancer has made me realize that life is limited and that time is precious		0.67		0.46
(11)	Having cancer has made me to live along with illness well		0.61		0.50
(5)	Having cancer has made me more grateful for each day		0.47		0.28
	Factor 3: Faith				
(20)	Having cancer has made me religious			0.73	0.57
(18)	Having cancer has made me think that there is meaning or purpose in my life			0.66	0.47
(22)	Having cancer has made me think that there is meaning in a difficult experience			0.55	0.37
(21)	Having cancer has made me feel that there is a transcendent power exceeding human power			0.49	0.24

the patient and the interviewer obtained informed consent after the patient agreed to participate. The patient then completed the JBFS and GHQ 12 questionnaires orally over about 30 minutes. This study was approved by the St Mary's Hospital Ethical Board.

Statistical Analysis

A mean score of each question item of the JBFS was calculated, and items which showed the ceiling effects or flour effects were deleted. Thus, 22 items of 26 items were used for factor analysis. The validity of the JBFS was confirmed by factor analysis. Seven-point Likert scores for each item were used for statistical analysis. A factor analysis by weighted least squares and promax rotation was performed on the 22 items of the JBFS. Factors with an eigenvalue ≥ 1 and items with a factor loading >0.4 were selected. The conceptual structure of the JBFS, including factors confirmed by factor analysis, was assessed by structural equation modeling (SEM) using Amos 16.0 SPSS 16.0.[15] Values of $P < .05$ were considered significant. A correlation analyses between JBFS and GHQ scores were also performed.

Results

Factor Analysis

Three domains validated by factor analysis are shown in Table 2. The first was interpreted as "recognition of one's roles in the family and priorities," and consisted of the following 8 items: "having cancer has made me more sensitive to family issues," "having cancer has made me realize the importance of planning for my family's future," "having cancer has brought my family close together," "having cancer has made me feel my family's love," "having cancer has made me think about my life and work," "having cancer has taught me to be patient," "having cancer has led me to be more accepting of things," and "having cancer has helped me plan what I do in my life."

The second domain was interpreted as "appreciation for life," and consisted of the following 4 items: "having cancer has made me appreciate life," "having cancer has made me realize that life is limited and that time is precious," "having cancer has taught me to cope with my illness well," and "having cancer has made me more grateful for each day."

The third domain was interpreted as "Faith," and consisted of the following 4 items: "having cancer has made me religious," "having cancer has made me think that there is meaning or purpose in my life," "having cancer has made me think that there is meaning in a difficult experience," and "having cancer has made me feel that there is a transcendent power exceeding human power."

To assure the internal consistencies of this inventory, Cronbach α was calculated. Cronbach α values for the 3 subordinate domains were .80, .74, and .70, respectively.

Structural Equation Modeling of the JBFS

Structural equation modeling was performed to examine the conceptual structure of the JBFS, based on the 3 subordinate domains obtained in factor analysis. The fit indices of this model were as follows: Goodness of Fit Index (GFI) = 0.826, Adjusted Goodness of Fit Index (AGFI) = 0.766, Comparative Fit Index (CFI) = 0.83. The more than 0.9 score shows the best fitness of the mode. The Root-Mean-Square Error of Approximation (RMSEA) = 0.087 and the score under 1.0 shows the best fitness. All of the standardized coefficients were significant ($P < .05$). "Recognition of one's role in the family"

6. Lelorain S, Boonaud-Antignac A, Florine A. Long term posttraumatic growth after breast cancer: Prevalence, predictors and relationships with psychological health. *J Clin Psychol Med Settings*. 2010;17(1):14-22.
7. Bussell VA, Naus MJ. A longitudinal investigation of coping and posttraumtic growth in breast cancer survivors. *J Psychosoc Oncol*. 2010;28(1):61-78.
8. Sawyer A, Ayers S, Field AP. Posttraumatic growth and adjustment among individuals with cancer or HIV/AIDS: a meta-analysis. *Clin Psychol Rev*. 2010;30(4):436-447.
9. Andrykowski MA, Curran SL, Studts J, et al. Psychosocial adjustment and quality of life in women with breast cancer and benign breast problems: a controlled comparison. *J Clin Epidemiol*. 1996;49(8):827-834.
10. Tomich PL, Helgeson VS. Is finding something good in the bad always good? Benefit finding among woman with breast cancer. *Health Psychol*. 2004;23(1):16-23.
11. Tomich PL, Helgeson V, Nowak Vache EJ. Perceived growth and decline following breast cancer: a comparison to age-matched controls 5-years later. *Psychooncology*. 2005;14(12): 1018-1029.
12. Ando M, Morita T, Lee V. A pilot study of transformation, attributed meanings to the illness, and spiritual well-being for terminally ill cancer patients. *Palliat Support Care*. 2008;6(4): 335-340.
13. Sanjyo M, Morita T, Hirai K, et al. Caregiving Consequences Inventory: a measure for evaluating caregiving consequences from the bereaved family members' perspective. *Psychooncology*. 2009;18(6):657-666.
14. Nakagawa T, Taibou I. Japanese version of the General Health Questionnaire handbook. Tokyo: Nihon Bunka Kagakusya (Original version: Goldberg DP. The General Health Questionnaire, Nfer-Nelson Publishing, Co., LTD.1978).
15. SPSS 16.0 Brief Guide. SPSS Inc., 2006. Tokyo.
16. Tomich PL, Helgeson VS. Five years later: a cross sectional comparison of breast cancer survivors with healthy women. *Psychooncology*. 2002;11(2):154-169.
17. Carver CS, Lechner SC, Antoni MH. Challenges in studying positive change after adversity: illustrations from research on breast cancer. In: Park C, Lechnerm S, Antoni M, Stanton A, eds. *Can Crisis Lead to Personal Transformation?* Washington, DC: American Psychological Association; 2009:51-62.
18. Mols F, Vingerhoets AJJ, Coebergh JWW, van de Poll-Franse LV. Well-being, posttraumatic growth and benefit finding in long-term breast cancer survivors. *Psychol Health*. 2009;24(5):583-595.
19. Miyashita M, Morita T, Sato K, Hirai K, Shima Y, Uchitomi Y. Factors contributing to evaluation of a good death from the bereaved family member's perspective. *Psychooncology*. 2008; 17(6):612-620.
20. Ando M, Morita T, Sung-Hee A, Marquez-Wong F, Ide S. International comparison study on the primary concerns of terminally ill cancer patients in short-term life review interviews among Japanese, Koreans, and Americans. *Palliat Support Care*. 2009; 7(3):1-7.
21. Tomich P, Helgeson V. Cognitive adaptation theory and breast cancer recurrence: are there limits? *J Consult Clin Psychol*. 2006;74(5):980-987.
22. Penedo F, Molton I, Dahn J, et al. A randomized clinical trial of group-based cognitive-behavioral stress management in localized prostate cancer: development of stress management skills improves quality of life and benefit finding. *Ann Behav Med*. 2006;31(3):261-270.

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Availability of Psychiatric Consultation-liaison Services as an Integral Component of Palliative Care Programs at Japanese Cancer Hospitals

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Objective: Collaboration between psychiatry and palliative medicine has the potential to enhance the quality of medical practice. The integration between palliative care and psychiatry has been attempted only in discrete medical settings and is not yet firmly established as an institution. Our objective was to determine the availability and degree of integration between psychiatric consultation-liaison services and palliative care in Japan.
Methods: A survey questionnaire was mailed to consultation-liaison psychiatrists at 375 government-designated cancer hospitals regarding their consultation-liaison services.
Results: A total of 375 survey questionnaires were sent to consultation-liaison psychiatrists, with a response rate of 64.8%. Designated cancer hospitals with approved palliative care teams were significantly more likely to have a consultation-liaison psychiatrist in the palliative care team than those in non-approved palliative care teams [80/80 (100%) versus 110/153 (73%); $P = 0.008$]. Approved palliative care teams had double the number of referrals, conducted rounds more frequently and held conferences more frequently. Psychiatrists of the approved palliative care teams spent more of their time on palliative care consultations, adhered more closely to consultation processes and contributed more actively to the integration of developmental perspectives in treatment plans.
Conclusions: In Japan, most designated cancer hospitals with approved palliative care teams were more likely to integrate psychiatric consultation-liaison services into their palliative care programs. Systematic strategies for integration between palliative care and consultation-liaison psychiatry would contribute to the provision of appropriate psychosocial care for cancer patients and families at all stages.

Key words: psycho-oncology — palliative care team — consultation-liaison psychiatry — cancer — palliative medicine

INTRODUCTION

Although remarkable progress has been made in cancer treatment, most patients with advanced cancer eventually face complex physical, psychiatric and social problems related to their disease, treatment or comorbidities (1,2). It is strongly recommended that palliative care services should be provided earlier in the cancer trajectory (3,4). General services provided by hospitals cannot always manage these problems effectively. Many international organizations support early incorporation of palliative care in oncology practice (4,5) and hospital-based palliative care programs have rapidly expanded over the past decade (6,7). Palliative care teams now play a key role in the management of symptoms, psychosocial support, assistance with decision-making and care coordination across providers (7–12).

Research shows that psychological distress in the form of depression and other mental health problems is associated with increased morbidity and mortality and decreased functional status (13,14). Approximately 29–43% of patients with cancer (all types, all stages) fulfill the diagnostic criteria for psychiatric disorder (14,15). A number of studies have suggested that psychosocial care services contribute to improving patients' quality of life (16–20). However, cancer patients report that many health-care providers still do not consider psychosocial support as an integral component of quality cancer care and may fail to recognize, adequately treat or provide a referral to the required services for depression and distress in cancer patients (9,21,22). The reasons for under-recognition are the failure of clinicians to inquire about psychosocial problems because of inadequate education and training (including inadequate clinical practice guidelines) in these issues, a lack of awareness of available services to address these needs (23) or a lack of knowledge about how to integrate the attention to psychosocial health needs into their practice (15). The program which could address cross-system problems and coordinate benefits is needed.

One of the solutions for poor coordination is to improve networking and collaboration between systems; integration between psychiatry and palliative care programs.

Integration is defined as the search to connect the health-care system with other service systems in order to improve outcomes (24).

Integration is classified into three different levels: linkage, coordination and full integration. First, 'linkage' promotes the relationships between systems that serve the whole populations without having to rely on outside systems for special relationships. Linkage begins with screening to identify emergent needs. When more serious conditions are identified, health professionals know where it is appropriate in other systems to send people and how to ensure that they get there. Second, coordination requires structures and managers to coordinate benefits and care across systems. Coordination is more structured than linkage, but systems are operated independently of one another. Third, full integration creates new programs where resources from multiple systems are pooled. The fully integrated system gets control over several resources to define new benefits directly.

There are a number of barriers to collaboration between psychiatry and palliative care program, such as the misinterpretation that psychiatry is excessively medicalized, that psychiatric treatment is too difficult to practice in daily oncological settings and that patients refuse referral for psychiatric treatment (25–27). The previous survey noted that 45% of hospices in the UK have no access to psychological and psychiatric services and also revealed a large discrepancy in provision compared with the recommendations made in recent guidelines (28). The linkage between palliative care and psychiatry has been attempted only in discrete medical settings and is not yet firmly established as an institution.

Given the substantial prevalence rates and the management challenges presented by many of the patients, collaboration between psychiatry and palliative medicine has the potential to enhance the quality of medical practice, education and research. One of the solutions for promoting integration between the two fields in practice is to promote a full integrated care model, which involves with resources directly.

In Japan, the Cancer Control Act was approved in 2006, and prefectural and local cancer hospitals were designated by the government (29). The designated cancer hospitals were required to provide a hospital-based palliative care team, with a palliative care specialist, a consultation-liaison psychiatrist and a certified advanced nurse practitioner as core members.

In addition, national medical insurance covers the services provided by qualified palliative care teams that fulfill the necessary conditions: palliative care teams must be interdisciplinary teams composed of full-time core members with a palliative care specialist, a consultation-liaison psychiatrist, a certified advanced nurse practitioner and hospital pharmacists. The approval of palliative care teams by the insurance plan encourages the dissemination of palliative care service in practice (11).

To date, there have been few reports on the activities of consultation-liaison psychiatrists on palliative care teams. The current state of availability of psychiatric consultation-liaison services in palliative care settings and the degree of integration between psychiatry and palliative care services are not known. Many cancer hospitals state that they provide psychosocial support with palliative care; however, the structure, processes and outcomes of their support programs remain unclear. The purpose of our survey was to determine the availability and the degree of integration of psychiatric consultation-liaison services and palliative care programs in Japanese designated cancer hospitals. In addition, a comparison was made between the cancer hospitals with approved palliative care teams and those with non-approved palliative care teams.

PATIENTS AND METHODS

CONTENTS OF SURVEY

Survey questions were drawn up after a review of pertinent literature. A panel of experts including consultation-liaison psychiatrists, psychosomatic physicians, psychologists, nurses and palliative care specialists reviewed and revised the survey before distribution (4,19,30,31). Survey questions were generated based on the tripartite division of quality assessment and monitoring: structure, processes and outcomes to evaluate the clinical aspects of consultation-liaison psychiatry in palliative medicine (32). The questionnaire consisted of multiple-choice, Likert-scale and fill-in questions.

The questionnaire focused on six areas, which included hospital characteristics, professional backgrounds, clinical activities, availabilities, processes of practice and educational activities. Specific attention was paid to consultation processes: assessing physical and psychosocial symptoms, assessing decision-making capacities, assisting with decision-making regarding treatment, establishing the goals of care, interacting frequently with physicians and staff, coordinating care across providers and providing appropriate follow-up.

SUBJECTS

CANCER HOSPITALS

The designated cancer hospitals in Japan were identified from the database of the Center for Cancer Control and Information Services at the National Cancer Center and the list published by the Office for Cancer Control, Health Services Bureau, Ministry of Health, Labour and Welfare.

We obtained a list of 375 government-designated cancer hospitals, which provide services to ~25% of the cancer patients in Japan. At 90 of the designated cancer hospitals, the palliative care teams were approved for national medical insurance. We surveyed all government-designated cancer hospitals.

We identified the consultation-liaison psychiatrists (in some centers, psychosomatic physicians on behalf of psychiatrists) of 375 government-designated cancer hospitals from the database of the Center for Cancer Control and Information Services at the National Cancer Center and verified those who were core members of the palliative care teams through personal telephone contact with the cancer care support center of each institution.

SURVEY PROCESS

Survey questionnaires were sent to the 375 government-designated cancer hospitals, asking the team psychiatrists and psychosomatic physicians about their programs and clinical activities. The initial invitation was included with the mail survey. Recipients were given 6 weeks to complete the questionnaire anonymously and return it by mail. A reminder letter was sent to non-respondents at 6 and 12 weeks. Data collection was performed between November 2009 and February 2010.

STATISTICAL ANALYSIS

We summarized the availability and the characteristics of psychiatric consultation-liaison services involved with the palliative care teams by using standard descriptive statistics, including medians, interquartile ranges (IQRs), proportions and frequencies, together with 95% confidence intervals where appropriate. Differences in services provided between the approved and non-approved palliative care teams were evaluated using Fisher exact tests for categorical variables. The Mann–Whitney test was used for non-parametric continuous variables. $P < 0.05$ was considered statistically significant. SPSS version 17.0 software (SPSS Inc., Chicago, IL) was used for statistical analyses.

RESULTS

Of the 375 questionnaires that were mailed, 243 were returned (response rate = 64.8%). Of these, 10 were excluded due to missing data for the primary end points. Thus, 233 responses were finally analyzed (effective response rate = 62.1%). Psychiatrists and psychosomatic physicians of the approved palliative care teams were more likely to respond compared with those of the non-approved palliative care teams (88.8 versus 53.7%).

CHARACTERISTICS OF CONSULTATION-LIAISON PSYCHIATRISTS AND PSYCHOSOMATIC PHYSICIANS AT DESIGNATED CANCER HOSPITALS

Table 1 shows the background characteristics of consultation-liaison psychiatrists and psychosomatic physicians, infrastructure for psychiatry and palliative care, and structure of palliative care teams at designated cancer hospitals. The years of clinical experience of psychiatrists at cancer hospitals with approved palliative care teams was shorter than those with non-approved palliative care teams [16.3 versus 18.8 (years); $P < 0.02$]. On the other hand, the rate of psychiatrists of approved palliative care teams taken part in the government-certified palliative care workshop was higher than that of non-approved palliative care teams (90 versus 77%; $P < 0.02$).

Compared with the cancer hospitals with non-approved palliative care teams, those with approved palliative care teams were significantly more likely to have full-time psychiatrists and psychiatric outpatient services. All cancer hospitals with approved palliative care teams involved psychiatric consultation-liaison services. On the other hand, the rate of integration of services was only 73% at cancer hospitals with non-approved palliative care teams.

The number of inpatient beds was higher at cancer hospitals with approved palliative care teams compared with those

Table 1. Characteristics of consultation-liaison psychiatrists and psychosomatic physicians at designated cancer hospitals

	Cancer hospitals with approved palliative care teams ($n = 80$)	Cancer hospitals with non-approved palliative care teams ($n = 153$)	P-value
Professional background of psychiatrists and psychosomatic physicians on palliative care team			
Clinical experience (years)	16.3 (±6.9)	18.8 (±8.0)	0.02
Clinical experience in cancer care (years)	7.9 (±6.8)	7.0 (±6.5)	0.33
Registration of government-certified palliative care workshop, n (%)	72 (90%)	117 (77%)	0.02
Psychiatrist on palliative care team, n (%)			
Involvement of psychiatric consultation service in palliative care team	80 (100)	110 (73)	<0.001
Full time	19 (24)	11 (7)	
≥50% of protected time	30 (38)	22 (14)	
Hospital, n (%)			
Cancer center	8 (10	20 (13)	0.49
University hospital	32 (40)	21 (14)	0.002
Number of inpatients beds	702	590	<0.001
Number of inpatients with cancer in 2007	3723	2573	<0.001
Inpatients with cancer (%) in 2008	30.1	24.7	0.043
Infrastructure of hospital, n (%)			
Palliative care units, institution-operated hospice	16 (20)	33 (22)	0.87
Psychiatric ward	44 (55)	54 (35)	0.005
Outpatient clinic	71 (89)	109 (71)	0.003
Consultation-liaison service	76 (95)	134 (88)	0.10
Psychiatrists, median	4	1	<0.001
>5	35 (44)	30 (20)	
2–4	23 (29)	43 (28)	
1	19 (24)	34 (22)	
Palliative care team			
Palliative care physician			
Full-time equivalent positions, median (IQR)	1 (1–3)	1 (0–2)	0.008
Physicians with ≥50% of protected time, median	2	2	0.23
Nurses	1	1	0.83
Pharmacists, median	1	1	0.65

with non-approved palliative care teams. Psychiatric consultation-liaison services and psychiatric outpatient clinics were common in both cancer hospitals with approved palliative care teams and those with non-approved palliative care teams. Only 20% of cancer hospitals offered palliative care units or institution-operated hospices.

INVOLVEMENT OF PSYCHIATRIC CONSULTATION-LIAISON SERVICES IN PALLIATIVE CARE PROGRAMS

Table 2 provides an overview of the involvement of psychiatric consultation-liaison services in palliative care teams. Compared with the cancer hospitals with non-approved palliative care teams, the approved palliative care teams provided twice as many referrals (25 versus 12; $P < 0.001$), conducted rounds with all team members more frequently and held conferences more frequently. Similarly, psychiatrists of approved palliative care teams participated in team rounds and conferences more frequently. On the other hand, only half the consultation-liaison psychiatrists typically attended the rounds of the palliative care teams.

AVAILABILITY OF PSYCHIATRIC SERVICES IN PALLIATIVE CARE PROGRAMS

Table 3 provides information about the structure and processes of psychiatric consultation-liaison services in palliative care programs. Psychiatric consultation-liaison services