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Respiratory dysrhythmia in dementia with Lewy bodies: a cross-sectional study

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ABSTRACT

Objectives: Dementia with Lewy bodies (DLB) is the second most common form of neurodegenerative dementia after Alzheimer's disease (AD). DLB is characterised by intracytoplasmic inclusions called Lewy bodies that are often seen in the brainstem. Because modulation of the respiratory rhythm is one of the most important functions of the brainstem, patients with DLB may exhibit dysrhythmic breathing. This hypothesis has not yet been systematically studied. Therefore, we evaluated the association between DLB and dysrhythmic breathing.

Design: In this cross-sectional study consecutive inpatients who were admitted for the evaluation of progressive cognitive impairment were enrolled. We assessed breathing irregularity using polysomnographic recordings on bed rest with closed eyes, without reference to the clinical differentiation among DLB, AD and having no dementia.

Setting: Single centre in Japan.

Participants: 14 patients with DLB, 21 with AD and 12 without dementia were enrolled in this study.

Primary outcome measures: The coefficient of variation (CV) of the breath-to-breath time was calculated. We also examined the amplitude spectrum $A(f)$ obtained using the fast Fourier transform and Shannon entropy S of $A(f)$ in patients with DLB compared with patients with AD and patients without dementia.

Results: The values of CV and entropy S were significantly higher in patients with DLB than in patients with AD and patients without dementia. No significant differences were observed between patients with AD and patients without dementia.

Conclusions: Patients with DLB exhibit dysrhythmic breathing compared with patients with AD and patients without dementia. Dysrhythmic breathing is a new clinical feature of DLB and the spectral analysis of breathing patterns can be clinically useful for the diagnostic differentiation of DLB from AD.

INTRODUCTION

Dementia with Lewy bodies (DLB) is a neurodegenerative disease characterised by parkinsonism, visual hallucinations and cognitive

ARTICLE SUMMARY**Strengths and limitations of this study**

- Dysrhythmic breathing is a completely novel topic in DLB.
- This study is a cross-sectional, small-sized pilot study.
- The pathological diagnosis of DLB could not be obtained.

fluctuations. DLB is now thought to be the second most common form of dementia after Alzheimer's disease (AD), affecting 15–25% of elderly demented patients.¹ The clinical diagnostic criteria for DLB were first published in 1996 and modified in 2005.^{1 2} The central feature of DLB is progressive cognitive decline. The core features include recurrent visual hallucinations, spontaneous features of parkinsonism and fluctuating cognition with pronounced variations in attention and alertness. These diagnostic criteria require clinical evaluation by a trained neurologist and include few objective markers. Although Single Photon Emission CT (SPECT) and ¹²³I-metaiodobenzylguanidine (MIBG) myocardial scintigraphy are useful for making the differential diagnosis of DLB,^{3–5} these examinations are too expensive to be generally utilised. DLB is characterised by intracytoplasmic inclusions called Lewy bodies that consist of filamentous protein granules composed of α -synuclein and ubiquitin. Lewy bodies are often seen in the brainstem and in limbic and cortical neurons.² However, the brainstem serves as the connection among the cerebral hemispheres and the cerebellum, and is responsible for basic vital functions. Modulation of the respiratory rhythm is one of the most important functions of the brainstem. In cases of brain disorders, such as Wallenberg syndrome and brain tumours, it is known that respiratory patterns sometimes become ataxic. Because brainstem neurodegeneration is often

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seen in patients with DLB, the respiratory patterns of patients with DLB might be dysrhythmic. However, this hypothesis has not yet been systematically studied and no controlled data have been published to date. The current investigation was performed in patients with DLB, AD and patients without dementia to assess and compare breathing patterns. In addition, we evaluated the usefulness of the measurement of breathing patterns as a novel tool to aid the differential diagnosis of dementia.

METHODS

Subjects

The study population comprised consecutive inpatients of the Department of Geriatric Medicine at the University of Tokyo Hospital, who were admitted for evaluation of progressive cognitive impairment. The patients underwent neuropsychological assessments, including the Mini-Mental State Examination (MMSE), blood tests and neuroimaging tests (MRI and SPECT). The diagnosis was performed at a consensus conference of physicians and neurologists. The diagnosis of DLB was based on the clinical diagnostic criteria proposed by McKeith *et al.*² And AD was diagnosed in accordance with the National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer's disease and Related Disorders Association.⁶ The group without dementia comprised patients who did not fit the criteria for dementia in the medical and neurological examinations. Between November 2010 and June 2012, 70 patients were enrolled in this study.

Exclusion criteria

We evaluated the breathing patterns of patients with DLB, with AD and patients without dementia. Patients with cognitive impairments other than AD or DLB (eg, normal pressure hydrocephalus and vascular dementia) were excluded.

Breathing irregularities are associated with certain environments such as high altitudes, medical conditions, such as heart failure and chronic obstructive pulmonary disease, and the usage of opioids or levodopa.^{7, 8} We excluded one patient who reported breathing problems, including dyspnoea. We also excluded four patients who were taking levodopa and dopamine agonists. No patients were using opioids. We excluded three patients whose recorded respiratory signal data were insufficient due to noise.

Recordings of respiration

The patients underwent 30 min or more of recordings of respiration on bed rest with closed eyes in the inpatient ward by using the device for polysomnography (Somnotrac Pro, CareFusion, San Diego, California, USA). The recordings included two EEG leads (C3-A2 and O2-A1), electro-oculogram and submental electromyogram (EMG). Oronasal thermistor channel and arterial oxygen saturation (finger oximetry) were also

monitored. All recordings were scored visually by an experienced rater according to the standard criteria.⁹

Five consecutive minutes of stable respiratory signals measured while the patients were awake were extracted from the recordings. Stable respiratory signals during wakefulness were identified using the respiratory signals themselves, arterial oxygen saturation, EMG and EEG. Wakefulness was confirmed using EEG. When the amplitude of the EMG signal that detected any body movements was high, that part of the signal was considered to have occurred during movement and was determined to be inappropriate for analysis. Epochs including apnoeas and hypopneas were also excluded.

Analysis of respiratory signals

Five minutes of stable respiratory signals were analysed. The breath-to-breath time was calculated for each respiration. To assess breathing irregularities, the coefficient of variation, CV ((SD/mean)×100) for the breath-to-breath time was calculated. The respiratory rate was also calculated.

In addition, we examined the amplitude spectrum $A(f)$ obtained using fast Fourier transform (FFT) for analysing oscillation patterns in the respiratory signals. $A(f)$ represents the amplitude distribution as a function of frequency. To avoid the possibility of spectral leakage, the signals were windowed by multiplying them by a Hamming window ($w(n)$):

$$w[n] = 0.54 - 0.46 \cos(2\pi n/N) \text{ for } n = 0, 1, 2, \dots, (N-1)$$

Then, the amplitude spectrum of the respiratory signals was analysed using the FFT of the Hamming-windowed signal.¹⁰ Furthermore, according to Shannon entropy, we determined the spectral entropy S based on normalised $A(f)$ to assess breathing irregularities:

$$\text{Entropy } S = - \sum A(f) \times \log_2(A(f))$$

To reduce the influence of artifact in the respiratory signals and FFT, we restricted the frequency of analysing Shannon entropy. Based on the results of the breath-to-breath time analysis (1.7–7.6 s, namely 0.13–0.59 Hz), we determined the validated frequency of 0.1–0.6 Hz.

Statistical analysis

The distribution of data was examined using the Shapiro-Wilk test. If data were normally distributed, one-way analysis of variance with Games-Howell post hoc tests was applied for group comparisons. If the data deviated significantly from normality, the Kruskal-Wallis test was used, followed by evaluation with the Mann-Whitney U test for multiple comparisons, with the p values being corrected according to the Bonferroni method. In correlation analysis, the Spearman rank

correlation coefficient was used. The χ^2 test was used to compare categorical variables, such as gender.

The diagnostic cut-off points for the CV value and Shannon entropy S to discriminate between DLB and AD were estimated for each outcome by maximising the Youden index. The discrimination ability was assessed by the area under the curve (AUC). Using this threshold, the sensitivity and specificity were calculated.

All of the statistical analyses were performed using the SPSS software program (V.19.0, SPSS inc, Chicago, Illinois, USA). Statistical significance was defined as p values <0.05 .

RESULTS

Patient characteristics

Fourteen patients with DLB, 21 with AD and 12 without dementia were enrolled in this study. Among the 14 patients in the DLB group, 9 patients had probable DLB and 5 patients had possible DLB. The diagnoses in the five possible DLB patients were all supported by the typical findings in SPECT: generalised low uptake, reduced occipital activity and relatively preserved hippocampal blood flow. Table 1 shows the characteristics of the patients. The age and sex distributions were not significantly different among the three groups. No significant difference was found between the DLB group and the AD group in the MMSE. The use of medications for hypertension, hyperlipidaemia and diabetes mellitus were similar between the groups. Four patients in the DLB group, five patients in the AD group and no patients in the group without dementia had taken donepezil.

Breathing patterns

Figure 1 shows examples of flow signals during wakefulness for a patient with DLB, with AD and without dementia. Figure 2 shows examples of the characteristic patterns of the amplitude spectrum $A(f)$. The patient with AD and without dementia exhibited a sharp peak in the spectrum. However, the amplitude spectrum of the patient with DLB was distributed over the whole displayed frequency area. These tracings indicate the

occurrence of more irregular breathing patterns in the patient with DLB compared with that observed in the patient with AD and the patient without dementia.

The respiratory rates calculated from the average breath-to-breath time in patients with DLB, with AD and patients without dementia were 16.2 (3.2), 17.7 (2.7) and 18 (2.3)/min, respectively (mean (SD)). These differences were not statistically significant. However, the CV value for the breath-to-breath time in patients with DLB was significantly higher than in either the patients with AD or the patients without dementia (13.5 (2.6), 10 (3) and 9.9 (2.8), respectively; figure 3A). To discriminate the patients with DLB from those with AD using the CV value, the most favourable diagnostic threshold was found to be 10.2 (AUC=0.79). This threshold had a sensitivity of 92.9% and a specificity of 61.9%.

The results of the comparison of Shannon entropy S are summarised in figure 3B. The values of Shannon entropy S were significantly higher in patients with DLB than in patients with AD and patients without dementia (6.35 (0.11), 6.11 (0.29) and 6.16 (0.19), respectively). To discriminate patients with DLB from those with AD using the Shannon entropy S value, the most favourable diagnostic threshold was found to be 6.18 (AUC=0.77). This threshold had a sensitivity of 100% and a specificity of 57.1%.

These findings indicate the diversity of breathing frequencies, that is, respiratory dysrhythmia, in patients with DLB.

Comparison of CV and Shannon entropy S

To assess breathing irregularities, we used two different methods, namely, we compare CV and Shannon entropy S . These two methods are independent approaches to the assessment of breathing patterns; however, a significant correlation (Spearman $r=0.78$, $p<0.001$) was observed between these two values (figure 4).

DISCUSSION

In this study, we observed that patients with DLB exhibit dysrhythmic breathing compared to patients with AD and patients without dementia.

Table 1 Characteristics of patients with DLB; with AD and without dementia

Characteristics	Patients with DLB n=14	Patients with AD n=21	Patients without dementia n=12	p Value
Number of patients				
Age (years)	81.5 (5.6)	79.6 (7.8)	78.5 (4.3)	n.s.
Sex (men/women)	6/8	7/14	4/8	n.s.
MMSE	21.0 (3.8)	21.2 (3.4)	27.8 (2.1)	$<0.001^*$
Hypertension	4	9	3	n.s.
Hyperlipidaemia	2	1	0	n.s.
Diabetes mellitus	1	1	1	n.s.

Values expressed as mean (SD) or number.

*One-way analysis of variance with Games-Howell post hoc tests (DLB vs AD: n.s., DLB vs without dementia: $p<0.001$, AD vs without dementia: $p<0.001$)

AD, Alzheimer's disease; DLB, dementia with Lewy bodies; MMSE, Mini-Mental State Examination; n.s., not significant.

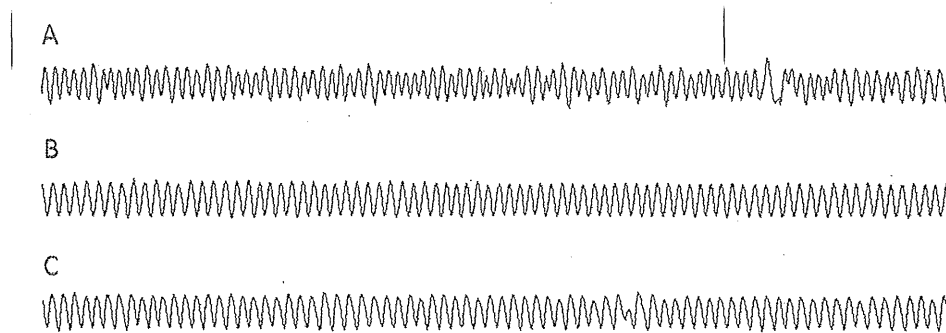


Figure 1 Typical flow patterns of a patient with DLB (A), a patient with AD (B) and a patient without dementia (C) observed in epochs of 5 min. Respiratory pattern is more irregular in the patient with DLB as compared with the patient with AD and the patient without dementia. AD, Alzheimer's disease; DLB, dementia with Lewy bodies.

The modulation of the respiratory rhythm is closely associated with the brainstem.¹¹ In particular, the pre-Bötzinger complex (pre-BötC) and the retrotrapezoid nucleus/parafacial respiratory group (RTN/pFRG) are thought to be very important for respiratory rhythm regulation.^{12–14} For this reason, respiratory dysrhythmia may occur in cases of brainstem disorders, such as Wallenberg syndrome and brain tumours. In patients with DLB, Lewy bodies are often seen in the brainstem; however, it remains unknown whether the localisation and density of Lewy bodies are strongly associated with the symptoms of DLB. It is possible, considering the neurodegenerative aspects of DLB, that localisation of Lewy bodies in the brainstem causes respiratory dysrhythmia.

One report has indicated that visual hallucinations are associated with increased numbers of Lewy bodies in the temporal lobe and amygdala, each of these areas being implicated in the generation of complex visual images.¹⁵ In addition, concerning the association between respiration and DLB, Mizukami *et al*¹⁶ reported the occurrence of decreased ventilatory responses to hypercapnia in patients with DLB. Furthermore, respiratory insufficiency, sleep-disordered breathing and central respiratory failure are known to occur in patients with multiple system atrophy,^{17, 18} which is an α -synucleinopathies, similar to DLB.

In this study, we also analysed the breathing patterns of patients without dementia. The CV for

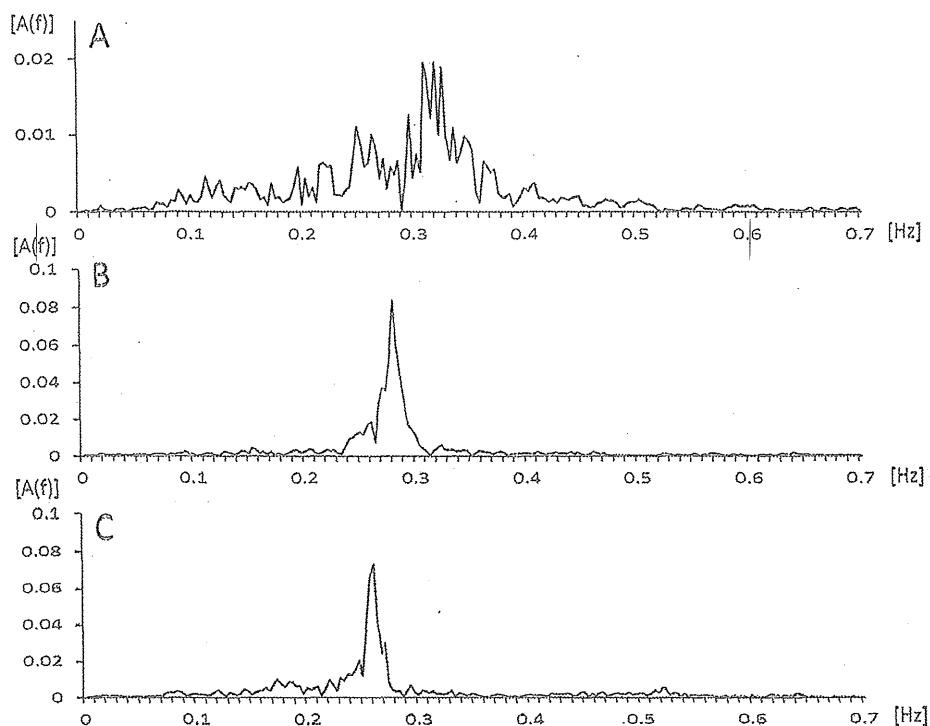


Figure 2 The typical power spectrum of a patient with DLB (A), a patient with AD (B) and a patient without dementia (C) obtained by fast Fourier transform. The amplitude spectrum of the patient with DLB is distributed over the whole displayed frequency. AD, Alzheimer's disease; A(f), amplitude spectrum; DLB, dementia with Lewy bodies.

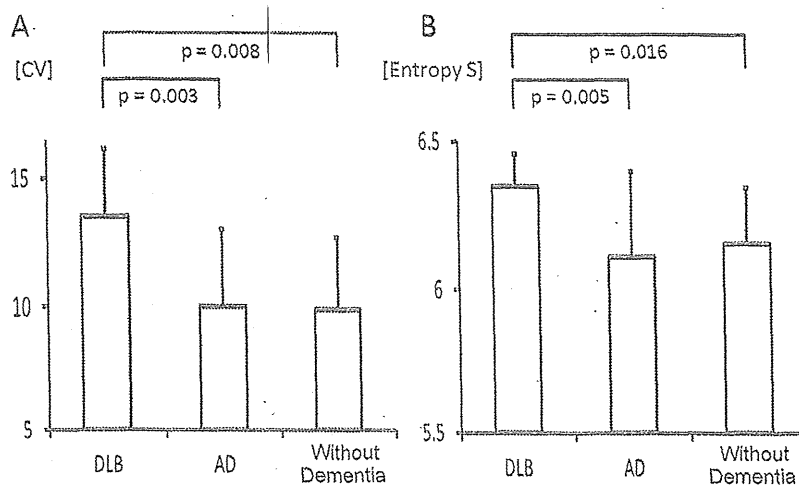


Figure 3 (A) Coefficient of variation for breath-to-breath respiratory time in patient with DLB, patient with AD and patients without dementia. One-way analysis of variance with Games-Howell post hoc tests; significant differences in DLB versus AD ($p=0.003$) and DLB versus without dementia ($p=0.008$). (B) The comparison of Shannon entropy S in DLB patients, AD patients and patients without dementia. One-way analysis of variance with Games-Howell post hoc tests; significant differences in DLB versus AD ($p=0.005$) and DLB versus without dementia ($p=0.016$). Values are mean \pm SD. AD, Alzheimer's disease; CV, coefficient of variation; DLB, dementia with Lewy bodies; n.s., not significant.

breath-to-breath time in patients without dementia was not significantly different from that reported in previous studies of control patients.^{19 20} Although the complication with hypertension was greater in AD group than in DLB group, no significant differences were found in the measures of breathing patterns between patients with hypertension and the patients without hypertension (data not shown).

Patients with DLB exhibit many clinical features other than dementia, visual hallucinations and parkinsonism. For example, Rapid Eye Movement sleep behaviour disorder, severe autonomic dysfunctions, such as orthostatic hypotension, repeated syncope and systematised

delusions, can be seen in patients with DLB.²¹ Furthermore, in a previous study, we reported a high frequency of periodic limb movements in patients with DLB.²² The results of the current study indicating that DLB patients exhibit dysrhythmic breathing compared with normal patients suggest that irregular breathing patterns may be a new clinical feature of DLB.

Currently, DLB and AD are diagnosed according to their respective clinical diagnostic criteria,^{2 6} and differentiation of these two diseases is frequently difficult. Our findings of different breathing patterns between patients with DLB and AD suggest the usefulness of the spectral analysis of breathing for discriminating patients with DLB from those with AD. Because the diagnostic threshold had a high sensitivity in our study, the spectral analysis of breathing may be useful for making an exclusive diagnosis. While the utilisation of SPECT and MIBG myocardial scintigraphy are limited to well-equipped hospitals, the spectral analysis of breathing can be performed more easily and with lower expenses. As a screening tool for the diagnosis of DLB, the spectral analysis of breathing patterns may be cost-effective and useful.

The FFT is an important tool for digital signal processing of the information commonly encoded in the sinusoids that form the signal. Additionally, the important information to be evaluated is the frequency and amplitude of the component sinusoids. To reduce spectral noise, a Hamming window is used that involves the multiplication of the signal by a smooth curve. The result is plotted graphically in terms of amplitude and frequency. In addition, we used Shannon entropy in this study to quantify the variability of the amplitude spectrum, namely breathing irregularities. This measure has been widely used in a range of biological applications in which quantitative descriptions of data regularity are

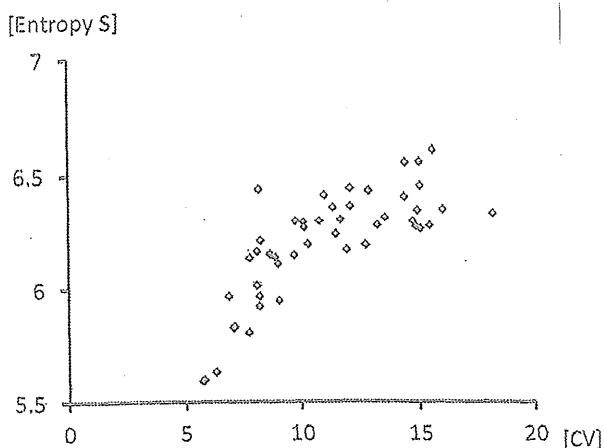


Figure 4 Scatter plot showing the relationship between the coefficient of variation for breath-to-breath respiratory time and the value of Shannon entropy S . A significant correlation ($r=0.78$, $p<0.001$) was found between the coefficient of variation (CV) and the Shannon entropy S .

required.^{23 24} The Shannon entropy indicates the degree of uncertainty and is higher when the variability of the parameter is greater.

There are several limitations to the current study. First, we included patients with possible DLB and probable DLB in the same DLB group. In addition, we did not make a pathological diagnosis of DLB or AD. A prospective investigation on the course of breathing patterns and cognitive impairment, including the eventual pathological diagnosis, should be examined in a future study. Second, no arterial blood gas analyses were performed. Therefore, a possible effect of hypercapnia or hypocapnia on breathing cannot be excluded. To evaluate more precisely, arterial blood gas analyses should be examined in a future study, as well. Third, we could not make the raters of respiratory measures completely blinded to the clinical symptoms of the patients, although the final diagnosis of dementia had been made independently, and the analysis of respiratory measures had been performed objectively according to the predetermined protocol. Finally, the number of patients in each group was relatively small. We could not rule out the contribution of other comorbid factors to irregular breathing. However, our data provide the first evidence of irregular breathing in DLB patients. In a future study, an additional investigation involving a larger number of patients should be performed.

In conclusion, we found that DLB patients exhibit dys-rhythmic breathing compared with that observed in AD patients and patients without dementia. Ataxic breathing may be a new clinical feature of DLB, and the spectral analysis of breathing patterns may be clinically useful for the diagnostic differentiation of DLB from AD.

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Contributors SH was involved in design, analysis, interpretation and drafting of the article. YY was responsible for conception, design, analysis, interpretation and drafting of the article. YU-K and KI were involved in design. MT and TM were involved in analysis. MA and YO were involved in design and interpretation. All authors had full access to the data and take responsibility for its integrity and the accuracy of the analysis.

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Competing interests None.

Patient consent Obtained.

Ethics approval The study was approved by the Institutional Review Board of the Graduate School of Medicine, University of Tokyo, and written informed consent was obtained from all participants before the study.

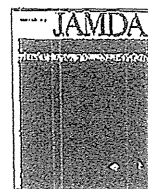
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Original Study

Priorities of Health Care Outcomes for the Elderly

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A B S T R A C T

Keyword:
Geriatrics
quality of care
health care policy

Objectives: Physicians are uncertain about what medical services should be provided to older and/or disabled patients. Better understanding of health outcome prioritization among health care providers and recipients may help the process of decision- and policy-making. For this purpose, surveys were conducted on priorities of health care outcomes for the elderly.

Design: Survey research.

Setting: Four groups of health care providers and four groups of health care recipients.

Participants: A total of 2512 health care providers and 4277 recipients.

Measurements: Questionnaires were sent to more than 8000 health care providers and more than 9000 health care recipients: geriatricians, physicians who commonly see older patients or work in long term care facilities, staff members and participants in adult day care, patients in outpatient geriatric clinics, family members of patients with dementia, and community-dwelling older adults. The questionnaire asked the subjects to rank 12 measures of health care outcomes.

Results: The mean response rate was 49%. All health care provider groups considered "improvement of quality of life" the most important. In contrast, in health care recipient groups, "effective treatment of illness," "improvement of physical function," and "reduction of carer burden" were given high priority, whereas "improvement of quality of life" was perceived as less important. All the groups, including health care providers and recipients, ranked "reduction of mortality" the least important, followed by "avoiding institutional care." Stratification analysis showed that the results did not differ by sex, nursing care level, or the existence of relatives who required nursing care, whereas age slightly influenced the order of high-ranked measures.

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Conclusion: Priorities of health care services and their differences between providers and recipients should be taken into account in the health care of older patients and the design of health care policies and research. Copyright © 2013 – American Medical Directors Association, Inc.

Japanese society has been rapidly aging owing to long life expectancy and a low birth rate.¹ People older than 65 comprised 23.8% of the population in 2012, which is expected to rise to 31.8% in 2030² and will be by far the highest in the world. Japanese physicians have been exposed to a high load of older patients, and management of older patients remains a major challenge. There are several reasons for this difficulty. Evidence is still largely lacking for older patients, especially for those older than 75 years, who account for 11.8% of the Japanese population.^{2,3} Older patients are likely to have multimorbidities, or co-occurrence of two or more chronic conditions,⁴ but application of disease-specific guidelines to older patients with multimorbidities may result in polypharmacy, an increased risk of adverse drug reactions, and poor outcomes.^{5,6} At the same time, however, older patients are at increased risk of underuse of necessary medication, for fear of polypharmacy or complications.^{7,8}

In an attempt to help optimize prescribing for older patients, investigators have devised numerous tools to guide clinicians, such as lists of indicated, beneficial medication or medication with high potential for harm.^{9,10} Although these tools are helpful in reducing exposure of older patients to inappropriate medication and risk of adverse drug events,¹¹ they do not provide more general considerations, such as when or how to discontinue potentially inappropriate medications, how to balance risks and benefits of unlisted medication, or how to manage medication in special circumstances, such as palliative and hospice care where symptom control is of higher priority. Therefore, the process of determining the medication regimen is inevitably subjective and individualized, taking into account patients' cognitive, physical, and social function, remaining life expectancy, and the goals of care.

Unfortunately, few studies have examined the priorities of health care perceived by health care providers and recipients in geriatric medicine. One small study conducted in England more than 15 years ago showed that geriatricians and patients similarly gave high priority to reducing disability and improving quality of care, and low priority to reducing mortality.¹² However, the serious question of whether there may be a gap in priorities of health care between health care providers and recipients has been raised.^{13,14}

Better understanding of health outcome prioritization among health care providers and recipients in geriatric medicine is necessary

to help physicians, older patients, and their family members discuss the goals of care and to assist health policy makers in effectively using resources to address the needs of older patients. In this study, we aimed to obtain a comprehensive picture of the views of groups with an important stake in geriatric health care services (geriatricians, physicians who commonly see older patients or work in long term care facilities, staff members and participants in adult day care, patients in outpatient geriatric clinics, family members of patients with dementia, and community-dwelling older adults) on the relative priorities of different outcome measures that are relevant to geriatric clinical practice and health care policy.

Methods

Between September 2010 and October 2011, surveys were conducted in the following eight groups:

- (1) All geriatricians (approximately 1500) board certified by the Japan Geriatrics Society
- (2) A total of 5000 physicians randomly selected from the list of board-certified physicians in five subspecialties (two internal medicine subspecialties, two surgical subspecialties, and one other) with high exposure to older patients
- (3) Physicians working in 300 long term care facilities that were randomly chosen from the nationwide list of long term care facilities
- (4) Staff members working in adult day care at 400 randomly chosen long term care facilities as mentioned previously
- (5) Participants in adult day care at the same 400 long term care facilities as mentioned previously
- (6) Patients in geriatric outpatient clinics at five university teaching hospitals (the University of Tokyo, Kyorin University, Nagoya University, Kyoto University, and Tohoku University)
- (7) Family members of patients with dementia who had been seen in geriatric outpatient clinics at four university teaching hospitals (Tohoku University was excluded because of the Tohoku Earthquake at the time of this survey)
- (8) A total of 6000 community-dwelling, functionally independent (ie, not requiring nursing care provided by long term care

Table 1
Survey Methods and Number of Valid Answers in 8 Groups

Groups	Time of Survey	Survey Methods	No. of Questionnaires Sent	No. (%) of Valid Answers ^a
Health care providers				
Geriatricians	2010, Sep	By post	1500	619 (41)
Physicians in 5 subspecialties	2011, Oct	By post	5000	1305 (26)
Physicians in long term care facilities	2011, Oct	By post	300	384 (48)
Adult day care staff	2010, Sep	By post for each facility	400 facilities (2 per facility)	204 ^b
Health care recipients				
Adult day care participants	2010, Sep	By post for each facility	400 facilities (5–10 per facility)	795 ^b
Patients in geriatric outpatient clinics	2010, Sep	Distributed by physicians and returned by post	950	512 (55)
Family members of patients with dementia	2011, Oct	Distributed by physicians and returned by post	542	333 (61)
Community-dwelling older adults	2010, Sep	By post	6000	2637 (44)

^aResponses with missing items or invalid answers were excluded.

^bFor adult-day care staff members and participants, questionnaires were sent to each facility by post, where 2 staff members and 5 to 10 participants were offered the questionnaire; 123 facilities (31%) returned the completed questionnaires.

insurance) older adults randomly drawn from the community registers of two target areas (Kashiwa, Chiba Prefecture, a city close to Tokyo, and Sabae, Fukui Prefecture, a provincial city), from which men and women, 65 to 74 years and older than 75 years, were equally selected

Postal questionnaires were sent to all groups of physicians and community-dwelling old adults. For adult day care staff members and participants, questionnaires were sent to each facility, where two staff members and 5 to 10 participants were offered the questionnaire, to be completed on a voluntary basis. The completed questionnaires were gathered at each facility and then returned to us. Patients and family members of patients with dementia received the questionnaires from their physicians (Table 1).

The questionnaire asked about the relative priorities of 12 health care measures that were derived from a literature review and a previous Internet-based survey conducted by the National Center for Geriatrics and Gerontology in 2009 (in Japanese; <http://www.ncgg.go.jp/pdf/itaku/21hokoku/20si-3.pdf>). Each item was expressed as several words so as to help health care recipients understand the meaning. The respondents were asked to rank the measures in order of priority from 1 (most importance) to 12 (least important). To facilitate ranking the outcomes in order, they were prompted to choose and rank the three most important outcomes, then the three least important outcomes, and last, the six middle outcomes. Ties, or the same ranks, were not allowed.

To examine whether variation in the question wording could affect the results, we devised another version of the questionnaire with different wording for four items and sent that version to a randomly selected subset of participants; however, the results were almost identical (data not shown). We also tested whether the order of health care measures that appeared in the questionnaire would affect the results in a random subset of participants, but the responses to the reverse order questionnaire were similar to those of the original version (data not shown). Therefore, we analyzed the responses from different versions (wording and order) together.

The following information was also collected using the questionnaire: age and sex for all participants; specialty (internal medicine, surgery, psychiatry, or others) and years of experience for physicians; qualification and years of experience for adult day care staff; nursing care level (level of required nursing care: relatively independent, limited impairment, needing extensive help, or severely dependent) for adult day care participants; nursing care level and the existence of relatives who required nursing care for patients in geriatric outpatient clinics; nursing care level, morbid conditions, and the existence of relatives who required nursing care for community-dwelling older adults.

The study protocol was approved by the Ethics Committee of the Graduate School of Medicine, The University of Tokyo. Ethical approval for the surveys on patients in geriatric outpatient clinics and family members of patients with dementia was also obtained from the participating institutions.

Results

The mean response rate for the eight groups was 49%, which varied from 28% for board-certified physicians to 68% for family members of patients with dementia (Table 1). The analytic sample included a total of 2512 health care providers and 4277 recipients.

Tables 2 and 3 show the relative priorities of 12 measures of health care services from the highest importance to the lowest, with mean and 95% CI, perceived by health care providers and recipients, respectively.

All physician groups considered "improvement of quality of life" the most important, and the low mean value for this item across physician

Table 2
Health Care Providers' Priorities for Health Care Outcome

Rank	Geriatricians (n = 619)	Physicians from 5 Relevant Subspecialties (n = 1305)			Physicians in Long Term Care Facilities (n = 384)			Adult Day Care Staff (n = 204)				
		Outcome	Mean	95% CI	Outcome	Mean	95% CI	Outcome	Mean	95% CI		
1	Improvement of quality of life	2.62	2.45–2.80	Improvement of quality of life	3.09	2.96–3.22	Improvement of quality of life	2.88	2.62–3.14	Improvement of quality of life	4.29	3.88–4.71
2	Patient satisfaction with care	4.37	4.15–4.58	Patient satisfaction with care	4.34	4.19–4.49	Patient satisfaction with care	4.60	4.32–4.88	Maintaining a high level of activity	4.35	3.96–4.73
3	Effective treatment of illness	4.80	4.53–5.07	Maintaining a high level of activity	4.64	4.48–4.80	Improvement of physical function	4.68	4.39–4.97	Reduction of carer burden	4.80	4.42–5.17
4	Maintaining a high level of activity	4.92	4.69–5.15	Improvement of physical function	5.25	5.08–5.42	Maintaining a high level of activity	4.73	4.43–5.03	Resolution of assessed problems	5.15	4.74–5.55
5	Improvement of physical function	4.94	4.71–5.18	Effective treatment of illness	5.22	5.13–5.52	Improvement of mental health	5.50	5.29–5.71	Improvement of mental health	5.26	4.86–5.65
6	Improvement of mental health	5.04	4.87–5.20	Reduction of carer burden	5.93	5.79–6.07	Resolution of assessed problems	5.77	5.51–6.04	Patient satisfaction with care	5.43	5.03–5.83
7	Resolution of assessed problems	6.39	6.17–6.61	Resolution of assessed problems	6.12	5.97–6.27	Reduction of carer burden	6.10	5.84–6.37	Improvement of physical function	5.83	5.42–6.25
8	Reduction of carer burden	6.45	6.27–6.64	Improvement of mental health	6.39	6.26–6.52	Effective treatment of illness	6.22	5.87–6.57	Improvement of social functioning	7.17	6.79–7.55
9	Efficient use of resources	7.83	7.67–8.00	Efficient use of resources	7.50	7.37–7.62	Efficient use of resources	8.15	7.95–8.35	Effective treatment of illness	7.41	6.95–7.87
10	Improvement of social functioning	8.80	8.62–8.98	Improvement of social functioning	8.63	8.56–8.82	Improvement of social functioning	8.20	7.95–8.44	Efficient use of resources	7.49	7.04–7.81
11	Avoiding institutional care	10.28	10.15–10.42	Avoiding institutional care	10.24	10.14–10.34	Avoiding institutional care	10.31	10.13–10.50	Avoiding institutional care	9.97	9.71–10.23
12	Reduction of mortality	10.56	10.37–10.76	Reduction of mortality	10.49	10.36–10.62	Reduction of mortality	10.85	10.67–11.04	Reduction of mortality	10.92	10.66–11.17

CI, confidence interval.

Table 3
Health Care Recipients' Priorities for Health Care Outcome

Rank Order	Family Members of Patients With Dementia (n = 333)		Patients in Geriatric Outpatient Clinics (n = 512)		Adult Day Care Participants (n = 795)	
	Outcome	Mean 95% CI	Outcome	Mean 95% CI	Outcome	Mean 95% CI
1	Effective treatment of illness	4.23 4.11-4.36	Effective treatment of illness	3.04 2.76-3.32	Improvement of physical function	3.64 3.42-3.86
2	Reduction of carer burden	4.56 4.44-4.67	Improvement of physical function	4.49 4.19-4.78	Effective treatment of illness	4.33 4.11-4.55
3	Improvement of physical function	5.24 5.13-5.36	Maintaining high level of activity	5.11 4.76-5.45	Reduction of carer burden	5.40 5.18-5.63
4	Maintaining high level of activity	5.88 5.76-5.99	Reduction of carer burden	5.29 4.98-5.61	Improvement of quality of life	6.08 5.86-6.30
5	Resolution of assessed problems	5.91 5.76-6.05	Improvement of mental health	5.53 5.24-5.82	Maintaining high level of activity	6.12 5.88-6.37
6	Improvement of mental health	6.26 6.15-6.36	Improvement of quality of life	5.80 5.48-6.13	Improvement of mental health	6.38 6.17-6.58
7	Improvement of quality of life	6.36 6.23-6.49	Resolution of assessed problems	5.98 5.69-6.27	Patient satisfaction with care	6.44 6.24-6.64
8	Patient satisfaction with care	6.81 6.70-6.92	Patient satisfaction with care	6.01 5.70-6.31	Resolution of assessed problems	6.45 6.26-6.65
9	Efficient use of resources	6.91 6.81-7.02	Efficient use of resources	7.49 7.21-7.76	Efficient use of resources	6.57 6.36-6.77
10	Improvement of social functioning	7.44 7.32-7.56	Improvement of social functioning	9.17 8.99-9.45	Improvement of social functioning	8.22 8.03-8.42
11	Avoiding institutional care	8.43 8.31-8.56	Avoiding institutional care	9.86 9.60-10.12	Avoiding institutional care	8.61 8.41-8.81
12	Reduction of mortality	9.98 9.87-10.08	Reduction of mortality	10.23 9.99-10.48	Reduction of mortality	9.75 9.55-9.95

CI, confidence interval.

groups indicated physicians' strong preference for this item. All the physician groups also considered "patient satisfaction," "maintaining a high level of activity," and "improvement of physical function" important after "improvement of quality of life," with some variation in the order of their preferences. Geriatricians ranked "effective treatment of illness" the third most important, in contrast to the other two physician groups that ranked this item lower. Adult day care staff ranked "improvement of quality of life" and "maintaining a high level of activity" first and second, respectively, but placed "reduction of carer burden" the third most important, unlike physicians.

With regard to the receiving side of health care, "effective treatment of illness," "improvement of physical function," and "reduction of quality of life" tended to be perceived as less important.

All the groups, including both health care providers and recipients, ranked "reduction of mortality" the least important, followed by "avoiding institutional care," "improvement of social functioning," and "efficient use of resources," except for the adult day care staff who ranked "improvement of social functioning" higher than "effective treatment of illness."

Stratification analysis demonstrated that the results from physicians were not influenced by sex (male vs female, data not shown); however, physicians older than 60 years tended to rank "effective treatment of illness" and "improvement of physical function" higher compared with younger physicians, who appeared to prioritize "patient satisfaction" and "maintaining a high level of activity." Physicians with more than 30 years' experience, most of whom were older than 60 years, showed a similar tendency, prioritizing "effective treatment of illness" and "improvement of physical function." The results from adult day care staff were identical across groups stratified by age, years of experience, and qualification (data not shown).

The results from the health care recipients did not differ by nursing care level (relatively independent vs limited impairment or higher, or limited impairment vs needing extensive help or higher) for adult day care participants and patients in geriatric outpatient clinics, the existence of relatives who required nursing care (present vs absent) for patients in geriatric outpatient clinics, study site for patients in geriatric outpatient clinics and community-dwelling older adults, or sex for all health care recipient groups (data not shown). Although stratification by age showed that the three measures given highest priority were the same across the age groups (65 to 74 vs older than 75) in community-dwelling older adults, the younger group ranked "reduction of carer burden" first, whereas the older group ranked "effective treatment of illness" first (data not shown).

Discussion

This study is, to our knowledge, the largest survey ever conducted to describe health outcome prioritization in geriatric medicine. We aimed to obtain a comprehensive picture of the views of those involved in decision-making processes in geriatric medicine and compare views between health care providers and recipients. We chose four groups each from providers and recipients that are considered relevant to our purpose. The mean response rate was close to 50%, which was good for a large-scale postal survey and ensured the representative nature of our respondents.

This survey demonstrated that there may be an important gap in health outcome prioritization between health care providers and recipients in geriatric medicine. All health care provider groups, notably physicians, expressed a strong preference for improvement in quality of life (QOL) as a priority of care, whereas health care recipients gave the highest priority to effective treatment of diseases and tended to put lower importance on QOL. In the context of clinical medicine, QOL is often used as a nonspecific, all-encompassing term to describe

nonmortality outcomes averaged over multiple domains (ie, physical, social, and psychological functioning and well-being). Consideration of QOL is essential for the selection of a treatment option, particularly when conditions are noncurative and chronic.¹⁵ Therefore, it is not surprising that physicians who regularly see older patients with multiple chronic conditions consider QOL the most important health care outcome. On the other hand, the term QOL may not be familiar to many health care recipients, and we cannot exclude the possibility that QOL might be confused with other terms, such as standard of living.

Most health care recipients ranked effective treatment of diseases as the most important, suggesting that patients are concerned about their own particular symptoms rather than nonspecific QOL, arguing for efforts to examine the symptoms most concerning to patients. The high importance of effective treatment of diseases ascribed by health care recipients, but not physicians, also implies the significance of the often-neglected aspect of inappropriate prescribing in older adults: underuse of medication likely to be beneficial to older adults. Increased evidence has suggested that failure to prescribe indicated, beneficial medication is common in older adults,^{7,8,16} and recent attempts to provide an explicit list of appropriate, indicated medication for older adults are justified.¹⁰

Interestingly, views on patient satisfaction were also different. All physician groups ranked patient satisfaction as the second top priority, whereas health care recipients considered this to be less important. This tendency has been demonstrated in a prior small study in England more than 15 years ago.¹² Recently, patient satisfaction has been increasingly used to measure health care qualities and compare health plans or physicians.¹⁷ However, our finding may argue against the value of patient satisfaction as a performance measure in geriatric medicine, especially in light of recent evidence suggesting that higher patient satisfaction is accomplished at the sacrifice of increased use of health care resources and may not be directly associated with technical quality of care or improved outcome.^{17,18}

We observed agreement on several items between health care providers and recipients. The importance of physical and mental function, such as maintaining activity or improving physical function, was expressed by both health care providers and recipients. This finding was consistent with prior studies in older adults with multiple chronic conditions^{12,19} or terminal conditions,^{20,21} suggesting that physical and mental function should be an essential factor to consider as a health care outcome in various care settings for older patients.

Reduction in mortality was given the lowest priority by all the groups in health care providers and recipients alike. This view is similar to that observed in previous studies.^{12,19} This finding supports the contention that treatment interventions should be assessed in terms of reduced morbidity and improved QOL in addition to reduced mortality.

In this survey, respondents' characteristics, except age, had limited influence on their views on health outcome prioritization within each group. Geriatricians older than 60 years and community-dwelling adults older than 75 years gave higher priority to effective treatment of diseases compared with their younger counterparts. This suggests that health outcome priorities may not be stable, and can change as respondents age or differ from generation to generation. The cross-sectional design of our survey prevented us from separating the age effect from the secular trend, and further studies will be required to examine the time- or setting-dependent variability of health outcome prioritization.

This study has several limitations. First, although the average response rate was high for a postal survey, it was lower in physician groups than in health care recipient groups (26% to 48% vs 44% to 61%, Table 1). Thus, selection bias cannot be excluded. Second, it was not sure that health care recipients, particularly adult day care participants, correctly understood the study terminology. Third, some of the

items used in the survey were not mutually exclusive. Nevertheless, a similar trend in priorities of outcome measures according to either side of health care providers or recipients suggests that the overall results were not significantly affected by these limitations.

Conclusion

We demonstrated that there was significant agreement and disagreement of health outcome prioritization between health care providers and recipients in geriatric medicine. Health care providers and recipients agreed on high priority for function and low priority for reduction in mortality, but there was obvious disagreement in how they perceived QOL, treatment effect, and patient satisfaction as goals of care. Such disagreement necessitates better communication between providers and recipients to reach goals of care that are mutually understandable and tailored to meet patients' specific needs. The low importance of reduction in mortality and patient satisfaction ascribed by health care recipients may question the value of these outcomes as a way to assess treatment interventions and quality of care. We propose that the priorities of health care outcomes and their differences between providers and recipients demonstrated in this study should be taken into account in the health care of older patients and the design of health care policies and research.

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高齢者に対する 適切な医療提供の指針

<作成グループ・団体>

厚生労働科学研究費補助金（長寿科学総合研究事業）高齢者に対する
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はじめに

「指針の必要性」

高齢者、特に75歳以上の後期高齢者の増加¹⁾に伴い、高齢者医療への需要はますます高まってきている。しかし、高齢者に対する医療提供は医療従事者にとって難しいものになっている。その原因としては、加齢に伴う生理的な変化によって疾患の表れ方も治療に対する反応も若年者とは異なること、複数の慢性疾患を持っていること²⁻⁴⁾、それに伴い薬剤数が増え相互作用や薬物有害事象が起こりやすいこと⁵⁻⁸⁾、高齢者を対象とした診療ガイドラインが十分に確立されていないこと⁹⁾、さらに若年者に対する診療ガイドラインの適用により必ずしも良好な結果が得られないこと¹⁰⁻¹²⁾等が挙げられる。この指針は医療従事者が高齢患者に対して過少でも過剰でもない適切な医療提供¹³⁾を行えるよう支援することを目的として作成されたものである。

「指針の使い方」

本指針は、医療従事者が高齢患者に対して医療提供を行う際に考慮すべき事柄を整理し、基本的な要件を示したものである。本指針は主に医師が使うことを念頭に作成されたが、高齢者医療に関わる他の職種にも適用できる。本指針は個々の疾患に対する診療ガイドラインに置き換わるものではないが、実際に治療する際に考慮すべき項目を示している。診療ガイドラインが高齢患者を対象としていない場合、またはガイドラインが相互に矛盾する内容を含む場合などには、本指針に示された基本的な考え方を準用して治療方針決定の一助とすることが推奨される。

1. 「高齢者の多病と多様性」

・高齢者の病態と生活機能、生活環境をすべて把握する。

1. 1. 老化の進行速度には大きな個人差があり、その上、老化の身体的・精神的・社会的な機能面に対する影響の大きさは個人によりそれぞれ異なっている¹⁴⁾。また、生活習慣病をはじめとする多くの疾患は高齢になるにつれて有病率が高まるため、高齢者は複数の疾患に罹患していることが多い²⁻⁴⁾。したがって、高齢者に対する医療提供にあたっては、かかりつけ医としての役割を意識し、全ての病態を把握した包括的な管理を目指すことが望ましい。
1. 2. 身体的・精神的・社会的な機能の多様性から高齢者では個人差が非常に大きく、症状や所見も非定型的である事が多い¹⁴⁻¹⁶⁾。こうした多様性を念頭に置き、高齢者総合的機能評価を用いて身体的・精神的・社会的な機能を個別に評価することが重要である¹⁷⁻²⁰⁾。また、高齢者では疾患の経過が医学的要因のみならず、環境要因の影響を強く受けるため、居住環境や生活習慣、経済状態、家族関係、社会関係を把握し、それらを医療に反映することが重要である²¹⁻²⁵⁾。
1. 3. 高齢者では多病のため、複数の医療機関から断片的かつ重複した医療提供を受ける可能性が高い^{10,26-28)}。一方で年齢や身体的、精神的、社会的な機能の低下などを理由に、受け入れや処置などの医療提供が制限され過少医療に陥る危険性がある²⁹⁻³³⁾。高齢者においても有効性が確立された医療行為が存在することを念頭に置き、ベネフィット・リスクバランスを考慮した医療提供を心がける^{34,35)}。

2. 「QOL維持・向上を目指したケア」

・生活機能の保持、症状緩和などによりQOLの維持・向上を目指す。

2. 1. 高齢者は若年者に比べて予備力に乏しく、若年者であれば一過性に終わるような疾病、例えば腰痛や肺炎であってもそれを契機として日常生活機能低下などによりQOL低下を生じやすい³⁶⁻³⁸⁾。一度日常生活機能低下を来すと完全な回復を期待することは難しいため^{39,40)}、転倒予防⁴¹⁻⁴⁴⁾やワクチン接種⁴⁵⁻⁴⁸⁾、口腔管理⁴⁹⁻⁵¹⁾などを行いその契機となる疾病を予防すること、また疾病に罹患した場合でも早期離床を図るとともに機能回復のためのリハビリテーションを早期から行い、日常生活機能の保持をはかることが重要である^{52,53)}。
2. 2. 老年症候群と呼ばれる高齢者に頻繁に見られる諸症状(認知症、せん妄、うつ、虚弱、廃用症候群、低栄養、嚥下障害、転倒、尿失禁、便秘、褥瘡、脱水など)⁵⁴⁾もQOL低下や日常生活機能低下を来すことが多い⁵⁵⁻⁵⁷⁾。これらの老年症候群を予防し、また発症の際には早期発見、治療するため、包括的なスクリーニング、評価が必要である。特に認知症については、広くスクリーニングを行うとともに、必要に応じて専門医療機関での鑑別診断を含めて早期に対応することが重要である。

2. 3. 高齢者の疾患は、その多くが治癒を期待できない慢性疾患である³⁾。このような慢性疾患に対しては治癒を目指したやみくもな治療よりも症状緩和が重要である。保健・医療・福祉の一体的な取り組みによって療養環境の整備、メンタルケア、栄養管理や口腔ケアを含めたヘルスケア、緩和ケア等を行い、QOLを低下させる症状の緩和と共にQOLの維持・向上に努める。

3. 「生活の場に則した医療提供」

- ・患者のQOL維持に生活の場の問題は重要であり、適切な医療提供の場を選択する
- ・医療提供の場を変更する際に生じる問題を理解し、予防に努める

3. 1. 患者本人が生活の場として快適である場所、QOLを最も高く維持できる場所で可能な限り長く過ごせるように医療、看護、介護、福祉による地域包括ケアを含めた総合的なケアを目指す⁵⁸⁾。入院治療が必要となった場合においても、生活の場に早く戻る事を目標として早期から退院支援を十分に行う。医療提供の場を選択並びに変更する場合には、患者本人・家族と積極的に情報を交換してどのような場がふさわしいかを決定する支援を行う^{59,60)}。

3. 2. 医療提供の場を変更する際、医療提供者間のコミュニケーション不足から不適切な医療が行われることがある^{61,62)}。また、医療提供の場が変わることに伴い、せん妄などの精神症状⁶³⁾や廃用症候群³⁶⁻³⁸⁾を生じやすい。したがってこうしたリスクを理解し、予防に努めると共に円滑な医療連携を実践する⁶⁴⁾。

3. 3. 医療提供の場として入院医療や外来医療に加えて訪問看護ステーションや認知症サポート医などの地域における医療資源を活用した在宅医療や施設における医療を考慮する。

4. 「高齢者に対する薬物療法の基本的な考え方」

- ・有害事象や服薬管理、優先順位に配慮した薬物療法を理解し、実践する。

4. 1. 高齢者では有害事象が起こりやすい^{65,66)}。薬物動態や薬力学の加齢変化^{67,68)}を理解し、原則的に少量から薬物を開始し、薬物に対する反応・薬物有害事象をモニターしながら漸増する^{69,70)}。多剤併用（特に6剤以上）に伴って予期せぬ相互作用や薬物有害事象の危険性は高くなるため^{6,71-76)}、可能な限り多剤併用は避ける。また、高齢者に対して有害事象を起こしやすい薬物が知られており^{77,78)}、それらの薬に関しては特に慎重に適用を考慮する⁷⁹⁾。

4. 2. 認知機能の低下、巧緻運動障害、嚥下障害、薬局までのアクセス不良、経済的事情、多剤併用など薬剤療法に対するアドヒアランスを低下させる要因は多岐に渡る⁸⁰⁾。服薬アドヒアランスについて、本人だけでなく家族や介護者からも定期的に情報を収集し、アドヒアランスを低下させる要因を同定し、予防・改善に努める^{81,82)}。また、合剤の使用や一包装、剤形の変更など服用が簡便になるよう工夫する⁸³⁾。

- 4.3. 高齢者は慢性疾患や老年症候群を複数有していることが多いが、高齢者対象の診療ガイドラインは十分に確立されておらず⁹⁾、若年者対象の診療ガイドラインの適用により必ずしも良好な結果が得られないため、疾患や症状毎に薬物療法を行う考え方は必ずしも適切でない¹⁰⁻¹²⁾。個々の患者の疾患や重症度、臓器機能、身体機能・認知機能・日常生活機能、家庭環境を総合的に考慮し、患者と家族の目指す治療目標に応じて薬物の適用と優先順位を判断し、必要な薬物を選択し⁸⁴⁾、優先度が低い薬剤は中止を考慮する^{66,85,86)}。
- 4.4. 代替手段が存在する限り薬物療法は避け、まず非薬物療法を試みるべきである^{69,70)}。全ての薬物（ビタミンや漢方薬、OTCなども含む）をお薬手帳などを用いて把握し^{87,88)}、併用薬が不明な場合、原則的に新たな処方では避ける。薬物動態や薬力学の加齢変化、生活環境の変化^{67,68)}によって、薬物が不要になる場合がある事を理解し、定期的に必要性を見直すべきである^{66,89-92)}。

5. 「患者の意思決定を支援」

- ・意思決定支援の重要性を理解し、医療提供の方針に関して合意形成に努める。

- 5.1. 高齢者医療では想定される優先目標が立場や価値観の違いによって異なってくる。例えば、高齢者医療の優先順位に関する意識調査において、高齢者が医療に対して望むことは「病気の効果的治療」や「身体機能の回復」であったが、医師が優先することは「QOL（生活の質）の改善」と異なっていた⁹³⁾。したがって治療に関するエビデンス、予後に関する情報を提供することによって意思決定を支援し、患者本人と家族の価値観を尊重しつつ目標に関して合意形成を行う事が重要である⁹⁴⁾。
- 5.2. 合意形成において最も重視すべきことは患者本人の意思・価値観である。終末期や認知機能障害等により患者本人から意思、価値観を確認することが困難な場合であっても、患者本人の価値観を家族や医療チームが想定し、合意形成を目指す。

6. 「家族などの介護者もケアの対象に」

- ・家族をはじめとした介護者の負担を理解し、早期に適切な介入を行う。

- 6.1. 介護者は心身に大きな負担がかかり、QOL低下やうつ病などの危険性が高まることが報告されている⁹⁵⁻⁹⁹⁾。したがって医療提供に際しては介護サービスなどの社会資源を得られるよう積極的に情報を提供し、レスパイトケアなどの介護者の負担を軽減する方策を考えることが必要である^{25,99-102)}。介護者の心身への負担が強い場合には医療機関への受診を勧める。
- 6.2. 本邦においては少子高齢化や核家族化の影響から、独居高齢者、高齢者が高齢者を介護するいわゆる「老老介護」、認知症患者が認知症患者を介護するいわゆる「認認介護」が社会問題化している¹⁰³⁾。そうした介護状況には格別の注意が必要であり、早期に家族等と相談し、介護能力を考慮した上で、介護保険サービスの導入等の対応を行うことが望ましい。

7. 「患者本人の視点に立ったチーム医療」

- ・患者もチームの一員であることを理解し、患者本人の視点に立った多職種協働によるチーム医療を行う。

7.1. チーム医療とは「医療に従事する多種多様な医療スタッフが、各々の高い専門性を前提に、目的と情報を共有し、業務を分担しつつも互いに連携・補完し合い、患者の状況に的確に対応した医療を提供すること」¹⁰⁴⁾と定義される。高齢者に対するチーム医療の適切な導入は医療の質・安全性の向上、医療スタッフの負担軽減に有効である¹⁰⁵⁻¹¹²⁾。医療提供者は医療、看護、介護、福祉に携わる各職種の専門性をお互いに理解、尊重し、多職種協働によるチーム医療を行う¹¹³⁾。

7.2. チーム医療においては、患者本人の視点に立つことが重要である¹¹³⁾。相談と説明を行うだけでなく、患者本人及び家族のチームミーティングへの参加を促す。患者本人及び家族が能動的に医療提供に関わることで、医療の質の向上¹¹⁴⁾、機能低下や入院の予防^{59,60,115)}が期待できる。