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Knowledge, beliefs, and concerns about opioids, palliative care, and homecare of advanced cancer patients: a nationwide survey in Japan

Miki Akiyama · Toru Takebayashi · Tatsuya Morita · Mitsunori Miyashita · Kei Hirai · Motohiro Matoba · Nobuya Akizuki · Yutaka Shirahige · Akemi Yamagishi · Kenji Eguchi

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Abstract

Purpose Patients' knowledge, beliefs, or concerns about opioids, palliative care, and homecare can be potential barriers to providing quality palliative care. The primary aim of this study was to clarify knowledge about opioids, beliefs about palliative care, and concerns about homecare in advanced cancer patients.

Methods An anonymous questionnaire was sent to 1,619 outpatients with advanced cancer at 25 hospitals in four different regions of Japan. The respondents were asked to report their knowledge about opioids, beliefs about palliative care, and concerns about homecare, in addition to the levels of their sense of security regarding receiving cancer care in the region.

Results A total of 925 responses were received. In total, 28% believed that opioids are addictive and/or shorten life; 52% believed that palliative care is only for terminally ill patients; 75% agreed that being taken care of at home puts a

heavy burden on the family; and 61% agreed that home-visit services cannot respond to sudden changes in a patient's condition. Levels of patients' sense of security were significantly higher in those who agreed that "opioids can relieve most pain caused by cancer" "palliative care relieves pain and distress", "palliative care is provided along with chemotherapy and/or radiation therapy", and "pain can be alleviated as effectively through home-visit services as it can at the hospital", and those who disagreed with the statements that "home-visit services cannot respond to sudden changes in a patient's condition" and "being taken care of at home puts a burden on the family". **Conclusions** Advanced cancer patients frequently had incorrect knowledge about opioids, a belief that palliative care is only for terminally ill patients, and concerns about homecare, especially the family burden and responses to sudden changes. Providing appropriate information about the safety of opioids, the availability of palliative care

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during the entire course of the disease, and realistic information about homecare is of marked importance to promote patients' sense of security.

Keywords Cancer · Palliative care · Homecare · Knowledge · Opioids

Introduction

The numerous barriers to quality end-of-life care are related to patients, families, medical professionals, and the health care system itself [1]. Among them, multiple empirical studies have identified knowledge, beliefs, or concerns about opioids, palliative care, and homecare in the general population and cancer patients as potential barriers for quality palliative care [2–19]. Many surveys have shown that incorrect knowledge about cancer pain and opioids could interfere with optimal pain management, especially an unrealistic fear of addiction and life-shortening [2–7]. Negative beliefs about palliative care were also one of the significant determinants of the potential underuse of specialized palliative care services [8–12]. Moreover, many patients have concerns and difficulties about homecare, such as the burden on the family, concerns about sudden changes in physical conditions, and the unavailability of physicians visiting their home, and these could influence patients' decisions regarding whether or not to receive homecare [13–19].

These findings indicate that providing appropriate information is of marked importance to achieve optimal palliative care, but, to our best knowledge, no large systematic large survey has been performed to clarify the knowledge about opioids, beliefs about palliative care, and concerns about homecare in a representative sample of advanced cancer patients.

In addition, a sense of security is being acknowledged as a very important concept for cancer patients and their families

[20–23]. The sense of security is evaluated from the perspective of patients living in a region, and these perspectives reflect the quality of the regional system for providing healthcare services and awareness among the population of the services provided by the system. Funk and colleagues indicated that a feeling of security consisted of trust in competent professionals; timely access to necessary care, services, and information; and a sense of their own identity and self-worth as caregivers and individuals [20]. Despite the increasingly perceived importance of the concept of a sense of security, to date, no empirical studies have measured sense of security levels in advanced cancer patients, and explored the potential association between the levels and patients' knowledge, beliefs, and concerns.

The primary aim of this study was therefore to clarify the knowledge about opioids, beliefs about palliative care, and concerns about homecare in advanced cancer patients. Secondary aims included: (1) to clarify the levels of a sense of security, (2) to explore factors associated with knowledge, beliefs, and concerns, and (3) to explore the potential associations between the levels of a sense of security and knowledge about opioids, beliefs about palliative care, and concerns about homecare.

Subjects and methods

A cross-sectional study was performed by sending questionnaires to consecutive outpatients with metastatic or recurrent cancer in four regions of Japan. This survey was part of the pre-intervention measurements collected for the regional intervention trial, the Outreach Palliative Care Trial of Integrated Regional Model study, and the study's methodology is reported in detail elsewhere [24]. The ethical and scientific validity of this study was confirmed by the institutional review board of the Japan Cancer Society, as well as by those of all participating hospitals (protocol registration number, UMIN000001274 of the University hospital Medical Information Network Clinical Trials Registry).

Participating hospitals

Four study regions were chosen for intervention studies to cover a variety of areas with different palliative care systems across Japan: Tsuruoka (population 170,000, Yamagata Prefecture), Kashiwa (population 670,000, Chiba prefecture), Hamamatsu (population 820,000, Shizuoka Prefecture), and Nagasaki (population 450,000, Nagasaki Prefecture). Kashiwa and Hamamatsu, which are relatively large urban cities, have specialized hospital palliative care teams in a cancer center and general hospitals, respectively; Nagasaki has a coordinated palliative care system for home patients in addition to hospital palliative care teams; and

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Tsuruoka, which is a typical rural town, had no formal specialized palliative care service at the time of survey.

Due to the lack of an established method to identify all cancer patients living in a specific area in Japan, we identified all hospitals in the study areas with reference to hospital lists from the Japan Hospital Association, the largest authorized organization of hospitals in Japan, and local resource information. Of the 54 hospitals identified, we excluded 20 hospitals primarily treating psychiatric, rehabilitation, and geriatric non-cancer patients. We approached the remaining 34 hospitals (11,033 beds), and a total of 23 hospitals (8,964 beds, 81%) participated in this survey: 3 hospitals (Tsuruoka), 7 hospitals (Kashiwa), 8 hospitals (Hamamatsu), and 5 hospitals (Nagasaki).

Patients

Inclusion criteria for patients in this study were: (1) adult cancer patients with a primary tumor site in the lung, esophagus, stomach, colon, rectum, pancreas, liver, biliary system, kidney, prostate, bladder, breast, ovary, or uterus; (2) presence of metastatic or recurrent cancer; (3) outpatient visits to the hospital between April and June 2008; and (4) disclosure of malignancy. Exclusion criteria included: (1) incapacity of the patient to complete the questionnaire (dementia, cognitive failure, or psychiatric illness), (2) severe emotional distress of the patient as determined by the principal treating physician, (3) poor physical condition unable to complete the questionnaire, and (4) language difficulty or visual loss. Patients were recruited consecutively, with hospitals either sending each eligible patient a questionnaire by mail or delivering it directly by hand to the patient.

Measurements

Data were collected on: (1) knowledge about opioids, beliefs about palliative care, and concerns about homecare; (2) sense of security; (3) pain intensity; and (4) patient-perceived quality of palliative care. The questionnaire (available from the authors) was constructed based on an extensive literature review, expert consensus among the authors, and a previous study [2–23, 25–27].

Knowledge about opioids, beliefs about palliative care, and concerns about homecare

We asked the respondents to rate the extent to which they agreed with the statements about their knowledge of opioids, beliefs about palliative care, and concerns about homecare on a 5-point Likert-type scale (1 strongly disagree, 2 disagree, 3 unsure, 4 agree, 5 strongly agree) [2]. Knowledge about opioids was examined using two items: “opioids can relieve most pain caused by cancer” and

“opioids are addictive and/or shorten life”. Beliefs about palliative care were examined using three items: “palliative care relieves pain and distress”, “palliative care is provided along with chemotherapy and/or radiation therapy”, and “palliative care is only for terminally ill patients”. Concerns about homecare were examined based on five items: “pain can be alleviated as effectively through home-visit services as it can at the hospital”, “home-visit services cannot respond to sudden changes in a patient’s condition”, “it is hard to find home-visiting physicians”, and “being taken care of at home puts a burden on the family”.

Sense of security about cancer care in the region

The sense of security was measured using the five-item scale to assess feelings of support and security about cancer care in a region [23]. The statements were: (1) “I would feel secure in receiving cancer treatment”, (2) “my pain would be well-relieved”, (3) “medical staffs will adequately respond to my concerns and pain”, (4) “I would feel secure as a variety of medical care services are available”, (5) “I would feel secure in receiving care at home”. We asked participants to rate their level of agreement with the statements on a 7-point Likert scale (1 strongly disagree, 2 disagree, 3 slightly disagree, 4 not sure, 5 slightly agree, 6 agree, 7 strongly agree). The total score of five items, ranging from 5 to 35, quantifies the levels of the sense of security; a higher score indicates higher sense of security levels. Factor validity was established based on the emergence of one factor by explanatory factor analysis, and a high Cronbach’s alpha coefficient (0.91) demonstrated sufficient internal consistency. Criterion-related validity established a significant difference among the total scores of general populations from several areas with various health care services in Japan.

Pain intensity

Pain intensity was measured using the Japanese adaptation of the Brief Pain Inventory, with a score given for the pain at its worst (0–10), at its least (0–10), and a score for the average pain felt (0–10) in the previous 24 h [25]. Its reliability and validity in Japanese populations has been established [25]. For this study, average pain was used for analyses.

Patient-perceived quality of palliative care

Patient-perceived quality of palliative care was measured using the Care Evaluation Scale [26, 27]. The Care Evaluation Scale is a well-validated and commonly used measurement tool in Japan to quantify the level of patient or family-perceived need for improvements in palliative care. The full version of the Care Evaluation Scale consists of eight subscales (three items for seven domains and two

items for one domain) with a 6-point Likert-type scale from “1 improvement is not necessary at all” to “6 highly necessary”: physical care provided by physicians, physical care provided by nurses, psycho-existential care, help with decision making, coordination/consistency of care, environment, availability, and cost. For this study purpose, we used the first five subscales (15 items), because the study aim focused on interpersonal areas, not social areas (i.e., environment, availability, and cost). Each subscale score was calculated as an average of the items belonging to the subscale, and the total score was calculated as an average of subscale scores. All scores were proportionally adjusted to range from 0 to 100 following the original studies, and, thus, higher values indicate a lower perceived necessity for improvement.

In addition, information about the subjects' demographic characteristics (age, sex, and family), performance status, and medical status was collected through self-administered questionnaires. The performance status was measured using the European Organization for Research and Treatment of Cancer performance status: 0 (no symptoms, able to carry out all activities without restrictions), 1 (mild symptoms but ambulatory and able to carry out work of a light or sedentary nature), 2 (ambulatory and capable of self-care for more than 50% of their waking hours), 3 (laying in bed or sitting in a chair for more than 50% of their waking hours), and 4 (laying in bed or sitting in a chair for the entire day).

Statistical analysis

The 5-point scale to measure patients' knowledge, beliefs, and concerns was simplified into two categories (“strongly agree” and “agree” vs. others). As the age, sex, and regions of the subjects were considered to affect the knowledge, beliefs, and concerns, they were selected a priori as explanatory variables. The chi-square test was used to examine the rate of “agree” responses in relation to the age, sex, and region. The total sense of security scores were examined employing Student's *t* test and analysis of variance. To elucidate the influence of the age, sex, pain level, and patient-reported quality of palliative care on patients' knowledge, beliefs, and concerns, multiple logistic regression analyses were performed to determine odds ratios. With sense of security scores, multiple linear regression analyses were used. All models included the following covariates selected a priori: age in years (≤ 59 , 60–74, ≥ 75); sex; region; number of family members living with the participant; performance status; current medical status; pain level; and the patient-reported quality of care measured by the Care Evaluation Score (≤ 49 , 50–79, ≥ 80). Trend analysis was conducted, and the Care Evaluation Score was included as an ordinal variable. Comparisons were performed with analysis of covariance, adjusting for age and sex, because these two factors were significant

covariates for confidence levels. As the results were essentially the same across the four regions (data not shown), we report only the overall results. All analyses were carried out using STATA ver. 9.1 (College Station, TX, USA).

Results

Of 2,087 patients who met the inclusion criteria, 367 patients were excluded due to: (1) mental incapacity of the patient to complete the questionnaire such as dementia, cognitive failure, or psychiatric illness ($n=137$), (2) patient death, admission, or changing hospitals during the procedure ($n=101$), (3) severe emotional distress ($n=52$), (4) responsible physicians unavailable for technical reasons ($n=30$), (5) poor physical conditions ($n=28$), (6) language difficulty or visual loss ($n=5$), as well as other unspecified reasons ($n=14$). In addition, 101 patients refused to receive the questionnaire. Questionnaires were thus sent to 1,619 patients, and 5 returned due to being sent to the wrong address. Overall, 925 responses (57%) were obtained, and 833 responses were finally analyzed due to missing values for some of the primary endpoints.

Participant characteristics

The participant characteristics are summarized in Table 1. The mean age \pm standard deviation (SD) was 67 ± 11 years, and 57% were men. The performance status was 0 or 1 in about 70% of the respondents, and 60% were receiving chemotherapy and/or radiation therapy.

Knowledge about opioids, beliefs about palliative care, and concerns about receiving care at home

As shown in Table 2, nearly 30% of the patients believed that opioids are addictive and/or shorten life, and about half believed that palliative care is only for terminally ill patients. Regarding concerns about receiving care at home, 75% agreed or strongly agreed that being taken care of at home puts a heavy burden on the family, and about 60% agreed that home-visit services cannot respond to sudden changes in a patient's condition.

Sense of security

The mean score of the sense of security was 27 ± 5.6 (Table 2). The proportions of respondents who agreed (i.e., scored 5 or greater on the 7-point Likert-type scale) with each statement were: 82% (“I could feel secure on receiving

Table 1 Participant characteristics (*N*=833)

	Number	Percent
Age (years)		
< 60	208	25
60–74	405	49
75 or over	220	26
Sex		
Male	473	57
Female	360	43
Region		
Yamagata	135	16
Chiba	137	16
Shizuoka	302	36
Nagasaki	259	31
Family living with participant^a		
Yes	771	93
No	61	7
Performance status (EORTC)^b		
0	234	28
1	367	44
2	174	21
3 or 4	52	6
Current medical status		
Receiving chemotherapy and/or radiation therapy	491	60
Average pain score in previous 24 h		
0–4	721	89
5–10	92	11

^a *n* = 832, due to missing values

^b *n* = 827, due to missing values

cancer treatment”), 78% (“pain could be well-relieved”), 78% (“medical staff adequately responded to concerns and pain”), 59% (“I could feel secure as a variety of medical care services are available”), and 75% (“I could feel secure on receiving care at home”).

Factors associated with the patients’ knowledge about opioids, beliefs about palliative care, and concerns about homecare

Older respondents and patients who reported lower-level quality of palliative care they received were significantly more likely to have incorrect knowledge about opioids (Table 3). Although male patients were significantly more likely to know that opioids can relieve most pain caused by cancer, they were more likely to have incorrect knowledge that opioids were addictive and/or shorten life (*p* = 0.03). Patients’ beliefs about palliative care and concerns about homecare were not significantly influenced by age and

gender, while the patient-reported quality of palliative care was significantly associated that positive beliefs about palliative care (“palliative care relieves pain and distress”) and lower levels of concerns about homecare (“pain can be alleviated as effectively through home-visit services as it can at the hospital”).

Associations between the sense of security and knowledge about opioids, beliefs about palliative care, and concerns about homecare

Sense of security levels were significantly higher in patients who agreed that “opioids can relieve most pain caused by cancer”, “palliative care relieves pain and distress”, “palliative care is provided along with chemotherapy and/or radiation therapy”, and “pain can be alleviated as effectively through home-visit services as it can at the hospital”, as well as in the patients who did not agree that “home-visit services cannot respond to sudden changes in a patient’s condition” and “being taken care of at home puts a burden on the family” (Table 4).

In addition, higher senses of security levels were significantly associated with an older age, male gender, lower pain intensity, and higher patient-reported quality of palliative care (Table 3).

Discussion

This is the first large-scale survey designed to clarify knowledge about opioids, beliefs about palliative care, and concerns about homecare in advanced cancer patients as a representative sample of multiple regions, in addition to the sense of security; the factors associated with knowledge, beliefs and concerns; and associations between the sense of security levels and knowledge and beliefs. The most important findings of this study involved clarification of the patients’ knowledge about opioids, beliefs about palliative care, and concerns about homecare.

First, about 30% of advanced cancer patients believed that opioids are addictive and/or shorten life. This figure is very close to that in previous surveys of the general population in Japan and other countries (i.e., 30–40%) [2, 5, 7]; and somewhat lower than some studies (i.e., 70%) [4, 6]. In addition, this study revealed that older and male patients were significantly more likely to have incorrect knowledge about opioids. As many studies have identified misconceptions about opioids as dominant barriers to optimal pain control [3, 5], these results confirm that providing appropriate information about opioids, especially to older and male patients, is of considerable importance to achieve maximum pain control.

Table 2 Knowledge about opioids, beliefs about palliative care, and concerns about receiving care at home

	All subjects	Age (years)			<i>P</i> value	Sex		<i>P</i> value
		<60	60–74	75+		Male	Female	
Knowledge about opioids								
Opioids can relieve most pain caused by cancer (<i>n</i> =743)	545 (73%)	143 (71%)	272 (75%)	130 (74%)	0.620	320 (77%)	225 (69%)	0.018
Opioids are addictive and/or shorten life (<i>n</i> =718)	202 (28%)	40 (20%)	105 (30%)	57 (34%)	0.007	126 (32%)	76 (24%)	0.002
Beliefs about palliative care								
Palliative care relieves pain and distress (<i>n</i> =753)	570 (76%)	155 (77%)	280 (75%)	135 (76%)	0.905	313 (74%)	257 (79%)	0.105
Palliative care is provided along with chemotherapy and/or radiation therapy (<i>n</i> =742)	474 (64%)	124 (62%)	230 (63%)	120 (69%)	0.278	147 (35%)	121 (37%)	0.578
Palliative care is only for terminally ill patients (<i>n</i> =727)	377 (52%)	97 (48%)	187 (52%)	93 (55%)	0.436	216 (53%)	161 (50%)	0.508
Concerns about receiving care at home								
Pain can be alleviated as effectively through home-visit services as it can at the hospital (<i>n</i> =748)	286 (38%)	67 (33%)	144 (39%)	75 (42%)	0.203	171 (41%)	115 (35%)	0.006
Home-visit services cannot respond to sudden changes in a patient's condition (<i>n</i> =744)	452 (61%)	103 (52%)	241 (66%)	108 (61%)	0.004	256 (62%)	196 (59%)	0.442
It is hard to find home-visiting physicians (<i>n</i> =742)	419 (57%)	113 (57%)	215 (59%)	91 (51%)	0.191	227 (55%)	192 (58%)	0.354
Being taken care of at home puts a burden on the family (<i>n</i> =748)	557 (75%)	152 (76%)	274 (75%)	131 (73%)	0.811	303 (73%)	254 (76%)	0.309
Sense of security score (<i>n</i>=833)	27.0±5.6 (<i>n</i>=833)	25.5±5.5 (<i>n</i>=208)	27.3±5.6 (<i>n</i>=405)	27.8±5.1 (<i>n</i>=220)	<0.001	27.4±5.4 (<i>n</i>=473)	26.4±5.8 (<i>n</i>=360)	0.009

Each column indicates the number (percentage) of respondents who agreed or strongly agreed with the statement, except for the last column, which indicates the mean ± S.D. (number of subjects)

Table 3 Factors associated with knowledge and beliefs about palliative care, and sense of security by multivariate analysis

	Age (years)			Sex		Pain	Care evaluation score (total)			Trend P
	<59	60–74	75+	Male	Female	Pain score	–49	50–79	80+	
Knowledge about opioids										
Opioids can relieve most pain caused by cancer (<i>n</i> =743)	1	1.1 0.7–1.6	0.9 0.6–1.5	1	0.6* 0.4–0.8	1.1 0.6–2.0	1	1.1 0.7–1.7	2.3* 1.4–3.7	<i>P</i> <0.001
Opioids are addictive and/or shorten life (<i>n</i> =718)	1	1.8 1.1–2.7	2.4* 1.4–4.0	1	0.7* 0.5–0.9	1.3 0.7–2.2	1	0.6 0.4–1.0	0.6* 0.4–0.9	<i>P</i> =0.04
Beliefs about palliative care										
Palliative care relieves pain and distress (<i>n</i> =753)	1	0.9 0.6–1.4	1.1 0.6–1.9	1	1.2 0.8–1.7	0.9 0.5–1.5	1	1.4 0.9–2.3	2.4* 1.5–4.0	<i>P</i> <0.001
Palliative care is provided along with chemotherapy and/or radiation therapy (<i>n</i> =742)	1	1.0 0.7–1.5	1.4 0.9–2.2	1	0.9 0.7–1.3	0.8 0.5–1.3	1	1.1 0.7–1.6	1.4 0.9–2.2	<i>P</i> =0.11
Palliative care is only for terminal patients (<i>n</i> =727)	1	1.2 0.8–1.7	1.4 0.9–2.2	1	0.9 0.7–1.3	0.9 0.9–1.5	1	0.8 0.5–1.2	0.8 0.5–1.2	<i>P</i> =0.39
Concerns about receiving care at home										
Pain can be alleviated as effectively through home-visit services as it can at the hospital (<i>n</i> =748)	1	1.1 0.7–1.6	1.2 0.7–1.9	1	0.8 0.5–1.0	0.6 0.3–1.0	1	0.8 0.5–1.3	1.7* 1.1–2.6	<i>P</i> =0.002
Home-visit services cannot respond to sudden changes in a patient's condition (<i>n</i> =744)	1	2.1* 1.4–3.0	1.8* 1.1–2.8	1	1.0 0.8–1.4	0.9 0.5–1.5	1	1.1 0.7–1.8	0.7 0.5–1.1	<i>P</i> =0.07
It is hard to find home-visiting physicians (<i>n</i> =742)	1	1.2 0.8–1.7	0.9 0.6–1.3	1	1.0 0.8–1.4	1.0 0.6–1.6	1	1.1 0.7–1.6	0.8 0.5–1.3	<i>P</i> =0.22
Being taken care of at home puts a burden on the family (<i>n</i> =748)	1	0.9 0.6–1.4	0.9 0.6–1.5	1	1.1 0.8–1.6	1.5 0.8–2.7	1	1.2 0.7–1.9	1.1 0.7–1.7	<i>P</i> =0.92
Sense of security score (<i>n</i>=833)	–	+1.5* 0.6, 2.3	+2.4* 1.3, 3.4	–	–0.8* –1.5, –0.1	–1.8* –2.9, –0.7	–	+0.9* –0.1, 1.8	+4.4* 3.4, 5.3	<i>P</i><0.001

Values in the table indicate odds ratios and 95% confidence interval. Multiple logistic regression analysis for knowledge about opioids and beliefs about palliative care indicates adjusted odds ratio and *P* value; multiple linear regression analysis for sense of security score indicates adjusted difference in score; all models include age (<60, 60–74, 75+; <60 as reference category), sex (male as reference category), region of residence, family living with participant, physical activity status, current medical status, average pain score in previous 24 h, and care evaluation score (<50, 50–79, 80+; <50 as reference category)

**p*<0.05

Second, this study revealed that about half of the patients believed that palliative care is only for terminally ill patients, while similar percentages of the patients believed that palliative care is provided along with chemotherapy and/or radiotherapy. The findings are consistent with previous studies that revealed a negative image of palliative care among both patients and healthcare professionals [8–11]. In Japan, a strong policy change from end-of-life care to “early” palliative care resulting in the involvement of palliative care teams was significantly associated with patient- and family-perceived appropriate referrals to specialized palliative care services [12, 28]. These findings suggest that along with ongoing efforts of disseminating palliative care teams not only for terminally ill patients but also those with intense symptoms and suffering irrespective

of disease stages, providing information about the emerging concept of palliative care to patients themselves is another area to be improved to maximize palliative care use for enhancing patients' quality of life

Third, this study revealed a high level of concern among advanced cancer patients about receiving homecare. The concerns most commonly reported included family burden, being unable to adequately respond to sudden changes in out-of-hours care, and availability of family physicians visiting the home. These figures are very close to data provided by the Ministry of Health, Labour, and Welfare, whereby the most common difficulties with homecare surround concerns about the burden to the family and sudden changes in physical conditions [15], and this is also consistent with Western studies which identified that

Table 4 Associations between the levels of feeling secure and knowledge about opioids, beliefs about palliative care, and concerns about homecare

		Number	Mean ± S.D.	P value
Knowledge about opioids				
Opioids can relieve most pain caused by cancer	Yes	545	27.9±6.5	<0.001
	No	198	25.8±5.9	
Opioids are addictive and/or shorten life	Yes	202	27.2±5.8	0.857
	No	516	27.3±6.9	
Beliefs about palliative care				
Palliative care relieves pain and distress	Yes	570	28.3±8.0	<0.001
	No	183	25.6±6.1	
Palliative care is provided along with chemotherapy and/or radiation therapy	Yes	474	28.1±6.5	<0.001
	No	268	25.9±6.1	
Palliative care is only for terminal patients	Yes	377	27.3±6.4	0.684
	No	350	27.2±6.4	
Concerns about receiving care at home				
Pain can be alleviated as effectively through home-visit services as it can at the hospital	Yes	286	29.3±5.7	<0.001
	No	462	26.1±6.4	
Home-visit services cannot respond to sudden changes in a patient's condition	Yes	452	27.1±6.4	0.026
	No	292	27.9±6.1	
It is hard to find home-visiting physicians	Yes	419	27.2±6.5	0.193
	No	323	27.7±6.1	
Being taken care of at home puts a burden on the family	Yes	557	27.1±6.8	0.027
	No	191	28.1±5.7	

concern about burden is a major factor affecting a cancer patient's decision regarding homecare [18, 29, 30]. The family burden is one of the most relevant issues in this population, and this includes the patient-perceived burden and actual family burden in caregiving. Multiple studies have indicated that the patient-perceived burden has one of the largest impacts on suffering in terminally ill cancer patients, even if family members do not report an actual caregiving burden [31, 32]. These findings indicate that clinicians should alleviate patient concerns about burden when they receive homecare through the provision of psychological support for patients themselves, as well as arranging regional resources to reduce the actual family burden.

Another important finding of this study was clarification of the levels of a sense of security and the significant association between the sense of security and patients' knowledge, beliefs, and concerns. To our best knowledge, this is the first reported study to demonstrate the significant association between the sense of security and patients' knowledge, beliefs, and concerns. This finding suggests that a sense of security is shaped at least partly by knowledge and beliefs, and providing appropriate information could be of marked importance to enhance patients' sense of security.

Despite the strengths of this study, including obtaining a relatively large number of patients from multiple regions of Japan and regional representative sampling, there are some limitations. First, it was a cross-sectional study, and, thus,

the observed associations among variables might not be causal. Second, the response rate was moderate and no data were collected from the non-respondents. This could be a potential selection bias which may distort the study results. Third, unmeasured confounding factors, such as educational levels and family forms, could have distorted the study results, although adjustment was made for the confounders measured in the multivariate analyses. Finally, patients' knowledge, beliefs, and concerns are inevitably influenced by the social and cultural views in the societies they live in.

In conclusion, advanced cancer patients frequently had incorrect knowledge about opioids, a belief that palliative care is only for terminally ill patients, and concerns about homecare, especially the family burden and responses to sudden changes. The knowledge, beliefs, and concerns were significantly associated with the sense of security levels regarding receiving cancer care in the region. Providing appropriate information about the safety of opioids, availability of palliative care during the entire course of a disease, and realistic information about homecare is of marked importance to achieve the optimal quality of life for cancer patients.

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Conflict of interest None.

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市民の緩和ケアに対するイメージの変化

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Changes in Public Images of Palliative Care

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Key words : 緩和ケア, 市民講座, 市民教育

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背景

緩和ケアや医療用麻薬に対する誤ったイメージは、緩和ケア普及の妨げとなることが示唆されている¹⁻³⁾。しかしながらわが国では、3~5割の国民、あるいはがん患者が「医療用麻薬は命を縮める」や「緩和ケアは末期だけのものである」といったイメージをもっており⁴⁻⁵⁾、このような誤解を取り除くための対策が必要とされている。

緩和ケアや医療用麻薬に関する正しい知識を得てもらうために、一般市民やがん患者を対象とした教育講座やセミナーが各地で開かれているが、効果について評価した研究はほとんどない。1地域の住民を対象とした研究では、緩和ケアについての講演会は緩和ケアに対する誤ったイメージを取り除くために、短期的に有効であることが示さ

れている⁶⁾。しかし、複数の地域の一般市民を対象とした研究はこれまでに報告されていない。本調査は、複数の地域の一般市民を対象に、市民講座の受講前後での緩和ケアに対するイメージの変化を検証することを目的とする。

対象・方法

緩和ケア普及のための地域プロジェクト(OPTIM)⁷⁾の介入の一部として、2008年度から2010年度にかけて、山形県鶴岡市と静岡県浜松市の一般市民を対象に緩和ケアに関する市民講座を行った。市民講座のテーマは、鶴岡では「地域で支えるがん緩和ケア—あなたらしく生きるために」(2008年11月15日実施:講義・パネルディスカッション)、浜松では「上手に使おうホスピス・緩和ケア」(2008年9月27日実施:講義)、

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「安心できるがん緩和医療をめざして一患者さんとご家族の明日のために」(2009年9月26日実施：講義), 「がんと向き合う一地域で支える」(2010年7月18日：講義)であった。

いずれも講演の中で, 「緩和ケアは, 化学療法や放射線治療など, がんに対する治療と一緒に進む」「モルヒネなど医療用麻薬は, 麻薬中毒になったり命を縮める作用はない」「ホスピスは“末期”だけでなく, 在宅療養を支える役割もある」ことを伝えた。また, 地域で利用できる緩和ケアの資源を具体的に紹介することによって「がんであっても, 苦痛や心配には十分に対処してもらえると思う」「がんであっても, 安心して自宅で療養できる」ことを伝えた。

参加者1,200名を対象に調査を行った。鶴岡地域の参加者は319名, 浜松地域の参加者は, 2008年度は72名, 2009年度は600名, 2010年度は209名の計881名であった。質問紙は, 講座開始前に全員に配布し, 終了後に任意で回収した。1回の質問紙で受講前後のイメージを尋ねた。回答は匿名で行った。

緩和ケアのイメージについて, 「緩和ケアは, 化学療法や放射線治療などがんに対する治療と一緒に進む」「モルヒネなど医療用麻薬は, 麻薬中毒になったり命を縮める」「ホスピスは“末期”だけでなく, 在宅療養を支える役割もある」という緩和ケアの知識に関する3項目と, 「がんであっても, 苦痛や心配には十分に対処してもらえると思う」「がんであっても, 安心して自宅で療養できる」という安心感に関する2項目で尋ねた。それぞれの項目ごとに, 受講前のイメージと受講後のイメージを, 「そう思っていなかった・そう思わない」(1), 「そう思っていた・そう思う」(2), 「とてもそう思っていた・とてもそう思う」(3), の3件法で尋ねた^{4, 9)}。

緩和ケアの受講前後でのイメージについて平均値の比較を行った。受講前後でイメージに変化がみられた群とみられなかった群に分けて, カイ2乗検定を行った。イメージに変化がみられた群とは, 受講前は各項目に対し「そう思わなかった」

と答えたが, 受講後は「そう思う, とてもそう思う」と答えた, 否定的だったイメージが肯定的に変化した参加者を指す。

イメージに変化がみられなかった群とは, 受講前に「そう思わなかった」, 受講後に「そう思わない」を選択し, 否定的なイメージをもち続けた参加者, または受講前は「そう思っていた, とてもそう思っていた」を選択したが, 受講後は「そう思わない」を選択した, 肯定的なイメージが否定的に変化した参加者を示す(いずれの群も, 逆転項目の場合は反対の処理を行った)。

結 果

858名(回収率71.5%)から回答を得た。年代別では, 60歳代(27.3%)が最も多く, 続いて50歳代(22.9%), 70歳代以上(21.3%), 40歳代(17.6%), 30歳代(7.3%), 20歳代(3.6%)であった。男女比は1:4であった。参加者の内訳は, 一般市民(55.1%)が最も多く, 続いて医療関係者(18.5%), 患者の家族(10.2%), 患者(8.4%), その他(7.8%)であった。

全体として, 市民講座の受講前後での緩和ケアに関するイメージを比較したところ, 「緩和ケアは, 化学療法や放射線治療などがんに対する治療と一緒に進む」「モルヒネなど医療用麻薬は, 麻薬中毒になったり命を縮める」「ホスピスは“末期”だけでなく, 在宅療養を支える役割もある」「がんであっても, 苦痛や心配には十分に対処してもらえると思う」「がんであっても, 安心して自宅で療養できる」のすべての項目で受講前より受講後の方がイメージが肯定的に変化した(表1)。

鶴岡と浜松の両地域で, すべての項目において, 受講前より受講後の方が緩和ケアや医療用麻薬に対するイメージは肯定的に変化した(表1)。

また, 受講前後で否定的なイメージが改善した割合は, 性別による有意差はみられなかった。年齢別では, 60歳以上の高齢者の方が「モルヒネなど医療用麻薬は, 麻薬中毒になったり命を縮める」という認識が改善しない傾向がみられた。

表1 緩和ケアに対するイメージについての質問項目とその変化

質問項目	t検定			「とてもそう思う」「そう思う」と回答した対象者の割合			
	全体 (n=858)			鶴岡 (n=208)		浜松 (n=650)	
	講演会前	講演会后	p	講演会前	講演会后	講演会前	講演会后
1. 緩和ケアは、化学療法や放射線治療などがんに対する治療と一緒にを行う	1.92 ± .68	2.52 ± .56	<0.01	67.3%	68.3%	59.1%	82.5%
2. モルヒネなど医療用麻薬は、麻薬中毒になつたり命を縮める ※逆転項目	1.54 ± .66	1.29 ± .63	<0.01	30.3%	10.1%	40.0%	19.1%
3. ホスピスは「末期」だけでなく、在宅療養を支える役割もある	1.73 ± .72	2.45 ± .54	<0.01	56.3%	70.2%	45.5%	83.4%
4. がんであっても、苦痛や心配には十分に対処してもらえると思う	1.87 ± .64	2.43 ± .56	<0.01	57.7%	71.6%	61.8%	82.5%
5. がんであっても、安心して自宅で療養できる	1.57 ± .66	2.20 ± .63	<0.01	42.8%	64.4%	37.2%	73.5%

表2 緩和ケアに対する否定的なイメージが改善した割合

質問項目	性別			年齢			地域			性別		
	男性	女性	p	<60歳	≥60歳	p	鶴岡	浜松	p	市民	医療関係者	p
1. 緩和ケアは、化学療法や放射線治療などがんに対する治療と一緒にを行う (n=192)	87.5%	89.3%	0.75	89.7%	88.9%	0.86	65.2%	92.3%	<0.01	89.0%	88.9%	0.98
2. モルヒネなど医療用麻薬は、麻薬中毒になつたり命を縮める (n=351)	54.1%	64.2%	0.11	67.5%	58.1%	0.073	68.3%	60.4%	0.25	62.7%	54.3%	0.33
3. ホスピスは「末期」だけでなく、在宅療養を支える役割もある (n=291)	94.4%	95.7%	0.69	97.5%	92.9%	0.060	89.2%	96.5%	0.046	96.1%	91.9%	0.25
4. がんであっても、苦痛や心配には十分に対処してもらえると思う (n=196)	85.3%	88.7%	0.58	87.2%	91.3%	0.38	90.0%	87.8%	0.70	92.0%	57.1%	<0.01
5. がんであっても、安心して自宅で療養できる (n=358)	78.3%	77.9%	0.95	79.0%	77.1%	0.67	73.3%	78.5%	0.38	79.6%	63.6%	0.017

地域別では、「緩和ケアは、化学療法や放射線治療などがんに対する治療と一緒にを行う」「ホスピスは「末期」だけでなく、在宅療養を支える役割もある」の知識に関する項目で、鶴岡に比較して浜松で有意な改善がみられた。

立場別では、「がんであっても、苦痛や心配には十分に対処してもらえると思う」「がんであっても、安心して自宅で療養できる」の安心感に関する項目で、市民に比較して医療従事者の認識が改善しにくかった(表2)。

考 察

本調査の結果から、緩和ケアに関する市民対象の教育講座は、市民の緩和ケアのイメージを少なくとも短期的に変化させる可能性が示唆された。「緩和ケアは、化学療法や放射線治療などがんに対する治療と一緒にを行う」「ホスピスは「末期」だけでなく、在宅療養を支える役割もある」という項目について、受講後に「とてもそう思う・そう思う」と答えた参加者が増加したことから、緩和ケアに関する講座は「緩和ケア=末期」という

イメージを取り除き、早期からの緩和ケアを推進するために効果的であることが示唆される。同様に、「モルヒネなど医療用麻薬は、麻薬中毒になつたり命を縮める」という項目では、受講後に「とてもそう思う・そう思う」と答えた参加者が減少したことから、緩和ケアに関する講座は麻薬に関するそのような間違つたイメージを払拭するために有効であることが示唆される。

また、「がんであつても、苦痛や心配には十分に対処してもらえらると思う」「がんであつても、安心して自宅で療養できる」という項目についても、受講後に「とてもそう思う・そう思う」と答えた参加者が増加したことから、参加者が講座を受講することで、がんに罹患しても住んでいる地域や自宅で治療を受けながら生活できるという安心感が得られていると考えられる。

今回、対象とした2地域では同じようなイメージの変化がみられたことから、このような市民講座はいずれの地域でも有効であると考えられる。

受講前後でのイメージに変化があつた群となつた群で、対象者の性別に差がみられなかつたことから、男女の違いによるイメージの認識に大きな変化はないことが示唆されると考えられる。

また、年齢別では、60歳以上の高齢者の方が、緩和ケアの知識に関する認識が変わりにくい傾向があつた。高齢者向けの講演を行う場合には、知識に関する説明だけでなく、高齢者の経験や生活に即した情報提供を行うことがより効果的ではないかと考えられる。

地域別にみると、知識に関する項目で差はみられたが、これは鶴岡地域にもともと緩和ケアに肯定的なイメージを抱いていた参加者が多かつたため、このような結果になつたと考えられる。

同様に、参加者の立場別にみて、医療関係者の方が安心感に関するイメージが変わりにくいとの結果が得られたが、これは、医療関係者は実際に現場を知っており、現実的な経験に基づいたイメージを持っているためであると考えられる。

このように、市民に緩和ケアに関する正しいイメージを提示し、今後の緩和ケアの利用につなげ

るためにも、緩和ケアに関する教育講座は重要であるといえる。

本調査の限界として、市民講座を受講した前と後にイメージを聞いておらず、受講をした後のみに、受講前後のイメージを聞いているため、対象者の認識にバイアスがかかっている可能性が指摘される。また、本調査では市民講座の長期的な効果を検討していないため、今後、そのような調査を行うことも重要である。

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Usefulness of Olanzapine as an Adjunct to Opioid Treatment and for the Treatment of Neuropathic Pain

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ABSTRACT

Background: The use of opioids for pain management is often associated with nausea and vomiting. Although conventional antipsychotics are often used to counter emesis, they can be associated with extrapyramidal symptoms. However, chronic pain can induce sleep disturbance. The authors investigated the effects of the atypical antipsychotic olanzapine on morphine-induced emesis and the sleep dysregulation associated with chronic pain.

Methods: A receptor binding assay was performed using mouse whole brain tissue. The emetic response in ferrets was evaluated by counting retching and vomiting behaviors. Catalepsy in mice was evaluated by placing both of their forepaws over a horizontal bar. Released dopamine was measured by an *in vivo* microdialysis study. Sleep disturbance in mice in a neuropathic pain-like state was assayed by electroencephalogram and electromyogram recordings.

Results: Olanzapine showed high affinity for muscarinic M₁ receptor in brain tissue. Olanzapine decreased morphine-induced nausea and vomiting in a dose-dependent manner.

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What We Already Know about This Topic

- Chronic pain is often associated with sleep disturbances
- Severe side effects of opioids given for pain treatment include nausea and vomiting

What This Article Tells Us That Is New

- In ferrets, olanzapine, an atypical thienobenzodiazepine antipsychotic drug, suppressed morphine-induced emesis and improved pain-related sleep disturbances

However, olanzapine at a dose that had an antiemetic effect (0.03 mg/kg) did not induce catalepsy or hyperglycemia. In addition, olanzapine at this dose had no effect on the morphine-induced release of dopamine or inhibition of gastrointestinal transit. Finally, olanzapine inhibited thermal hyperalgesia and completely alleviated the sleep disturbance induced by sciatic nerve ligation.

Conclusion: These findings suggest that olanzapine may be useful for the treatment of morphine-induced emesis and as an adjunct for the treatment of neuropathic pain associated with sleep disturbance.

THE World Health Organization¹ has stated that morphine is the “gold standard” for the treatment of moderate to severe pain caused by cancer. However, the use of morphine for this purpose is often associated with distressing side effects, such as drowsiness, constipation, emesis, and delirium.^{2,3} Many clinicians consider that dopamine receptor antagonists, including prochlorperazine, are the preferred drugs for combating opioid-induced nausea and vomiting.^{2,3} However, these drugs often produce adverse effects, including extrapyramidal symptoms.⁴ Therefore, new approaches are needed to prevent opioid-induced emesis, as is a better understanding of the mechanism of drug action.

Nausea and vomiting are controlled by the “vomiting center” in the medulla oblongata,⁵ which receives signals from the chemoreceptor trigger zone (CTZ) in the area postrema, the gastrointestinal tract, the vestibular apparatus in the temporal lobe, and the cerebral cortex.⁶ Opioids have emetogenic effects by stimulating the CTZ and the vestibular apparatus and by inhibiting gut motility.⁷ Although stimu-