

used more frequently in private agencies than in public agencies (Table 5). Consequently, the type of agency significantly affected LTCI service use, indicating that LTCI service use was promoted not only by care need, but also by the agencies' aims. Private care-management agencies played a role in promoting the use of care service, but their quality of care plans might be questionable.

Future directions of the agencies

In this study, agencies proved to be an important factor with a considerable effect on LTCI. Under LTCI, private corporations can be agencies, and users can choose LTC service agencies freely.^{1,2} Japan's former elderly care welfare policy was replaced in the hope that participation by the private sector would have a favorable effect by bringing free competition to the market, thereby improving LTC services and enabling users with care needs to choose the appropriate agency. Actually, private agencies are factors in promoting LTCI service use, and their LTC services differ depending on the type of agency. But again, a disadvantage of privatization in LTCI might be the quality of care services.

Our study led us to consider the future direction of public and private agencies. Private agencies were first allowed to enter the market under LTCI. There may be one option for private agencies to expand their business as LTC service agencies. The results of this study revealed that more people used the LTCI system in private agencies, and their care level were relatively low (Table 2). Private agencies are playing a role in privatizing a wide range of care services, including prevention programs and those for relatively healthy people, which will contribute to the agencies' profitability as well.

For public agencies, the point is that they can operate regardless of profit compared to private agencies. Naturally, the public sector should make care plans for low-income patients and for those in need of high-level care. Public agencies should play a role in standardizing LTC plans which can really meet users' needs, and complement private agencies.

In order to enable users to choose agencies freely and to receive appropriate services, information about each agency's services and performance must be disclosed.^{7,8} Moreover, the system needs third parties to analyze the disclosed information fairly according to a set of standards, and users must be informed of the results of the analysis. This structure will realize a true "user's option system" through which users can choose LTC agencies without being affected by advice from municipal governments or agencies. True privatization under free competition and choice in LTCI will be realized with a favorable balance of private and public sectors.

In 2005, LTCI reform was implemented. The 2005 reform required service providers to make their program and quality-of-service information publicly available, to support consumer decision-making. Also, municipalities' control and discretion increased. Public health nurses at municipal comprehensive community support centers were mainly responsible for care plans of those certified to receive new preventive care benefits. Municipalities had greater control over the quantity, quality and types of services.²¹

Our study is unique because this, as far as we know, is the first English language academic paper utilizing the claim data to focus on the new participation by private agencies in Japan LTCI. Moreover, this study is based on the data of claims obtained by the municipal government, which were accurate and reliable. Such data have rarely been used in other studies of LTCI.

We should discuss some limitations of our study. First, our data were from only one area, so the characteristics of the area might have affected the results. Second, the study period was 6 months from the start of LTCI, so the data were obtained when the system was in its infancy. The third limitation was the small number of subjects. Further studies considering the area, timing and period will be needed in order to grasp the effect of agencies' role in LTCI and to identify more accurate trends regarding these agencies.

To evaluate the effects of sampling bias, we analyzed not only the continuators but all the data by person-months. Comparing these two results, the basic characteristics of all data and our final data sample (shown in parentheses) were: male 32.4% (36%), age 80.3 + 9 years (79.6 + 8.9), and care level 2.5 + 1.6 (2.1 + 1.6), and slightly more female, younger and lower care level samples were selected as continuators. However, we assume that these difference did not affect the sampling bias because of the results of multiple regression analysis of all person-months data (significant variables were the same, and *P*-value of the type of agency was *P* < 0.0005, stronger than our final result).

In conclusion, differences were found in the types of clients and service use between public and private care management agencies. Private care management agencies play an important role in promoting the use of care services, but the quality of their care plans might be questionable. We had better consider the quality of care, especially by private agencies which might prioritize their own benefit. To make LTCI more effective, a favorable balance of private and public sectors is needed.

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Collaboration between physicians and a hospital-based palliative care team in a general acute-care hospital in Japan

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Abstract

Background: Continual collaboration between physicians and hospital-based palliative care teams represents a very important contributor to focusing on patients' symptoms and maintaining their quality of life during all stages of their illness. However, the traditionally late introduction of palliative care has caused misconceptions about hospital-based palliative care teams (PCTs) among patients and general physicians in Japan. The objective of this study is to identify the factors related to physicians' attitudes toward continual collaboration with hospital-based PCTs.

Methods: This cross-sectional anonymous questionnaire-based survey was conducted to clarify physicians' attitudes toward continual collaboration with PCTs and to describe the factors that contribute to such attitudes. We surveyed 339 full-time physicians, including interns, employed in a general acute-care hospital in an urban area in Japan; the response rate was 53% ($N = 155$). We assessed the basic characteristics, experience, knowledge, and education of respondents. Multiple logistic regression analysis was used to determine the main factors affecting the physicians' attitudes toward PCTs.

Results: We found that the physicians who were aware of the World Health Organization (WHO) analgesic ladder were 6.7 times ($OR = 6.7$, 95% $CI = 1.98-25.79$) more likely to want to treat and care for their patients in collaboration with the hospital-based PCTs than were those physicians without such awareness.

Conclusion: Basic knowledge of palliative care is important in promoting physicians' positive attitudes toward collaboration with hospital-based PCTs.

Background

Among the more than 1 million Japanese who die from various causes every year, over 320,000 (about 32%) succumb to cancer, which has been the leading cause of death since 1981[1]. The number of cancer deaths has been increasing and is expected to reach about 470,000 in 2020[2]. In the context of the current situation in Japan, urgent action is necessary to provide comprehensive treatment for cancer and appropriate palliative care.

The concept of palliative care in Japan, however, lags far behind that in other industrialized countries. In 1984, our

government adopted strong measures to improve the diagnosis and treatment of cancer, but no plan for palliative care was established. The belated introduction of palliative care by the government has caused numerous misunderstandings about and barriers to palliative care in Japan. For example, a population-based survey found that bereaved families in Japan who lost a family member to cancer believed that "opioids shorten life" (38%) and that "opioids cause addiction" (31%)[3]. In 2005, another survey examined 630 bereaved family members of cancer patients who had used palliative care units (PCUs) in Japan and found that belated referrals to specialized palliative care services were caused by "pessimistic images about palliative care" among family members, such as "it means someone is fated to die" and "it is a final step when there is no other way to cure patients." [4]

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Lack of familiarity with palliative care affects both the general population and physicians. In 2003, a national survey asked 3,147 Japanese physicians, including those working in all the PCUs and those randomly selected from all hospitals and clinics, about the World Health Organization analgesic ladder (WHO Ladder)[5]. One-quarter of physicians responded that they did not know about the ladder, and 43% of physicians responded that they knew or knew quite a lot about the ladder. Currently, Japanese medical specialists undergo no systematic training about the introduction of palliative care. Indeed, only a few physicians have received formal education on palliative care, and most of these were trained abroad or self-educated via academic papers and conferences. It has been reported that more than half of all patients and bereaved families felt that the timing of their referrals to palliative care units was late or too late[6]. In the context of this background, the Japanese Society for Palliative Medicine is preparing for the accreditation of palliative care in the near future. In addition, the Ministry of Health, Labour and Welfare indicated in 2007 that all physicians who treat cancer must become educated in basic palliative care within the next 10 years[7].

Two main types of specialized palliative care services are offered in Japan. One is the palliative care unit (PCU); 178 certified PCUs (3,417 beds) were listed in 2007[8]. Care in a PCU has been covered by the Japanese health insurance system since 1990, and the per-person reimbursement to date has been 37,880 yen (US\$316)/day. The number of certified PCUs is increasing, but many difficulties interfere with establishing PCUs, including a lack of full-time physicians, insufficient nursing staff, and inadequate facilities.

The other type of specialized palliative care service is the hospital-based palliative care team (PCT). PCTs have been developed and evaluated in many Western countries[9-14]. In Japan, a certified PCT must meet certain conditions with respect to the facilities and staff: the hospitals must be accredited by the Japan Council for Quality Health Care, a private sector not-for-profit organization resembling the Joint Commission in the United States, and the team must include a palliative care physician, a psychiatrist, a pharmacist, and a specialized palliative care nurse[15]. Such team services have been offered since 2002, reflecting the WHO announcement that palliative care should be provided early in the course of an illness rather than only at the end of life[16]. The Japanese health insurance system has reimbursed 2,500 yen (US\$21)/day/person to certified PCTs since that time.

Unlike PCUs, PCTs can provide care in acute-care hospitals early in the course of an illness in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy. In 2007, five years

after the WHO modified the definition of palliative care, the Cancer Control Act[17] was enacted in Japan. This act stipulated that palliative care be available early in the course of an illness to improve patients' quality of life (QOL). At about the same time, the government published the Guide for the Improvement of Regional Cancer Centres (*Gan renkei shinryou kyoten byouin nikansuru shishin*)[18] to promote the functioning of regional cancer centres (*Chiiki gan sinnryou renkei kyoten byouin*) in collaborative medical care. According to these guidelines, each of these cancer-specific hospitals must establish a PCT. As a result of the Cancer Control Act and related government promotional efforts, the number of PCTs in Japan has been increasing rapidly.

Although the functioning of PCTs is superior with respect to facilitating collaboration among several specialists and the introduction of palliative care services at early stages, the number of PCTs in Japan remains low due to the aforementioned strict requirements. A survey of all Japanese university hospitals ($N = 123$) conducted in 2005 found that 33% contained uncertified PCTs, and 11% contained certified PCTs[15]. It is regrettable that more than half of the university hospitals in Japan did not offer PCTs even though these institutions are expected to act as pioneers and set the standards for all kinds of hospitals. However, no certified palliative care program is offered by community or certified home-based palliative care specialists in Japan, as it is in Western countries.

In addition, confusion about the role of PCTs also relates to several practical issues. Many Japanese hospitals are adopting a system in which a primary physician adopts total control of the life and care of patients from the beginning of an illness until discharge or death. Japanese physicians are not yet familiar with the methods underpinning continual collaboration with PCTs because this approach originated abroad, and some physicians harbour misconceptions about PCTs (e.g., that these units will not take any responsibility for patients). To our knowledge, few studies have examined the barriers to PCTs and the negative attitudes toward continual collaboration with PCTs among physicians. Therefore, we investigated the factors that determine physicians' attitudes about the role of PCTs. As Dunlop stated, "it should be a very rare exception that the primary team hands over the responsibility for patients" and "PCT members must act as role models rather than take over care;"[19] indeed, the key to palliative care is continual collaboration between physicians and PCTs. In addition, we believe that PCTs should adopt a consultation model to increase palliative care referrals. It is necessary to conduct an empirical study to determine how to promote PCTs from the perspective of the consultation model. Therefore, this study surveyed physicians' attitudes toward collaboration

with PCTs and described the factors relevant to these attitudes.

Methods

This was a cross-sectional anonymous questionnaire-based survey. The initial sample consisted of 339 physicians, including interns, who were employed full-time at a large hospital with 30 medical departments and 925 beds located in a metropolitan area in Japan. The hospital is one of the national centres administrated by the Japanese government and provides general acute care to those in its geographic area. The hospital's department of palliative care includes full-time physicians and has provided PCT services since 2003. We excluded physicians who were not involved in primary care, such as radiologists and pathologists. The department heads distributed the questionnaires to the physicians in their departments. The survey was conducted from 2 February to 9 February 2007.

Study participants

Three hundred and thirty-nine full-time physicians were identified as potential participants but, for reasons unknown, six questionnaires were not delivered. Of the 333 questionnaires sent to the physicians, 175 were returned (response rate: 53%). Of those returned, 18 physicians had not treated any cancer patients within the last year. Because the hospital provided palliative care services primarily to cancer patients (i.e., rather than to patients with other diagnoses), and because most physicians in Japan believe that PCTs are appropriate for the treatment of cancer patients, we excluded these 18 physicians as well as two physicians who did not answer the question about experience with cancer and terminal cancer patients. A total of 155 responses were analyzed (Figure 1).

The study sample included 104 males (67%), 51 females (33%), and the mean age of the sample was 32.0 years (range: 25-65 years). The sample included 38 interns (25%), 47 residents (30%), and 70 supervisory physicians (45%), and the average number of years in practice was 6.0 (range: 1-40). Of the total number of physicians who received questionnaires ($n = 333$), 83 were interns (25%), 111 were residents (33%), and 139 were supervisory physicians (42%); we found no significant differences in these proportions in the final sample (25%, 30%, and 45%, respectively, $p = 0.744$ according to the *chi-square* test). Therefore, the study sample can be considered representative of all physicians in this hospital with respect to their positions.

Main outcome and related factors

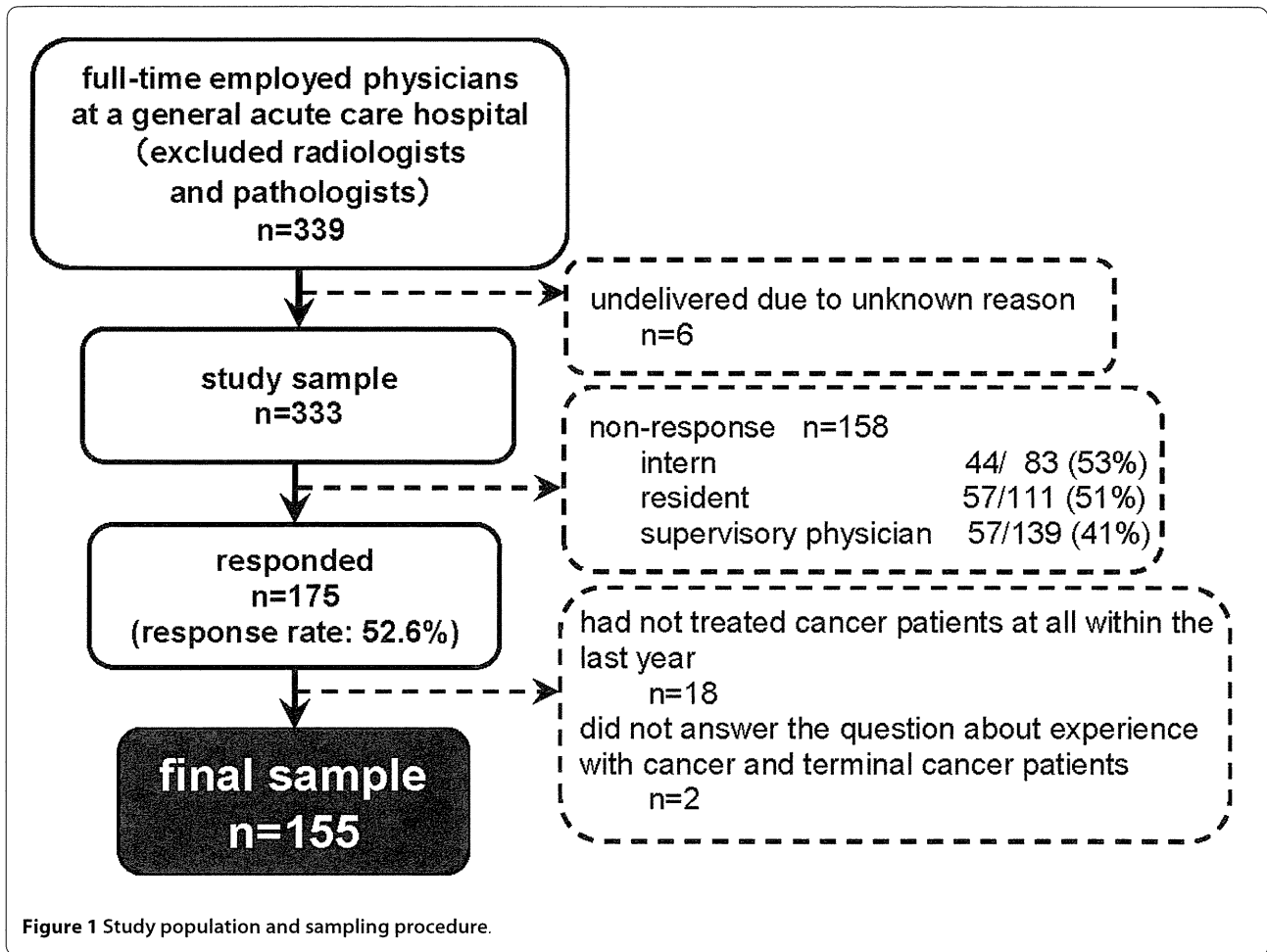
We used the physicians' attitudes toward continual collaboration with the PCTs as the outcome variable, which

was measured by responses to the following items: (1) "I want to treat and care for my patients without collaboration," (2) "I want to treat and care for my patients until the end, but I also want to collaborate with the PCT," (3) "I want to treat and care for my patients until the end, but I want the PCT to be in charge," and (4) "I want to leave the responsibility to palliative care physicians." Item (2) indicates that the PCT is considered to play a supportive role in the treatment team, and (3) indicates that the PCT occupies the main position in the team; both items imply engaging in continual collaboration with the PCT. Item (4) implies a negative attitude toward continual collaboration with the PCT in that it reflects the opinion that only palliative care specialists are able to provide palliative care.

The independent variables included physician characteristics, experience, knowledge, and education. We also collected data on age, sex, position as a physician, duration of experience as a physician, interest in palliative care ("Are you interested in palliative care?"), and concerns about death, which consisted of the summary of the scores on four items from the Death Attitude Inventory ("You often think about what death is," "You often think about your death," "You often think about the death of a person who is close to you," and "You often talk about death with your family and friends") [20]. The last two items were assessed on a scale from 1 to 7 in which 1 corresponded to "never" and 7 corresponded to "always."

We collected data on experiences related to cancer patients and palliative care in terms of requests for PCT consultation ("Yes" or "No"); training in providing medical care at home ("Yes" or "No"); actually providing medical care at home ("Yes" or "No"); and the level of communication with patients and family members about place of care ("You discuss the place of care with the patient/patient's family"), place of death ("You discuss the place of death with the patient/patient's family"), symptoms of dying ("You talk with the patient/patient's family about the symptoms and physical changes that occur during the final stage of death"), and resuscitation ("You talk with the patient/patient's family about do-not-resuscitate (DNR) orders") [21]. The level of communication was assessed on a 7-point scale similar to that used to measure interest in palliative care and concerns about death.

Knowledge and education about the WHO analgesic ladder were also evaluated, as in a previous study [19]. Participants were asked about their knowledge of the WHO analgesic ladder ("Have you ever heard about the WHO analgesic ladder?"), and respondents expressing familiarity with this document were then asked to select all answers that applied regarding where they acquired this knowledge ("Where did you learn about it?") in a closed-ended question ("at medical school, during postgraduate education, at a conference or workshop, from a



paper or technical book, through PCT consultation, or other").

Statistical analyses

We used Fisher's exact test for dichotomous variables for univariate analysis related to outcome. The Wilcoxon rank-sum test was used for continuous variables. The level of significance for differences was set at $p < 0.05$, two-sided.

To determine the factors contributing to physicians' attitudes toward continual collaboration with PCTs, we used multiple logistic regression to estimate the adjusted odds ratios (OR) and 95% confidence intervals (95% CI). We used Spearman's correlation coefficient to exclude the effect of collinearity among the independent variables emerging from univariate analyses as significant in terms of the outcome measure. Several factors obtained after excluding the effect of multicollinearity were initially included in the model, and a stepwise analysis was then performed.

All analyses were performed using SAS software (Windows Version, Release 8.02; SAS Institute, Cary, NC,

USA). The study protocol was reviewed and approved by the institutional review board and ethics committees of the University of Tsukuba.

Results

Continual collaboration with the PCT

In response to the question, "What do you think about collaboration with the PCT?", one participant (0.6%) answered "I want to treat and care for my patients without collaboration" (1), 82 (52.9%) responded "I want to treat and care for my patients until the end, but I also want to collaborate with the PCT" (2), 42 (27.1%) endorsed "I want to treat and care for my patients until the end, but I want the PCT to be in charge" (3), 20 (12.9%) said "I want to leave the responsibility to the PCT" (4), and 10 (6.5%) said that they did not know or did not respond.

We divided the physicians into two groups according to their responses: those expressing positive attitudes toward ongoing collaboration with the PCT [i.e., responses (2) or (3)] and those who wanted to leave responsibility to the PCT [i.e., response (4)]. The basic

Table 1: Basic characteristics of study participants according to attitudes toward continual collaboration with PCTs (median with range, or number with %)

| | | "Continual collaboration" | | |
|---|------------------------------------|---|--|-------------------|
| | | Positive <i>n</i> = 124 ^a | Negative <i>n</i> = 20 ^a | P-value |
| Age (in years) | | 32 (25-65) | 38 (29-62) | 0.01 |
| Sex | male | 80 (65%) | 18 (90%) | 0.04 |
| | female | 44 (36%) | 2 (10%) | |
| Position | intern ^b | 37 (30%) | 0 (0%) | 0.01 ^e |
| | resident ^c | 32 (26%) | 7 (35%) | |
| | supervisory physician ^d | 54 (44%) | 13 (65%) | |
| Physician experience (in years) | | 5 (1--40) | 11 (3--37) | 0.01 |
| Interest in palliative care (scores) ^f | | 6 (1--7) | 4 (2--7) | <0.01 |
| Concerns about death (scores) ^g | | 16 (4--28) | 16 (4--28) | 0.46 |

^a The totals do not match because of missing values.

^b Approximately 1-2 years after receiving their medical licenses.

^c Approximately 3-5 years after receiving their medical licenses.

^d Approximately 6 years or more after receiving their medical licenses.

^e Analysis of interns and residents versus supervisory physicians.

^f Answers ranged from "none" (1 point) to "definite" (7 points) with respect to interest in palliative care.

^g Concerns about death was selected from the Death Attitude Inventory and each item was rated on a scale from "applicable" (1 point) to "inapplicable" (7 points), and scores on concerns about death reflect total points for the four items.

characteristics of the two groups are presented in Table 1, and their backgrounds related to cancer patients and palliative care are summarized in Table 2 in terms of experience, knowledge, and education.

Physician characteristics

The group with positive attitudes toward continual collaboration with PCTs ("positive group," *n* = 124) was younger (*p* = 0.01) and included more females (*p* = 0.04) than did the other group ("negative group," *n* = 20) (Table 1). The positive group included significantly more interns and residents (56%), and the physicians in this group were significantly less experienced (mean of 9.5 and median 5 years) compared with those in the negative group (35%, mean of 14.4 and median 11 years, respectively) (*p* = 0.01). The positive group expressed significantly greater interest in palliative care (mean: 5.7, median: 6) than did the negative group (mean: 4.5, median: 4) (*p* < 0.01), but no significant difference emerged with respect to concerns about death (*p* = 0.46) (Table 1).

Experience, knowledge, and education

Members of the positive group were significantly more likely to have received training in performing medical care at home (44%) than were members of the negative group (20%) (*p* = 0.05), and the positive group communicated well with patients' families about the site of care (*p*

= 0.03), the place of death (*p* = 0.01), and the symptoms of dying (*p* = 0.04) (Table 2). Similar positive levels of communication were observed with respect to place of death (*p* = 0.01) and symptoms of dying (*p* = 0.04). However, the groups did not differ significantly with regard to other experiences, such as requesting PCT consultation and providing medical care at home.

The groups showed significant differences in knowledge about the WHO analgesic ladder; significantly more physicians in the positive group (80%) than in the negative group (39%) were aware of this resource (*p* < 0.01). We found no significant difference between the positive and negative groups in terms of where such knowledge was acquired (Table 2).

Factors contributing to attitudes toward continual collaboration with PCTs

We analyzed 12 variables and present those with significant differences in Tables 1 and 2. Length of experience as a physician was strongly correlated with age and position. For this reason, we included physician experience in the logistic regression analysis as a representative variable related to attitudes toward continual collaboration with PCTs. Similarly, discussion with family members about place of death was chosen to indicate the level of communication with patients and family members. Therefore, six variables (physician sex, experience, interest in pallia-

Table 2: Experience, knowledge, and education of study participants according to attitudes toward continual collaboration with PCTs

| | Continual collaboration | | P-value |
|---|----------------------------------|---------------------------------|---------|
| | Positive n = 124 ^a | Negative n = 20 ^a | |
| Experience: | | | |
| Request PCT consultation | 99 (80%) | 13 (65%) | 0.15 |
| Training in medical care at home | 54 (44%) | 4 (20%) | 0.05 |
| Medical care at home | 49 (40%) | 8 (40%) | 1.00 |
| Communication (mean and median with ranges) ^b : | | | |
| place of care | | | |
| with patients | 5.4, 6 (1--7) | 5.1, 5 (2--7) | 0.37 |
| with family | 6.1, 7 (1--7) | 5.3, 6 (2--7) | 0.03 |
| place of death | | | |
| with patients | 4.4, 4 (1--7) | 3.2, 4 (1--7) | 0.01 |
| with family | 5.7, 6 (1--7) | 4.4, 4 (1--7) | 0.01 |
| symptoms of dying | | | |
| with patients | 4.3, 4 (1--7) | 3.3, 4 (1--7) | 0.04 |
| with family | 5.7, 6 (1--7) | 4.9, 5 (1--7) | 0.04 |
| DNR | | | |
| with patients | 4.3, 4 (1--7) | 4.1, 4 (1--7) | 0.75 |
| with family | 6.4, 6 (1--7) | 6.2, 7 (1--7) | 0.31 |
| Knowledge: | | | |
| About WHO analgesic ladder | 99 (80%) | 6 (39%) | <0.01 |
| Education: (among subjects with knowledge of the WHO analgesic ladder) | | | |
| Where knowledge about WHO analgesic ladder was acquired ^c : | | | |
| medical school | 43 (43%) | 3 (50%) | 0.12 |
| postgraduate education | 34 (34%) | 5 (83%) | 1.00 |
| conference or workshop | 8 (8%) | 1 (17%) | 1.00 |
| paper or technical book | 23 (23%) | 2 (33%) | 0.53 |
| through PCT consultation | 25 (25%) | 2 (23%) | 0.37 |

^a The totals do not match because of missing values.

^b Answers ranged from "inapplicable" (1 point) to "applicable" (7 points).

^c Multiple answers were allowed and each item was analyzed in terms of "yes" vs. "no" responses.

tive care, training in providing medical care at home, discussion about place of death with family members, and knowledge about the WHO analgesic ladder) were initially included in the model. As a result of a stepwise process, four factors were included in the final model: physician sex, experience, knowledge about the WHO analgesic ladder, and interest in palliative care.

We found that physicians who favoured continual collaboration were more likely to be aware of the WHO ladder (OR = 6.75, 95% CI = 1.98-25.79) than were those who did not favour collaboration (Table 3). Similarly, physicians who favoured continual collaboration were more likely to be interested in palliative care (OR = 1.68, 95% CI = 1.15-2.50).

Discussion

This study found that physicians who were aware of the WHO ladder were 6.8 times more likely to want to treat and care for their patients in collaboration with PCTs than were physicians without such awareness even when adjusted for the level of their interest in palliative care and other possible confounding factors, such as physician's sex and length of experience. These results indicate that physicians' positive attitudes toward continual collaboration with PCTs were strongly associated with basic knowledge about palliative care. Few studies have demonstrated a relationship between a preference for continual collaboration with PCTs and factors that significantly contribute to this preference.

The WHO analgesic ladder is just one element in the basic knowledge involved in palliative care, but it includes important ideas that can improve patients' QOL. Di Maio *et al.*[22] conducted a survey of 1,021 patients with advanced non-small-cell lung cancer and found that patients in their sample frequently experienced pain that significantly affected their QOL. A 10-year prospective study conducted by Zech *et al.*[23] found that the WHO ladder remained a consistently effective approach to pain and other clinical symptoms and suggested that the QOL of patients can be improved when their physicians are knowledgeable about basic palliative care. Moreover, Morita *et al.*[6] observed that PCTs were introduced at more appropriate times and evaluated as more useful for symptom control than were PCUs. Therefore, knowledge of the WHO analgesic ladder is indispensable for the provision of adequate palliative care by physicians, and basic knowledge seems to change physicians' attitudes toward continual collaboration with PCTs.

Although this study included only one institution, our results can be generalized to many hospitals and physicians because our subjects were general physicians working in an acute-care hospital. Unlike end-of-life patients in hospice and home care, most cancer patients in acute-care hospitals receive aggressive cancer treatment. The palliative care of patients in a hospice or those receiving home care usually involves physicians continuously collaborating with PCTs. In recent years, despite efforts by physicians to provide early analgesic treatment to patients receiving aggressive cancer treatment, such patients and their families have tended to regard palliative care negatively, and these feelings have resulted in the relatively late introduction of palliative interventions,[3,4] thereby leading to a vicious cycle. The tendency of patients to refuse palliative care is caused by the lack of knowledge about analgesia and the misconception that this approach will result in the deterioration of patients' QOL. Our results suggest the possibility of improving patients' QOL when physicians have appropriate knowledge about palliative care and engage in continual collaboration with the PCT in their acute-care hospital. Such physicians can educate patients and their families about

the importance of palliative care and can use the specialized skills of PCTs to address each patient's symptoms at the appropriate time.

In addition, the number of PCTs in Japan has been increasing rapidly owing to the Cancer Control Act and related government promotional efforts, and as a result, the problems associated with the late introduction of palliative interventions are now better known in acute-care hospitals[4,6]. According to our results, basic knowledge about palliative care is sufficient for developing a positive attitude toward continual collaboration with PCTs, which will facilitate the introduction of analgesic treatment to patients at appropriate times. However, no system for acquiring this basic knowledge during undergraduate or postgraduate education was identified. Thus, we would like to recommend that basic knowledge regarding palliative care should be reviewed with physicians working in acute-care hospitals equipped with PCTs.

Within the context of a medical institution, physicians' attitudes toward PCTs are very important. Even when nurses are interested in clinical palliative care, the attitudes of physicians wield great influence on the therapeutic strategy pursued because decision-making authority for treatment and care belongs to physicians. Thus, if more physicians become knowledgeable about palliative care and come to favour continual collaboration with PCTs, the number of possible therapeutic strategies will increase. As a result, medical staff will be able to provide effective treatment and care for their patients by focusing on the symptoms present at each stage of illness. A wide range of treatment approaches is likely to contribute to the QOL of patients receiving aggressive treatment in acute-care hospitals.

This study has several limitations. First, the nonresponse rates for interns (53%), residents (52%), and supervisory physicians (41%) were relatively high (Figure 1). Although this difference did not reach statistical significance, physicians with less status (interns and residents) had lower response rates. Given that younger physicians work longer hours,[24] it is possible that these low response rates are attributable to lower-status physicians' being too busy with clinical work to answer our question-

Table 3: Multivariate odds ratios (OR) and 95% confidence intervals (CI) for the association between positive attitudes toward continual collaboration with PCTs and independent variables

| Independent variables | OR | (95% CI) |
|---|------|--------------|
| Sex (male) | 2.58 | (0.57--18.6) |
| Physician experience (years) | 0.99 | (0.93--1.06) |
| Knowledge about WHO analgesic ladder (Yes) | 6.75 | (1.98--25.8) |
| Interest in palliative care (scores) ^a | 1.68 | (1.15--2.50) |

^a Answers ranged from "none" (1 point) to "definite" (7 points) with respect to interest in palliative care.

naire. This would suggest that the study sample was biased in favour of less busy physicians. Moreover, participants interested in palliative care and those who were able to collaborate with PCTs on a more continuous basis than were average physicians might have been more willing to answer all the questions. These sampling biases need to be considered when the results of this study are applied in other settings.

Second, this study did not consider differences in departments. Physicians in particular departments, such as those involving gastrointestinal conditions, would be expected to be familiar with the analgesic ladder because they encounter cancer patients more frequently and treat them for longer periods than do physicians in other departments. As a result, they might have more experience with PCTs or be more aware of the importance of continual collaboration with PCTs. Therefore, differences in departments might have acted as a confounding variable.

Conclusions

Despite these limitations, this study offers important benefits because it surveyed general physicians about their attitudes to collaboration with PCTs. The development of leaders in this field is necessary for encouraging physicians to specialize in palliative care and to acquire basic knowledge about this domain, including about the WHO analgesic ladder.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

NT was the chief investigator for the project and provided final approval for the study design of the project. MO conducted the survey, performed data analysis, interpreted the data, and wrote the draft version of this article. MK was involved in the development of the project and revised the article with respect to important intellectual content. MN conceived the study, helped in its implementation, analyzed the focus groups, and contributed to the manuscript. EA made the final decision to develop the project and arranged for the recruitment of participants. All authors read and approved the final manuscript.

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B-234 独居生活者および死後長時間経過事例にみる高齢者孤立死の疫学的考察と山形県・東京都区部の地域差

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Epidemiological Study of “Solitary Deaths” and Regional Differences between Yamagata Prefecture and Tokyo Metropolitan Area

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To clarify the mechanisms responsible for “solitary deaths” among the elderly population and to devise preventive countermeasures, we investigated the causes and backgrounds of deaths among people aged 65 years and older who lived alone, or whose deaths were not discovered for long periods, in Yamagata prefecture and in the Tokyo metropolitan area of Tokyo capital municipal district. The data were obtained from postmortem examination records kept at Yamagata prefectural police headquarters and the Tokyo medical examiner's office. These records showed that the proportion of persons who lived alone or who were left alone for more than three or four days after death was higher in Tokyo than in Yamagata. Natural deaths accounted for the majority, but among persons whose deaths were not discovered for long periods, the proportion of suicides was higher in Yamagata than in Tokyo. In both areas, private residences were the principal places of death. Family or relatives accounted for the highest proportion of persons who discovered the decedents, and this tendency was especially evident in Yamagata. A difference between the sexes was evident in Tokyo. On the basis of these data, plans should be devised to reduce the number of solitary deaths, giving more consideration to regional differences.

Key words: Solitary deaths, postmortem examination, Tokyo metropolitan area, Yamagata prefecture

要 旨

独居老人の死亡（孤独死）事例や地域から孤立した老人の死亡（孤立死）事例は、発見の経緯から死体検案の対象となる場合が多い。また、孤立死の対象は独居生活以外にも、死亡後放置されている事例も含まれると考えられる。今回、2003～2007年の山形県警察および東京都監察医務院の検案データのうち、65歳以上の独居生活者（山形県 696 体；東京都区部 12,368 体）または、死亡後発見まで長時間経過している事例（山形県では死後経過時間 3 日以上事例 286 体；東京都区部では死後経過時間 4 日以上事例 4,342 体）についてその内容と地域差について検討した。両地域で取り扱った 65 歳以上の異状死体のうち、独居生活者の割合は山形県で 14% に対し東京都区部は 36%、死後長時間経過事例の割合では山形県が 6% に対し東京都区部が 14% といずれの割合も東京都区部の方が有意に高かった。死因の種類では病死の割合が最も高かったが、山形県では死後長時間経過例で自殺の割合が東京都区部に比較して有意に高かった。死亡場所では自宅の割合が最も高いが、独居生活者では山形県が、死後長時間経過事例では東京都区部の方が自宅死亡の割合が有意に高かった。そして、死体発見者に関しては、両地域とも家人・親戚の割合が最も高いが、東京都区部の死後長時間経過事例では隣人・住居管理人の割合も高かった。また、東京都区部では家人・親戚に発見される割合には男女差がみられ女性屍の方が有意に高かった。一方、山形県の死後長時間経過例では死後短時間経過例とを比較すると独居生活者の割合が高く、家人・親戚に発見される割合が低かったが、死亡場所については死後経過時間による差はみられなかった。以上より孤立死の実態には地域差のみならず死後発見されるまでの時間による差がみられ、対象者の生活状況や人間関係、そして地域の実情を踏まえた対策が必要であることが示唆された。

はじめに

平成 19 年には 65 歳以上の者がいる世帯のうち、単独世帯が 22.5%、夫婦のみの世帯が 29.8% と両者で過半数を占め、この比率は昭和 55 年に比較して倍増している [1]。この事実に関連して高齢者の「孤立死・孤独死」が社会問題として取りあげられるようになってきた。「孤立死」とは、厚生労働省が制定した言葉で「独居老人などが地域から孤立した状態で亡くなること」である。一方、「孤独死 (Solitary death)」という言葉は 1995 年 1 月 17 日に発生した阪神・淡路大震災で仮設住宅に生活していた独居老人が誰にも看取られず死亡した事例を称してマスメディアが報道した頃から注目されるようになった [2]。しかし、「孤独死」の定義は曖昧で、「独居生活者の死」ととらえられることもあるが、「家族内で孤立した死亡」を含む場合もある。また、孤独死の範疇には「独居生活者」の他に、死亡後死体発見まで「長時間放置されたこと」すなわち「死後経過時間が長い」事例も含まれると思われる。そして、これらの事例では死因や死亡経過が明確でない場合が多く、異状死体として取り扱われる事例が多い。

阪神・淡路大震災の半年後の時点で仮設住宅の住人の 40% は高齢者世帯で、そのうち半数が独居生活者

だった。そして 1 年以内に 83 人が誰にも看取られずに死亡し、多くは高齢者だった。[3] さらに、神戸市内における全検案事例から独居生活者の自宅死亡例を選択し 1998 年から 2002 年まで 5 年毎に年齢や死因等を調べたところ、独居生活者の自宅死亡者数は 2002 年が最も多く、年齢では 60 歳代、推定死後経過時間 8 日以上の例が 18.6% みられている [4]。

阪神・淡路大震災の影響がなかった東日本でも、独居老人の異状死体取り扱い数は多く、東京都区部では平成 19 年全検案数の内 65 歳以上の独居老人の全検案数に対する割合は 23.5% で、全独居生活者検案数に対する割合は 56.3% と年々その割合は上昇傾向にある [5]。

これらの報告では、阪神・淡路大震災など大災害後の影響や、大都市部中心に主に独居生活者の死亡について調査されていた。しかし、地域人口に対する高齢者の割合は都市部より地方の方が高く [6]、地域差の把握も必要であり、さらに「死後長時間放置された高齢者死亡」の実態は明らかになっていない。

本研究では、高齢者の孤独死予防等の対策に寄与するために、孤独死の実態を調査した。今回は山形県の死体検視データで 65 歳以上の高齢者の死後長時間経過事例の実態を把握すると共に、東京都監察医務院の

東京都区部検案データと比較し、孤独死の地域差を中心に検討した。

調査方法

山形県警察本部刑事部捜査第1課が2003～2007年の5年間に扱った交通事故死を除く異状死体取扱数は、7,660体で山形県全死亡者数の約12%に相当する。その内、65歳以上の異状死体4,854体の検案データを、山形県警察本部より提供を受け解析を行った。また、死後長時間放置されている検案事例では、死亡推定日時から発見日時までの経過時間を推定死後経過時間とみなし、推定死後経過時間3日以上を検案事例を「死後長時間例」として、同事例から「死因の種類」「死亡場所」「死体発見者」「自宅死亡者の死亡発見場所」について男女別の人数を集計した。また、同様の項目について推定死後経過時間3日未満の検案事例を「死後短時間例」として集計した。

また、東京都区部については東京都監察医務院で2003～2007年の5年間に扱った交通事故死を含む異状死体取扱数は59,113体で、東京都区部の全死亡者数の約18%に相当する。この内、65歳以上の異状死体33,941体の検案データは「東京都監察医務院事業概要平成15～19年版」および東京都監察医務院の検案データベースを利用した。独居生活者については山形県と同様に集計したが、同データベースには「死体発見日時」の項目がないため、推定死亡日時から検案日時までの経過時間を推定死後経過時間とみなした。さらに東京都監察医務院の検案システム上、死体発見から検案まで1日前後経過する事例が多いことから「推定死後経過4日以上」の検案事例を「死後長時間例」、4日

未満の検案事例を「死後短時間例」と2群にわけて、山形県と同様の項目について集計し、集計結果を山形県と東京都区部の2地域で比較を試みた。

両群の比較はカイ二乗検定により、統計学的有意差の有無も検討した。

結果

1. 山形県と東京都区部における65歳以上独居生活者の異状死体の実態

山形県内の65歳以上の異状死体取扱数の内独居生活者は696体で65歳以上の異状死体数の14%であった。一方、東京都区部では6,796体で65歳以上の異状死体数の36%と山形県に比較して有意に割合が高かった(図1)。

死因の種類では、山形県では病死が598体で独居生活者検案数の86%、次いで自殺が47体で独居生活者検案数の7%であった。一方、東京都区部では病死が10,043体で独居生活者検案数の81%で、自殺は649体で独居生活者検案数の7%と山形県と同様の傾向であったが、死因の種類が不慮の外因死や不詳の事例の割合が山形県に比較して有意に高かった(表1)。

死亡場所では両地域とも自宅死亡が最も多いが、山形県内は自宅が605体で独居生活者検案数の87%と、東京都区部の75%(9,233体)に比較すると割合が高かった(表2)。

死体発見者についてみると、両地域とも家人・親戚に発見される例が最も多いが、山形県では家人または親類が362体(男174体;女188体)で独居生活者検案数の約半数の52%(男48%;女57%)を占めているのに対して、東京都区部では家人親戚は4,073体(男

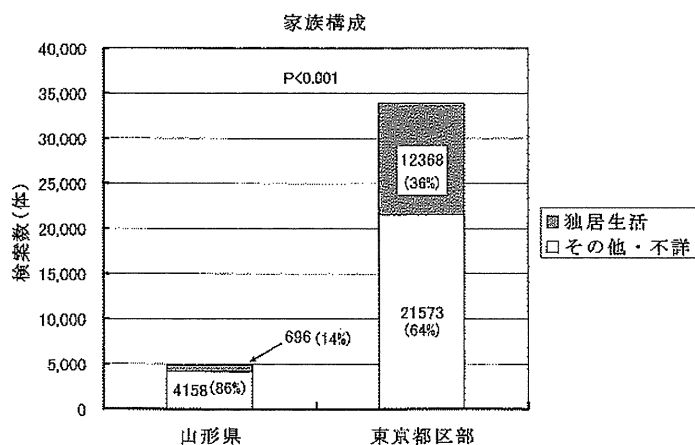


図1. 山形県と東京都区部における65歳以上の検案事例の家族構成。2003年～2007年 ()内は地域別65歳以上全検案数に対する割合。

1,695 体；女 2,378 体) で独居生活者検案数の約 3 分の 1 の 33% (男 25%；女 43%) で、隣人・賃貸住宅の管理人も 2,670 体 (男 1,814 体；女 856 体) と独居高齢者全検案数の 22% (男 27%；女 15%) 高率であった。また、東京都区部では死体発見者に男女差があり男性では隣人・管理人に発見される割合が有意に高かった (表 3, 4)。

表 1. 山形県と東京都区部における独居生活者検案事例の死因の種類。2003 年～2007 年

| | 病死 | 自殺 | その他・不詳 | |
|-------|-----------------|-------------|----------------|-------------|
| 山形県 | 598 (86%) | 47 (7%) | 51 (7%) | $p < 0.001$ |
| 東京都区部 | 10,043 (81%) | 649 (5%) | 1,676 (14%) | |

()内は地域別 65 歳以上独居生活者全検案数に対する割合。

表 2. 山形県と東京都区部における独居生活者検案事例の死亡場所。2003 年～2007 年

| | 自宅 | その他 | |
|-------|----------------|----------------|-------------|
| 山形県 | 605 (87%) | 91 (13%) | $p < 0.001$ |
| 東京都区部 | 9,233 (75%) | 3,135 (25%) | |

()内は地域別 65 歳以上独居生活者全検案数に対する割合。

2. 山形県と東京都区部における 65 歳以上の、死後長時間経過異状死体の実態

山形県内の 65 歳以上の検案数の内、死後長時間例 (推定死後経過時間 3 日以上) の検案数は 286 体で 65

表 3. 山形県と東京都区部における独居生活者検案事例の死体発見者。男性屍と女性屍とを分けて記載 2003 年～2007 年

| | | 家人・親戚 | 隣人・管理人 | その他 | |
|-------|---|----------------|----------------|----------------|-------------|
| 山形県 | 男 | 174 (48%) | 47 (13%) | 143 (39%) | $p < 0.05$ |
| | 女 | 188 (57%) | 59 (18%) | 85 (26%) | |
| 東京都区部 | 男 | 1,695 (25%) | 1,814 (27%) | 3,287 (48%) | $p < 0.001$ |
| | 女 | 2,378 (43%) | 856 (15%) | 2,338 (42%) | |

()内は地域別 65 歳以上独居生活者男女別全検案数に対する割合。

表 4. 山形県と東京都区部における独居生活者検案事例の死体発見者。2003 年～2007 年

| | 家人・親戚 | 隣人・管理人 | その他 | |
|-------|----------------|----------------|----------------|-------------|
| 山形県 | 362 (52%) | 106 (15%) | 228 (33%) | $p < 0.001$ |
| 東京都区部 | 4,073 (33%) | 2,670 (22%) | 5,625 (45%) | |

()内は地域別 65 歳以上独居生活者全検案数に対する割合。

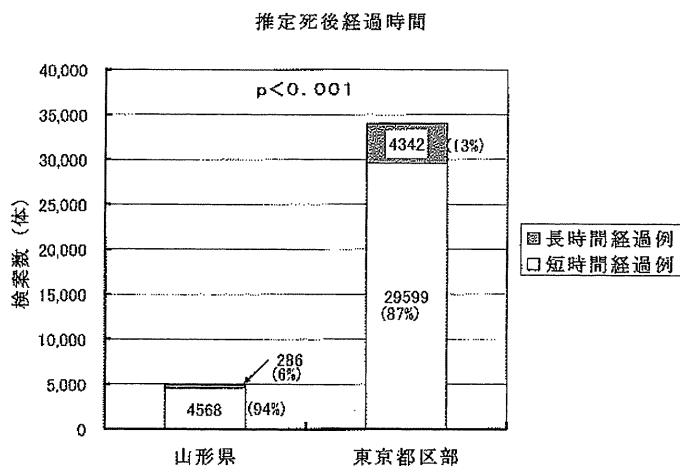


図 2. 山形県と東京都区部における 65 歳以上の推定死後経過時間別検案数。2003 年～2007 年
長時間経過例とは山形県では推定死後経過時間 3 日以上、東京都区部では 4 日以上の事例を、短時間経過例とは山形県では推定死後経過時間 3 日未満、東京都区部では 4 日未満の事例を各々示す
()内は地域別 65 歳以上全検案数に対する割合。

歳以上全検案数に対する割合は6%あったが、東京都区部では死後長時間例(推定死後経過時間4日以上)の検案数は4,342体で割合は13%と、山形県に比較して有意に割合が高かった(図2)。

家族構成に関してみると、山形県では独居生活者の死後長時間検案数が190体で死後長時間経過した検案数の66%を占めた。同様の傾向は東京都区部の独居生活者の死後長時間検案数が3,786体で、死後長時間検案数の87%を占め、山形県に比較してその割合は有意に高かった(表5)。

死因の種類では、いずれも病死が最も多く山形県では211体(65歳以上の死後長時間経過例全検案数の74%)、東京都区部では病死3,358体(検案割合77%)

表5. 山形県と東京都区部における65歳以上の死後長時間経過検案事例の家族構成。2003年～2007年

| | 独居生活 | その他 | $p < 0.001$ |
|-------|----------------|--------------|-------------|
| 山形県 | 190 (66%) | 96 (34%) | |
| 東京都区部 | 3,786 (87%) | 556 (13%) | |

()内は地域別65歳以上の死後長時間経過した全検案数に対する割合。

表6. 山形県と東京都区部における65歳以上の死後長時間経過検案事例の死因の種類。2003年～2007年

| | 病死 | 自殺 | その他・不詳 | $p < 0.001$ |
|-------|----------------|-------------|--------------|-------------|
| 山形県 | 211 (74%) | 27 (9%) | 48 (17%) | |
| 東京都区部 | 3,358 (77%) | 147 (3%) | 837 (19%) | |

()内は地域別65歳以上の死後長時間経過した全検案数に対する割合。

表7. 山形県と東京都区部における65歳以上の死後長時間経過検案事例の死亡場所。2003年～2007年

| | 自宅 | その他 | $p < 0.001$ |
|-------|----------------|-------------|-------------|
| 山形県 | 223 (78%) | 63 (22%) | |
| 東京都区部 | 4,027 (93%) | 314 (7%) | |

()内は地域別65歳以上の死後長時間経過した全検案数に対する割合。

となっているが、自殺の検案事例は山形県27体(9%)、東京都区部147体(3%)と山形県の割合の方が有意に高かった(表6)。

死亡場所では両地域とも自宅が最も多いが、山形県内では223体で死後長時間検案数の78%を占めるのに対し、東京都区部では4,073体(93%)と東京都区部の方が自宅の割合が有意に高かった(表7)。

そして、死後長時間検案事例の死体発見者についてみると、東京都区部では男女差がみられ、男性では家人・親戚(758体; 27%)よりも隣人・住居管理人(1,011体; 37%)に発見される事例の方が多かった。山形県では死体発見者に男女差はみられなかった(表8)。一方、男女をあわせた65歳以上の死後長時間経過例検案総数についてみても、東京都区部は隣人・住居管理人が1,371体(32%)で家人・親戚1,463体(34%)とほぼ同数であった(表9)。

3. 死体発見までの経過時間の長短別にみた、山形県の65歳以上異状死体の実態

山形県の65歳以上全検案数4,854体を死後経過時

表8. 山形県と東京都区部における65歳以上の死後長時間経過検案事例の死体発見者。男性屍と女性屍を分けて記載。2003年～2007年

| | | 家人・親戚 | 隣人・住居管理人 | その他 | NS |
|-------|---|--------------|----------------|--------------|-------------|
| 山形県 | 男 | 95 (55%) | 24 (14%) | 53 (31%) | |
| | 女 | 68 (60%) | 15 (13%) | 31 (27%) | |
| 東京都区部 | 男 | 758 (27%) | 1,011 (37%) | 995 (36%) | $p < 0.001$ |
| | 女 | 705 (45%) | 360 (23%) | 513 (33%) | |

()内は地域別65歳以上の死後長時間経過した全検案数に対する割合。

表9. 山形県と東京都区部における65歳以上の死後長時間経過検案事例の死体発見者。2003年～2007年

| | 家人・親戚 | 隣人・住居管理人 | その他 | $p < 0.001$ |
|-------|----------------|----------------|----------------|-------------|
| 山形県 | 163 (57%) | 39 (14%) | 84 (29%) | |
| 東京都区部 | 1,463 (34%) | 1,371 (32%) | 1,508 (35%) | |

()内は地域別65歳以上の死後長時間経過した全検案数に対する割合。

表 10. 山形県における 65 歳以上の検案事例の推定死後経過時間別家族構成. 2003 年～2007 年

| | 独居生活 | その他 | $p < 0.001$ |
|----------|--------------|----------------|-------------|
| 死後 3 日以上 | 190 (66%) | 96 (34%) | |
| 死後 3 日未満 | 506 (11%) | 4,062 (89%) | |

()内は山形県内 65 歳以上の死後経過時間別全検案数に対する割合。

表 11. 山形県における 65 歳以上の検案事例の推定死後経過時間別死因の種類. 2003 年～2007 年

| | 病死 | 自殺 | その他・不詳 | $p < 0.05$ |
|----------|----------------|--------------|--------------|------------|
| 死後 3 日以上 | 211 (74%) | 27 (9%) | 48 (17%) | |
| 死後 3 日未満 | 3,504 (77%) | 558 (12%) | 506 (11%) | |

()内は山形県内 65 歳以上の死後経過時間別全検案数に対する割合。

表 12. 山形県における 65 歳以上の検案事例の推定死後経過時間別死亡場所. 2003 年～2007 年

| | 自宅 | その他 | NS |
|----------|----------------|----------------|----|
| 死後 3 日以上 | 223 (78%) | 63 (22%) | |
| 死後 3 日未満 | 3,414 (75%) | 1,154 (25%) | |

()内は山形県内 65 歳以上の死後経過時間別全検案数に対する割合。

表 13. 山形県における 65 歳以上の検案事例の推定死後経過時間別死体発見者. 2003 年～2007 年

| | 家人・親戚 | 隣人・管理人 | その他 | $p < 0.001$ |
|----------|----------------|-------------|----------------|-------------|
| 死後 3 日以上 | 163 (57%) | 39 (14%) | 84 (29%) | |
| 死後 3 日未満 | 3,267 (72%) | 177 (4%) | 1,124 (25%) | |

()内は山形県内 65 歳以上の死後経過時間別全検案数に対する割合。

間長時間例（推定死後経過時間 3 日以上）と短時間例（推定死後経過時間 3 日未満）の 2 群にわけて比較を試みた。

家族構成では独居生活者が長時間例 190 体で長時間経過例全体の 66% を占めるのに対し、短時間例では 506 体 (11%) と長時間例で有意に割合が高かった (表 10)。

死因の種類に関しては、長時間例で病死 (211 体; 74%)・自殺 (27 体; 9%) の割合が短時間例 (病死 3,504 体 (77%); 自殺 558 体 (12%)) に比較して低かったが、有意差は 5% に留まった (表 11)。

また死亡場所についても自宅死亡の割合が長時間例 223 体 (78%), 短時間例 3,414 体 (75%) と有意な差は示さなかった (表 12)。

死体発見者についてみると家人・親戚に発見される事例が長時間例では 163 体 (57%) に対して短時間例では 3,267 体 (72%) と長時間例の割合の方が低く、逆に隣人・住居管理人に発見される割合は長時間例 39 体 (14%) に対し短時間例 177 体 (4%) と長時間例の方が割合が高かった (表 13)。

考 察

1. データの内容

山形県と東京都区部では人口、家族構成や年齢構成、さらに地域のコミュニティ(いわゆる近所づきあい)などの構成が異なる。また、今回利用したデータの全検案数の地域差は、異状死体の通報率の地域差も影響していることが考えられる。しかし両地域とも死亡者 10 人に 1 人以上の死体が検視の対象になっており、特に死後放置期間が長い事例に関しては死亡状況が不明な場合が多く、ほとんどの事例が検視・検案の対象になっていると思われる。

従って、本研究に利用した検案データは「孤独死」「孤立死」全ての事例を含んでいるとは言えないが、実態把握には十分なデータであると思われる。

2. 独居生活者の高齢者検案事例からみた山形県と東京都区部の地域差

山形県は比較的小規模の都市と農業地帯から構成されているが、東京都区部は人口も多く、かつ行政や産業の中核部でもあることから、規模のみならず生活環境にも相違がみられる。両地域の独居生活者の検案事例の内容にもこれらの相違が反映されると推察される。

本研究で判明した山形県と東京都区部の相違では、65 歳以上の検案事例のなかで、独居生活者の比率は東

京都区部の方が高いが、自宅死亡や家人・親戚に発見される割合は山形県の方が高く、東京都区部では隣人・住居管理人に発見される割合が高い。また、死因の種類では病死が多い点は両者共通しているが、事故・その他不詳の割合は東京都区部の方が多く、また東京都区部では家人・親戚により死体発見される割合に男性屍と女性屍の差が大きい。

阪神、淡路大震災に関連した神戸市の調査以外でも独居生活者の検案事例を扱った報告はある。東京都区部では東京都監察医務院症例データベースより高齢者のみならず中年男性でも高率にみられることなどから、高齢者のみならず中年年齢者の対策の必要性も指摘している [7]。また山形県でも大澤らにより独居生活者の自宅死亡検案例に関する 2000 年から 2004 年までの 5 年間の調査報告 [8] があり孤独死事例が増加しつつあること、65 歳以上が対象事例全体の 55.8% にのぼること、推定死後経過時間 4 日以上の事例が約 2 割、死因の種類では病死が 79.1%、自殺が 15.8% で、死体発見者は親族が 50.1% であったと述べている。これらの調査内容を本研究の調査データと比較すると、65 歳以上の検案者は全検案数 7,660 体に対して 4,854 体で割合は 63.3% と 2000~2004 年当時よりも増加している。また調査対象が本研究では高齢者に限定してはいるが、病死が多いこと、家人・親戚に発見される事例が多い点では共通している。

また、山形県で 2002 年~2007 年に検視対象となった 65 歳以上の検案事例 5,675 体について、伊藤らは独居生活者の割合などで同様の報告をしている。また認知症の既往歴がある事例が高い点なども指摘している [9]。さらに岡山県における法医解剖例では死因に焼死が多いこと、近隣の住人により発見される事例が多いことなどが報告 [10] されているが、地域差の他にも剖検例と検案例では孤独死の実態に差が生じることが考えられる。

山形県は高齢者人口の割合が高い [6] が、核家族化は東京都区部に比較して少なく、従って独居生活者の割合も少ないと考えられる。従って山形県では高齢者に家人の目が届き易いため、東京都区部に比較して事故などの外因死が少ないことが考えられる。

一方、山形県では人口密集地域が少なく、近隣の住居との距離も遠いと考えられ、独居生活者で周囲と交流が少ないと家人や親戚に発見されるまで目立たず放置される状態が予想される。また、東京都区部では死体発見者の割合に男女差が有意にみられることは、高齢者人口の割合の男女差の他に、東京都区部における高齢者の行動パターンや親族との交流の程度に男女差

が大きいことが考えられる。

3. 死後経過時間からみた高齢者死体検案の地域差

孤独死を考える上で、死後長時間放置されることも有用な指標と考えられ、本研究では死後経過時間の長短も考慮にいった。一方、死後経過時間の推定は法医診断の内でも最も難解な事項である。しかも死後何日経過していれば「放置されていた」と言えるのか基準はない。また検案システム上、死体発見後検案まで長時間要する場合があり東京都監察医務院の検案では 1 日かかる事例もある。しかし、死後 3 日（東京都区部では 4 日）以上経過して発見されたとすれば、死後変化も目立つ様になり、家人や近隣住人との交流が少ないとみても、多くの場合誤りはないもの推察される。

これまでの報告でも独居生活者のなかで死後経過時間が長い事例の割合は報告されているが、独居生活者でない死後長時間経過事例も存在する。例えば家族内で生活パターンがあわず普段ほとんど顔をあわすことのない家族事例、また死亡者の配偶者などの家族が認知症などで本人が死亡していることに気付かなかつたり、気付いていても処置に困り放置されていた例等である。これらの例では同居者がいても、交流が乏しいと考えられ“孤独”のうちに看取られず一人で死亡していく実態と類似している。ただし、内には認知症などが基礎疾患にあるために、徘徊などで行方不明になり発見までに長時間を要した例なども含まれるため、孤独死とすべきか判断に迷う事例も存在する。

死後長時間経過例（山形県では推定死後 3 日以上、東京都区部では 4 日以上）の検案数は山形県 286 体、東京都区部 4,342 体で、65 歳以上の全検案数に対する割合は山形県 6%、東京都区部で 13% と有意に東京都区部の方が高かった。これは家族構成の差が大きいと考えられる。次に死後長時間経過例内での独居生活者の割合も東京都区部が有意に高く、同居人の有無がやはり死後放置時間に影響を及ぼすことになると思われた。

死因の種類では病死の割合が高いことは両地域共通しているが、自殺の割合が山形県で高いことは注目すべき事である。山形県など東北地方の自殺死亡率が高いことは知られているが、高齢者になると精神的に孤立してくる傾向は東京都区部よりも強いことが推察される。

死後長時間経過例の死亡場所では、山形県は東京都区部に比較して自宅死亡の割合が少ない。これは認知症などの病歴を持つ場合徘徊し住民の目が届かない用水路や山林で死亡する事例が多いものと推定される。また、東京都区部では死後長時間経過例の割合が有意

に高く、これらが自宅死亡者の割合を高めている要因とも考えられる。

独居生活者の場合と同様に東京都区部では死体発見者に関して男性屍と女性屍との間に有意に差がみられるが、これも独居生活者の場合と同じく、平均寿命、行動パターン、近隣住民や家族との交流の程度に男女差が大きいことが予測される。

男女合わせた検案例をみても死体発見者は山形県では家人・親戚の割合が高く、東京都区部では家人・親戚と隣人・住居管理人がほぼ同じ割合だった。死後経過時間が長くなると新聞や郵便物が郵便箱に溜まり、死後変化により異臭やウジ等の発生が顕著となり近隣住民に気づかれる事例が多くなるとも考えられる。

4. 山形県における、死後経過時間の長短による検案例の差

山形県の高齢者検案例で死後長時間例（推定死後経過時間3日以上）と短時間例（3日未満）の2群で比較した。独居生活者に死後長時間例が多いのはやはり同居人の有無が死後発見時間までの時間が短いことによるものと思われる。死因の種類や死亡場所では死後経過時間による差は少なかったが、これも同居人の有無や発見状況による差は存在すると考えられる。死後長時間例では短時間例に比較して家人・親戚による発見事例の割合が少ない。これは東京都区部と同じく親族や近隣住民との関係の他に郵便物等の放置や異臭などの異状により認知される事例が多くなるためと思われる。これらの結果は伊藤らによる推定死後経過時間1日以上と1日未満で2群にわけた調査報告[9]と共通している。

5. データ内容からみた孤独死の地域特性と対策

本調査では家族構成、死後長時間経過例、死体発見者いずれにおいても地域差がみられた。本研究で有意にみられた地域差は、親族や近隣住民の人間関係の他にも、住居の密度や周囲の自然環境とも関連していることが示唆された。そして孤独死の抑制には地域の実情に密着した対策が必要であると思われる。孤独死のみならず自殺や虐待等の予防策を講ずるには、死因や事件性の有無のみならず、発生した事例の背景をより環境・衛生行政的見地から検証する必要があると考えられ、そのためには死体検案や行政解剖の制度を効果的に活用した基礎資料作成が重要であると思われる。

結 論

山形県と東京都区部における高齢者死体検案データより、独居生活者と死後経過時間を指標にして、孤独

死の事態を検討した。

独居生活者検案例の割合は山形県よりも東京都区部の方が高かった。独居生活者の場合、自宅死亡事例や親族・家人による死体発見事例の割合は山形県の方が高かった。

死後長時間経過例の割合は東京都区部の方が高かった。死後長時間例のうち自殺死亡事例の割合、家人・親戚による死体発見の割合は山形県の方が高かった。

また山形県では死後長時間例の方が短時間例に比較して、隣人・住居管理人による死体発見事例の割合が高かった。

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