Introduction

Since Japan has an aging population, drastic changes to the robust styles of current medical service systems are being urged. Medical care and treatment should be arranged to be more flexible in accordance with the needs of each patient, and the various requirements of patients in critical condition, especially those in living wills, should be given attention and respected in preparation of their treatment plans. In such patient-oriented medicine, a living will, a type of written advanced directive, has turned out to be a useful reference in care and treatment reflecting patients’ needs in the U.S.A. and in other western countries.

In Japan, 69.7% of the public agreed with the concepts of advance directives, according to a national survey conducted in March 2013, but the recognition rate of living wills was not studied, and only 3.2% of the general population had already prepared documents like living wills.

JA Toride Medical Center, with 414 beds for admitted patients, is located in the southern area of Ibaraki Prefecture, a suburban area of Tokyo, and acts as the main regional hospital for a half million people living in northwestern Chiba Prefecture and southern Ibaraki Prefecture. Hence, the responses obtained through a questionnaire may reflect the common perspectives concerning living wills of medical staff, working in the forefront of regional medical service in Japan.

Methods

To understand the present recognition of medical staff concerning living wills, a questionnaire, the contents of which are summarized in Table 1, was distributed to all the staff working at JA Toride Medical Center in September 2013. No preceding guidance or explanation regarding living wills was provided to the staff in the hospital. The total number of staff was 843, comprising physicians, nurses, pharmacists, rehabilitation staff, medical engineers, clerks,
dietitian, and so on, as shown in Table 2. The responses were collected within one month after distribution, and the data were analyzed with a data sheet in MS Excel 2007 (Microsoft, Redmond, WA, U.S.A.). Utilization of the obtained responses for analysis to develop an original living will was approved by the ethics committee of JA Toride Medical Center in October 2013 (No. 181).

Results

Of the 843 questionnaires distributed, 674 responses (80.0% of total distributed) were obtained. The precise response rate in each job category could not be identified, because some respondents did not specify their jobs, as shown in Figure 1 and Table 3. The term of living will was known by 304 (45.1%) of the respondents, but introduction of living wills to patients was accepted by 373 (55.3%) of respondents, although 286 (42.4%) respondents indicated that they had not determined their attitude toward living wills.

Regarding styles of document form, 332 respondents (49.3%) preferred patients to mark wanted or unwanted medical treatments and care on a checklist, and 102 respondents (15.1%) preferred description of living wills in free form (Figure 2). Although almost a half of the respondents supported patients marking options listed in a document form, one respondent expressed fear and hesitation that a patient’s terminal state would be determined only by the options marked on a preset sheet.

As preferred treatment options provided on a checklist, cardiac massage (chest compression) and ventilator were selected by more than half of the respondents (Figure 3). Moreover, some respondents claimed that relief from pain and suffering should be the first and major priority above other items, as accepted in the U.S.A.1).

Based on the obtained results, we developed a document form of living will that enables patients to express their advance directives by free description or by selecting wanted and/or unwanted medical treatments (Table 4).

Discussion

Before the national survey in 20132), a population-based survey conducted early in 21st century in Japan revealed that 156 (36.7%) of 425 respondents from the general population in a district of Tokyo claimed to be aware of living wills3). Although this study was conducted 11 years ago, and the proportion of medical staff in the respondents was not identified, the recognition rate of living wills was lower than that in this study. However, the recognition rate of living wills in the staff, excluding physicians, nurses, midwives,
Recognition and acceptance of living wills.

A positive response to question 1 (Table 1) was counted as recognition of living wills, and a positive response to question 2 (Table 1) was counted as acceptance of living wills. Four (0.6%) and five (0.7%) respondents did not answer questions 1 and 2, respectively.

Figure 2 Preferred description styles for living wills. Others (one respondent) proposed a combined form of a check list and free description.

Acceptance of living wills

Figure 3 Medical treatments or care that should be provided in a checklist for living wills. A: Cardiac massage (Chest compression), B: ventilator, C: relief from pain and suffering, D: manual artificial respiration, E: gastrostomic tubular feeding, F: vasopressor administration, G: nasogastric tubular feeding, H: intravenous hyperalimentation (IVH) or total parenteral nutrition (TPN), I: dialysis, J: intravenous hydration through peripheral veins.

Table 3 Working positions of the respondents

| Working position               | Number of respondents | Percentage of total respondents | No. of respondent recognizing living wills | No. of respondents accepting living wills |
|-------------------------------|-----------------------|---------------------------------|--------------------------------------------|-----------------------------------------|
| Physician                     | 35                    | 5.2                             | 33 (94.3)                                  | 30 (85.7)                               |
| Nurse and midwife             | 290                   | 43.0                            | 154 (53.1)                                 | 171 (59.0)                              |
| Pharmacy staff                | 22                    | 3.3                             | 14 (63.6)                                  | 13 (59.1)                               |
| Rehabilitation staff          | 33                    | 4.9                             | 10 (30.3)                                  | 22 (66.7)                               |
| Medical engineer              | 15                    | 2.2                             | 5 (33.3)                                   | 10 (66.6)                               |
| Dietitian and cooking staff   | 29                    | 4.3                             | 8 (27.6)                                   | 6 (20.7)                                |
| Others                        | 185                   | 27.4                            | 57 (30.8)                                  | 87 (47.0)                               |
| Unknown                       | 65                    | 9.6                             | 23 (35.4)                                  | 34 (52.3)                               |
| Total                         | 674                   | 100.0                           | 304 (45.1)                                 | 373 (55.3)                              |

The respondents who did not specify their job category were categorized as unknown. Percentages are shown in parentheses.
and pharmacy staff, was 31.5% (103/327) in this study, and comparable with that of the general population\(^3\), which may suggest the concept of living wills has not spread in the last decade. The acceptance rate in this survey was less than that of the general population\(^2\), and this study showed that almost a half (42.4%) of the respondents could not make a decision concerning introduction of living wills. Because this survey was conducted without providing a detailed explanation of living wills to the staff, insufficient or lack of knowledge about living wills, along with the seriousness of its contents, may have caused an increase in the number of respondents who could not make a decision. On the other hand, living wills might have also been accepted based on insufficient knowledge of the concept of living wills.

As described above, the concept of living wills is tolerated by two thirds of the Japanese public\(^5\). However, such document forms of advance directives have never been popular in the routine clinical settings of medical facilities. Based on the cultural differences between Japan and other countries, Kimura proposed a “family unit advance directive” that is shared decision making by a family, not by a patient alone, which might be an alternative to an individual’s living will\(^6\).

There is little evidence concerning facilitation of patient-centered medicine in clinical decision-making with living wills, especially as alternatives to predetermined lasting power of attorneys\(^5\). In fact, it was reported that only

**Table 4** Final form of living will

| Table 4 Final form of living will |
|----------------------------------|
| **Living will**                  |
| To the director of JA Toride Medical Center |
| I want to have medical care and treatment as described below, when I will be in a terminal illness. |
| I want to have medical care or treatment based on the principle ___, as described below. |
| I. I want to live as long as possible. |
| II. I want to avoid pain and suffering, even if this means that I may not live as long. |
| In the medical care and treatments listed below, I want to have ______________________, and I do not want to have ______________________, when I will be in a terminal illness. |
| A. cardiac massage, B. manual artificial respiration, C. respiratory support by a ventilator, |
| D. vasopressor administraton, E. intravenous hydration through peripheral veins, |
| F. intravenous hyperalimentation, G. nasogastric tubular feeding, |
| H. gastrostomy tubular feeding, I. dialysis, J. blood transfusion, K. inhalation of oxygen, |
| L. tracheostomy, M. electrical defibrillation |

The original version is written in Japanese, and can be downloaded from the homepage of JA Toride Medical Center (http://www.toride-medical.or.jp/).
25% of physicians were aware that a patient had an advance directives even in the U.S.A., where advance directives have been legally supported. However, from the point of view of bioethics, health-related quality of life (HRQOL), rather than effectiveness of treatment, is politically proposed to be an ultimate goal of medicine by one of major American medical societies, and there are many reports that applied QOL, neither survival nor treatment effect, to evaluation of end of life care, such as a recent analysis of patients with cancer. Living wills might be a good reference providing medical staff with the opportunity to reconsider the final purpose of medicine, and should be an essential medical service provided by each hospital, because each patient must have individual wills in their terminal stage, which should not be fulfilled only by the medical term of “do not attempt to resuscitate (DNAR)” that contains various meanings for patients, their families and medical staff.

This study has a few limitations. As described in the results, some respondents did not describe their job category in the returned questionnaire. Although the interest of the respondents with respect to living wills is expected to be related to their jobs, an accurate response rate and differences by job category could not be determined. Another limitation was a lower response rate in physicians, who are anticipated to have a decisive role in significance of living wills. The application of living wills in routine medical practice is still a delicate issue. Therefore, no description of job category or response to the questionnaire may reflect a certain attitude toward this issue, and should be respected, although some individuals could not be included in some analyses.

In conclusion, introduction of living wills to patients was accepted by most medical staff, although the concept of a living will is not widely known even in medical staff. Meanwhile, some patients with terminal illnesses are eager to decide medical care and treatments by themselves, which should not be neglected by medical staff, and should not be resolved only by a “DNAR” order. Through activities to spread the concept of living wills to the general population including medical staff, the authors hope to establish patient-oriented medicine not only in their hospital but also in other medical facilities in Japan.

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