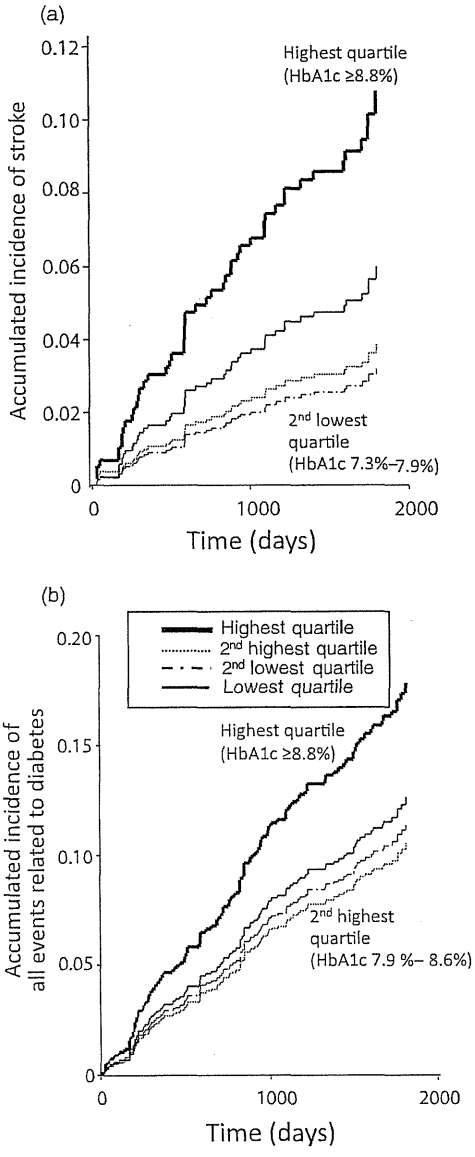

Figure 5 Glycated hemoglobin A1c (HbA1c) and incidence of stroke or all events related to diabetes. The highest HbA1c quartile (≥8.8%) had an increased incidence of stroke compared with the second lowest ($P = 0.003$), second highest ($P = 0.008$) and lowest ($P = 0.092$) quartiles. The incidence of stroke was lowest in the second lowest HbA1c quartile (7.3–7.9%). This suggests the existence of a J-curve incidence of stroke according to HbA1c distribution. The highest HbA1c quartile (≥8.8%) had a significant increase in diabetes-related events compared with the second lowest ($P = 0.031$) and second highest quartiles ($P = 0.058$), but not the lowest quartile group.

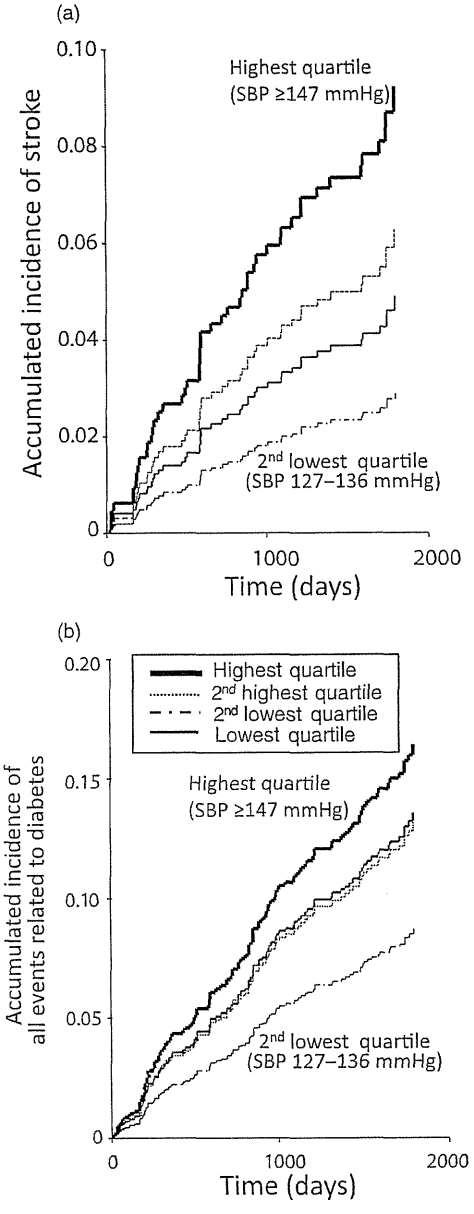

Figure 6 Systolic blood pressure (SBP) and incident of stroke or all events related to diabetes. The highest SBP quartile (≥147 mmHg) had an increased incidence of stroke compared with the second lowest (127–136 mmHg; $P = 0.013$) and lowest (<127 mmHg; $P = 0.083$) quartiles. The incidence of total diabetes events in the highest SBP quartile (≥147 mmHg) was significantly greater than only the second lowest quartile ($P = 0.023$). This suggests the existence of a J-curve incidence of stroke according to SBP distribution.

stroke and total diabetes-related events compared with the second lowest HbA1c quartile ($P = 0.003$ for stroke and $P = 0.031$ for total diabetes events). Interestingly, stroke incidence was lowest in the second lowest HbA1c quartile (7.3–7.9%) compared with the other three quartiles, resulting in a J-curve incidence for stroke according to HbA1c distribution. Similarly, the highest SBP quartile (≥147 mmHg) had an increased incidence of stroke and total diabetes-related events compared with the second lowest SBP quartile (127–136 mmHg; $P = 0.013$ for stroke and $P = 0.023$ for total diabetes-related events; Fig. 6a,b). The incidence of stroke or total diabetes-related events was also lowest in the

Table 3 Variables associated with incident composite events in multivariate Cox regression analyses after the landmark time

	Number of events	Significant variables	Hazard ratio (95%CI)	Significance
CVE (fatal MI + non-fatal MI + angina pectoris + coronary revascularization)	35	Age	1.028 (0.955–1.107)	0.460
		Sex	0.663 (0.328–1.342)	0.253
		HbA1c	1.182 (0.856–1.631)	0.309
		LDL-C	1.011 (1.000–1.021)	0.045
		HDL-C	0.996 (0.973–1.019)	0.705
		SBP	1.004 (0.983–1.026)	0.706
Stroke	48	Age	1.080 (1.016–1.148)	0.013
		Sex	0.466 (0.255–0.850)	0.013
		HbA1c	1.364 (1.093–1.701)	0.006
		Non-HDL-C	1.010 (1.001–1.018)	0.029
		HDL-C	1.003 (0.985–1.022)	0.734
		SBP	1.017 (0.999–1.035)	0.067
Diabetes-related mortality	21	Age	1.123 (1.023–1.232)	0.015
		Sex	0.471 (0.188–1.180)	0.108
		HbA1c	0.851 (0.516–1.402)	0.526
		Non-HDL-C	1.019 (1.007–1.031)	<0.001
		HDL-C	1.019 (0.991–1.047)	0.183
		SBP	0.994 (0.966–1.023)	0.691
Total diabetes events (CVE + stroke + sudden death + renal death + diabetic foot + heart failure)	108	Age	1.081 (1.038–1.125)	<0.001
		Sex	0.560 (0.376–0.834)	0.004
		HbA1c	1.149 (0.957–1.378)	0.136
		Non-HDL-C	1.008 (1.002–1.014)	0.005
		HDL-C	1.004 (0.991–1.017)	0.532
		SBP	1.008 (0.996–1.019)	0.215

CVE, cardiovascular event; DBP, diastolic blood pressure; HbA1c, glycated hemoglobin A1c; HDL-C, high-density-lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; MI, myocardial infarction; SBP, systolic blood pressure.

second lowest SBP quartile, showing a J-curve incidence for stroke according to SBP distribution.

Table 3 shows the variables that were significantly associated with incident composite events. Using six variables (age, sex, HbA1c, SBP, non-HDL-C and HDL-C), non-HDL-C was significantly and independently associated with increased risk of stroke, diabetes-related mortality and total events. The adjusted hazard ratios (95% CI) for non-HDL-C were 1.010 (1.001–1.018, $P = 0.029$) for stroke, 1.019 (1.007–1.031, $P < 0.001$) for diabetes-related mortality and 1.008 (1.002–1.017; $P = 0.005$) for total diabetes-related events. When LDL-C was added to the model for total diabetes-related events, non-HDL-C remained significant ($P = 0.007$), whereas LDL-C did not. The significant association between non-HDL-C and total diabetes-related events persisted after the addition of statin treatment to the model ($P = 0.005$).

High HbA1c was also independently associated with incident stroke. Using six variables (age, sex, HbA1c, SBP, LDL-C and HDL-C), LDL-C was the only significant predictor for cardiovascular events ($P = 0.045$).

Discussion

The significance of several risk factors, such as serum lipid abnormalities and increased HbA1c, for stroke and mortality has not been shown clearly in elderly type 2 diabetes patients. The present study used a landmark analysis to show that non-HDL-C, SBP and HbA1c were independent predictors for stroke development during a 6-year follow-up period. A weak, significant association between non-HDL-C and stroke was found in agreement with several prospective studies.[9,10] In the Emerging Risk Factors Collaboration study on 302 430 people from 68 long-term prospective studies, the hazard ratios for ischemic stroke were 1.12 (95%CI:1.04–1.20) for non-HDL-C and 1.02 (95%CI:0.94–1.11) for triglycerides. However, the hazard ratio for ischemic stroke was approximately fourfold weaker than that for coronary heart disease.[9] The Women's Health Study also showed that compared with the lowest non-HDL-C quintile, the highest quintile had multivariate-adjusted hazard ratios for ischemic stroke of 2.45 (95%CI:1.54–3.91), higher than the ratios for HDL-C or LDL-C[10]. These

findings show non-HDL-C might be an important risk factor for stroke, even in elderly diabetes patients.

We also showed that non-HDL-C predicted diabetes-related mortality and total diabetes-related events. The predictive power of non-HDL-C for mortality was stronger in high-risk CHD patients associated with vascular intervention, chronic renal failure or diabetes mellitus.[11–15] In the Pravastatin or Atorvastatin Evaluation and Infection Therapy–Thrombolysis in Myocardial Infarction 22 Investigators (PROVE IT-TIMI 22) trial on acute coronary syndrome patients receiving either pravastatin 40 mg or atorvastatin 80 mg, non-HDL-C, HDL/TC and Apolipoprotein (Apo) B / Apo A1 predicted death or acute coronary events.[11] In the Bypass Angioplasty Revascularization Investigation (BARI) Study, non-HDL-C was a strong and independent predictor of non-fatal MI and angina pectoris at 5 years compared with LDL-C or triglycerides, even after adjustment for potential covariates in patients undergoing angioplasty revascularization or bypass-surgery.[12] Nishizawa *et al.* showed that non-HDL-C in predialysis serum was a significant and independent predictor of cardiovascular mortality in hemodialysis patients.[13] In the European Community funded Concerted Action Programme into the epidemiology and prevention of diabetes (EURODIAB) Prospective Complication Study, non-HDL-C, age, pulse pressure and waist-to-hip ratio were independent predictors for all-cause mortality in type 1 diabetes patients.[14] Herman *et al.* showed the discriminatory power of non-HDL-C was similar to Apo-B in diabetes patients because of the discriminant ratio and unbiased equation of equivalence.[15] Non-HDL-C was also shown to be a better predictor of CVD mortality or acute myocardial infarction (AMI) than LDL-C or TC.[16–18] In the present study, the predictive potential of non-HDL-C was stronger in diabetic patients who had a residual risk beyond LDL-C.

Our finding in the landmark study that patients with a non-HDL-C > 163 mg/dL had a significantly increased incidence of stroke, diabetes-related death and total events compared with those with a non-HDL-C < 122 mg/dL suggests that lipid lowering with a statin is of considerable importance, even in the elderly diabetes patients. This result is in agreement with a report from the Japanese Circulatory Risk in Communities Study[19] showing an association between non-HDL-C and CHD incidence, with the greatest discriminative power at non-HDL-C > 140 mg/dL. In contrast, in the National cholesterol education program-III (NCEP-III) guidelines, the optimal goal of non-HDL-C in CHD patients was <100 mg/dL.[17] The decrease in non-HDL-C after the landmark time in both our intensive and conventional treatment groups might represent an effect of statin treatment, and might also explain the differences in events described here. In the Collaborative Atorvastatin Diabetes Study, treatment decreased both LDL-C and non-HDL-C, leading to prevention of stroke and cardiovascular events.[28] The present results suggest that even in elderly high-risk diabetes patients, a reduction of non-HDL-C using a statin might be beneficial for preventing CVD, stroke and mortality.[29]

The reason for the lack of significant associations between non-HDL-C and cardiovascular events remains unclear. In contrast, LDL-C was a significant predictor of cardiovascular events in the present study. The differences in predictive power of non-HDL-C and LDL-C for CVD and stroke might reflect variability in the vulnerability of cerebral and coronary arteries to lipoproteins. Non-HDL-C in combination with a Apo-B100, remnant lipoproteins and small, dense lipoproteins might be involved in stroke events as a consequence of biological actions beyond LDL-C. Alternatively, the predictive power of non-HDL might be affected by age,[20] sex,[21,22] ethnicity[23] and lifestyle habits.

The present data showed high HbA1c predicted stroke in elderly people with type 2 diabetes. In a Finnish elderly cohort, HbA1c and fasting, and 2-h glucose predicted stroke events.[30] In the Diabetes among Indian Americans (DIA) study, HbA1c and smoking were predictors for stroke in men without previous stroke, whereas therapy with insulin plus oral agents predicted stroke in men with a history of stroke.[31]

In contrast, stroke incidence in the present study was lowest in the second lowest HbA1c quartile (7.3–7.9%), resulting in a J-curve incidence for stroke according to HbA1c distribution. The study on the UK General Practice Database showed low and high HbA1c were both associated with increased large-vessel disease and all-cause mortality in 27 965 diabetic patients,[32] possibly because of hypoglycemia, leading to arrhythmia, cardiovascular autonomic abnormalities, QT prolongation, and induction of prothrombotic and proinflammatory markers. Moderately abnormal glucose control with HbA1c around 7.5% (JDS, 7.1%) with no hypoglycemia during follow up might have a beneficial effect on stroke in high-risk, elderly diabetic patients.

Similarly, the lowest incidence of stroke and total diabetes events in the second lowest SBP quartile (127–136 mmHg), and the lowest incidence of cardiovascular events and total diabetes events in the second lowest LDL-C quartile (99–116 mg/dL) suggest the existence of a J-curve. The J-curve effect of BP lowering has been reconsidered recently, with recommendation that aggressive BP control should be undertaken carefully in high-risk, older diabetes patients.[33,34] A review of observational studies shows a trend where all-cause mortality was highest when TC was lowest.[35] Only a few randomized control trials have not provided evidence of an effect of lipid-lowering treatment on mortality in ≥80 years-of-age patients.[35] Although it is not possible

to disregard the possibility that comorbidities, such as inflammation and malnutrition, are associated with an increased incidence of stroke in the lowest SBP and LDL-C groups, cautious and comprehensive management of BP and LDL-C is also required in older people with diabetes.

The present study had several limitations. First, our cohort comprised high-risk, elderly Japanese subjects, and therefore our results cannot be generalized to other populations. Second, the study population was limited by a relatively small sample size compared with other published reports, and it is likely that the lack of significant relationships between variables reflects inadequate statistical power rather than a true negative result. Finally, the landmark analysis after 1 year of intervention did not completely reflect the effects of temporal changes in the parameters over the entire follow-up period, although some tracking effects of lipid parameters were observed.

In conclusion, this relatively large-scale prospective study showed non-HDL-C was an important predictor for stroke, diabetes-related mortality and total diabetes events in high-risk, elderly type 2 diabetes patients. Non-HDL-C reflected several pathological lipoproteins, including LDL-C, ApoB, triglycerides, remnant lipoproteins and small, dense lipoproteins.[36] Measurement of non-HDL-C might therefore be useful for evaluating the effects of lipid intervention using statin, fibrates and eicosapentaenoic acid in elderly people with diabetes. However, further studies including sophisticated randomized trials are necessary to elucidate the role of non-HDL-C on vascular events.

Acknowledgments

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Conflict of interest

There is no conflict of interest. The Japanese Elderly Diabetes Intervention Trial (J-EDIT) Study Group has not cleared any potential conflicts.

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LETTERS TO THE EDITOR

New dorsiflexion measure device: A simple method to assess fall risks in the elderly

Dear Editor,

Hip fracture is the third leading cause yielding bedridden status in Japan, and more than 80% of hip fractures are reported to be caused by falling. There are a variety of causes for falls in the elderly, and one of the significant causes is the inability to lift their toes when they walk. Here, we show a new device to measure dorsiflexion angle, an instrument that we developed to assess fall risks in the elderly.

Participants were requested to stand up straight and step back until the hip leaned on the wall (Fig. 1a). The fulcrum of the instrument was adjusted to the center of the external malleolus (Fig. 1b). The arm of the instrument was set to stay level, adjusting the branching thin arm placed on the ridge of the dorsum of the foot. Then, participants were asked to dorsiflex as much as possible. The mean time to measure bilateral dorsiflexion angles was within 5 min.

We measured dorsiflexion and Fall Risk Index (FRI),[1,2] including the history of falls within the past year, in 131 women (46–89 years, mean age 78.0 ± 7.1 years) and 88 men (46–93 years, mean age 76.2 ± 8.6 years) who visited the fall prevention clinic in Kyorin University Hospital. The occurrence of falls within the past year was 35.6%. Falls occurred 2.0 ± 0.1 times in fallers within 1 year, and women fell more frequently than men (42.7% *vs* 25.0%, $\chi^2 = 7.2$, $P \leq 0.01$). The average FRI score was 6.7 ± 3.4 in non-fallers and 10.6 ± 3.0 in fallers ($P < 0.0001$). Women showed a higher FRI score than men (8.8 ± 3.6 *vs* 7.0 ± 3.8, $P = 0.003$).

This new device appears promising in detecting the high-risk group of fallers, because the dorsiflexion angle was significantly smaller in fallers than non-fallers (right 9.6 ± 8.4 *vs* 13.7 ± 9.6 degrees, $P = 0.012$; left 10.0 ± 8.5 *vs* 14.2 ± 9.8 degrees, $P = 0.014$). Furthermore, the occurrence of falls was more frequent as the dorsiflexion angle decreased in women ($\chi^2 = 6.4$, $P = 0.042$; Fig. 1c), and half of the subjects, whose dorsiflexion angle was less than 10 degrees, experienced falls within a year.

Previously, it was reported that hip fractures occur more frequently in women than men, even though the incidence rate of falls was comparable until the age of 90 years. This is considered to be a result of the higher prevalence of osteoporosis in women.[3] In contrast, the present study found that women less than 90 years-of-age fell more frequently than men in the Japanese population of this age group. We also found that the FRI score was higher in women than men, as has been shown previously.[4] In addition, dorsiflexion angle was

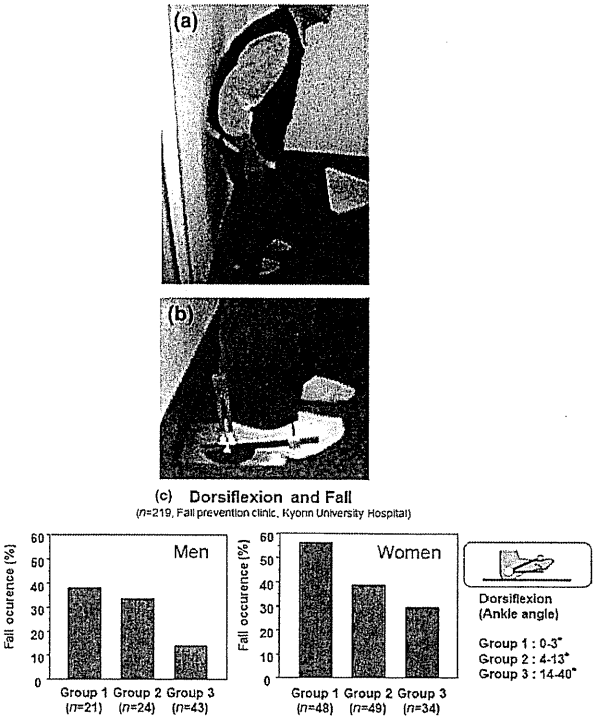

Figure 1 (a,b) How to measure dorsiflexion angle using a dorsiflexion measure device. (c) The relationship between dorsiflexion angle and the occurrence of falls within the past year. In men and women respectively, participants were grouped by tertile according to the dorsiflexion angle.

smaller in women than men (right 10.3 ± 8.4 *vs* 15.2 ± 10.1 degrees, $P = 0.0001$; left 11.0 ± 8.5 *vs* 15.2 ± 10.4 degrees, $P = 0.0013$), and a stepwise increase in the fall occurrence rate according to the level of dorsiflexion angle was evident in women (not significant in men). These results show that less ability to dorsiflex would partly explain the sex difference in the occurrence of falls and ensuing hip fracture.

The new dorsiflexion measure device we report here is easy and less time-consuming to use, and will be sure to help identify a high-risk group of fallers in the elderly.

Disclosure statement

This study was approved by the Ethics Committee of Kyorin University School of Medicine. Accordingly, written informed consent was obtained from all patients. All authors contributed significantly to this work and are

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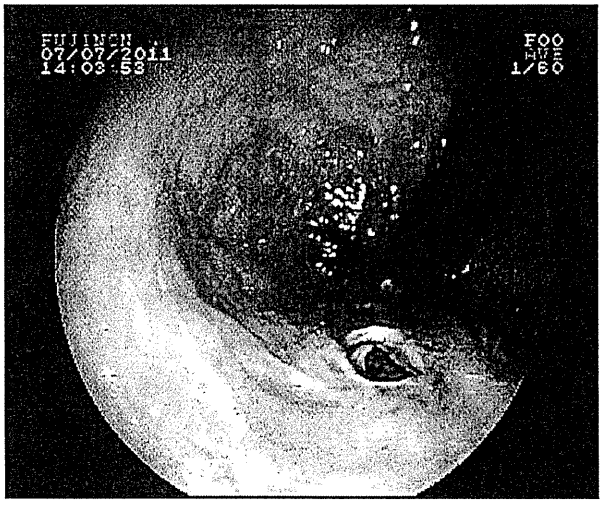
Rectal perforation as a result of self-administration of retrograde enema in an elderly dementia patient

Retrograde cleansing enemas are commonly used in the treatment of chronic constipation, especially in the elderly.[1] We report a case of colorectal perforation as a result of self-administered retrograde water enema in an elderly dementia patient.

A 76-year-old chronically constipated man was admitted to Turkiye Yuksek Ihtisas Hospital Gastroenterology Department in Ankara, Turkey, with a 1-week history of rectal pain. His medical history showed he had the diagnosis of dementia. Clinical examination at that time showed normal vital signs, on examination of the abdomen there was no defense or rebound, digital examination was normal, and respiratory and circulatory system examinations were normal. All laboratory investigations including full blood count, serum amylase, liver function tests, urea and electrolytes were within normal limits. There was no abnormality in abdominal X-ray and abdominal ultrasonography. He was started on a retrograde enema by his family practitioner 7 days earlier for constipation. He described that the pain was precipitated by the first self-administration of the retrograde irrigation enema and the patient denied subsequent use. A preplanned colonoscopy was carried out, and on retroflexion a rectal perforation was detected (Fig. 1). An abdominal computed tomography scan showed perirectal air. Conservative management with intestinal rest and intravenous antibiotics was carried out. The clinical course of the patient was favorable without sepsis or generalized peritonitis. He was discharged home after a 7-day inpatient stay.



Perforation of the rectum and sigmoid colon caused by cleansing enemas, used by chronically constipated patients, has rarely been reported. In the largest series, Paran *et al.* reported that three of 13 patients with rectal perforation as a result of retrograde enema died because of late diagnosis.[2] Gayer *et al.* reported 14 elderly patients (average age 80 years) with rectal perforation as a result of cleansing enema. Surgery was carried out in 10 of 14 patients, and nine of the 14 patients died. Interestingly, in all of these cases the enema was given by paramedic personnel.[3] It is perhaps not so well known that the rectal wall, even in the absence of disease, can be perforated by the tip of a rubber catheter introduced for the purpose of administering a simple cleansing enema.[4] Because of the possible risk of morbidity and mortality, especially in elderly patients in whom the process can be more catastrophic, rectal perforation risk should be kept in mind and administration of rectal cleansing enemas should be carried out gently and carefully by paramedic personnel. Also, the position of the body when inserting the enema tip is important. An enema should be carried out, in principle, with the patient in the left lateral decubitus position.[5]

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RELATIONSHIP BETWEEN TESTOSTERONE AND COGNITIVE FUNCTION IN ELDERLY MEN WITH DEMENTIA

To the Editor: A decrease in sex hormones with aging has been reported to be related to psychosomatic disorders such as late-onset hypogonadism syndrome, frailty, and cognitive impairment in adult men.[1] For example, a community-based cross-sectional study has shown that elderly men with a lower blood concentration of bioavailable testosterone have more-severe impairment of cognitive function.[2] Moreover, a longitudinal study indicated that serum free testosterone (FT) concentration could predict memory performance and cognitive status in elderly men,[3] but it is unknown whether lower testosterone concentration is related to cognitive impairment in individuals with dementia, because the previous studies primarily focused on a healthy community-based population. Also, few studies have addressed the relationship between testosterone and cognitive function in elderly Japanese men.

One recent cross-sectional study showed that total testosterone and FT concentration were associated with activities of daily living (ADLs) in institutionalized elderly men.[4] This study also revealed that a relationship between testosterone and cognitive function could be found even in institutionalized elderly men with physical or neuropsychiatric dysfunction. Thus, whether lower testosterone concentration is related to deterioration of ADL in elderly men with cognitive impairment was longitudinally investigated.

Fifty-two male outpatients attending the Center for Comprehensive Care on Memory Disorders at Kyorin University Hospital were recruited (mean age 77.0 ± 5.5, range 65–87). Participants' clinical backgrounds were hypertension, 48.9%; diabetes mellitus, 12.2%; and dyslipidemia, 38.1%. None had a history of stroke. Comprehensive geriatric assessment was performed based on basic ADLs (Barthel Index),[5] instrumental ADLs (Lawton and Brody IADLs, 0–5 points in men),[6] cognitive function (Mini-Mental State Examination (MMSE)),[7] mood (Geriatric Depression Scale (GDS), 15 items),[8] and vitality (Vitality Index, 10-point scale).[9] This assessment was repeated 1, 2, and 3 years after baseline assessment at the first visit to the clinic. At the first visit, blood was drawn after an overnight fast and FT concentration was measured using radioimmunoassay. FT values ranged from 1.0 to 53.0 pmol/L (mean ± SD 30.4 ± 11.0 pmol/L). Participants were classified into three groups according to tertile according to the baseline FT value (Figure 1), and the parameters from the comprehensive geriatric assessment were compared between groups and visits. Statistical data were analyzed using SPSS version 17.0 (SPSS, Inc., Chicago, IL). One-way analysis of variance (ANOVA) was applied for comparisons between groups, and the Fisher post hoc test was applied when significant ($P < .05$). One-way repeated ANOVA was used for comparisons between baseline and the 1-, 2-, and 3-year visits, and the Fisher post hoc test was applied when significant ($P < .05$).

There were no significant differences between groups in age (high, 75.3; middle, 76.6; low, 79.0), basic ADLs (high, 96.9; middle, 99.1; low, 95.3 points), MMSE (high, 23.2; middle, 25.1; low, 23.1 points), GDS-15 (high, 5.1; middle, 4.1; low, 4.6 points), and Vitality Index (high, 9.1; middle, 9.1; low, 8.8 points) at baseline, whereas IADLs tended to be lower (high, 4.1; middle, 4.1; low, 3.4 points, $P = .06$) in the low FT tertile group than in the other groups.

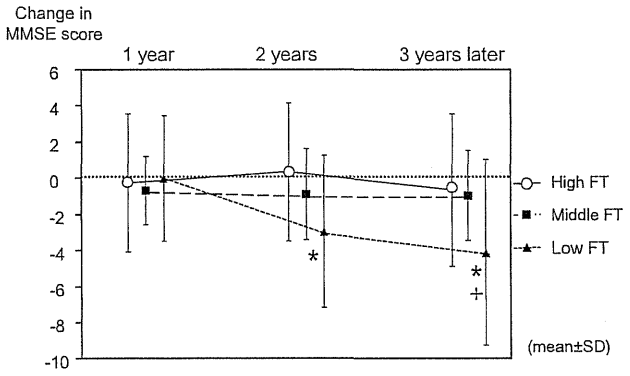

Figure 1. Change in Mini-Mental State Examination (MMSE) score according to tertile of serum free testosterone (FT) level in men. FT tertile: high, >36.1 pmol/L, n = 17; middle, 29.1–35.4 pmol/L, n = 17; low, <28.8 pmol/L, n = 18. *$P < 0.05$ vs highest FT group, +$P < 0.05$ vs middle FT group.

At the 1-year visit, there was no difference in change in MMSE score from baseline between the groups, although the decrease in MMSE score was larger in the low FT tertile group than in the middle and high tertile groups at the 2- and 3-year visits (Figure 1). Also, MMSE scores were lower in the low FT tertile group at the 2- ($P = .009$) and 3-year ($P < 0.001$) visits than at baseline, whereas they were not lower in the middle and high tertile groups. In contrast, there was no such trend in basic ADLs, IADLs, GDS scores, and Vitality Index.

Multiple regression analysis was performed with a decrease in MMSE score as a dependent variable and age; ADLs; body mass index; presence of hypertension, diabetes mellitus, or hyperlipidemia; and FT concentration as independent variables to consider factors affecting cognitive impairment, according to a previous report.[4] Blood FT concentration was found to be an independent predictor of decrease in MMSE score at the 3-year visit ($\beta = 0.492$, $P = .02$).

A number of investigations support the biological plausibility of a protective effect of testosterone against cognitive dysfunction. The present findings from memory clinic outpatients are consistent with previous findings observed in elderly community-based men, showing a relationship between FT concentration and cognitive performance.[3] Furthermore, the present findings indicate that a lower FT concentration could lead to a faster decline in cognitive function in elderly Japanese men who already show cognitive impairment. This study provides fundamental data for the future study of hormone replacement therapy for cognitive decline in elderly adults with low FT.

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BASELINE INSTRUMENTAL ACTIVITIES OF DAILY LIVING AND INCIDENT DEMENTIA

To the Editor: Sikkes et al.[1] have written an important paper showing that individuals without dementia with impairment in at least one of nine instrumental activities of daily living (IADLs) at baseline had a significantly higher incidence of dementia at 12 months (24.4%) than individuals without IADL impairment at baseline (16.7%) (P = .04). Their 531 participants who were followed for 12 months were relatively young (mean age 69.6), so it was decided to duplicate their study from prospective data from the Wyong Hospital Memory Clinic, 100 km north of Sydney. From 415 individuals attending a memory clinic, community-dwelling individuals aged 60 and older who were free of dementia at baseline and had a Mini-Mental State Examination score (MMSE[2]) of 25 to 30 and a follow-up MMSE and Montreal Cognitive Assessment (MoCA), range 0 (worst) to 30 (best)[3] at 12 months were selected in a consensus conference of a geriatrician (PJ) and a clinical nurse consultant (EH). Each individual's family rated IADLs on the Nottingham scale,[4] which ranged from 0 (worst) to 22 (best). Twenty-two of 82 (27%) converted to dementia at 12 months, compared with Sikkes conversion rate of 20.8% at 24 months—the most likely reason for this difference was that mean age (79.1) was 9.5 years older than theirs (69.6). Stats Direct Version 2.7.8b (StatsDirect Ltd, Altrincham, UK) from November 2011 was used to compare converters and nonconverters. Mean age of the 22 converters at baseline was significantly higher that that of the 60 nonconverters (82.0 ± 5.8 vs 78.0 ± 6.8, P < .01), mean IADL score at baseline was significantly lower (13.1 ± 5.3 vs 16.1 ± 4.0, P = .0236), MMSE score at baseline was by definition lower (25.6 ± 0.73 vs 27.5 ± 1.50, P < .001), and MoCA score at baseline was lower (19.2 ± 3.5 vs 22.8 ± 3.9, P < .001). At 12 months, IADL (11.4 ± 5.6 vs 15.4 ± 4.5, P = .004), MMSE score (21.6 ± 4.5 vs 27.4 ± 1.6, P < .001), MoCA (16.8 ± 3.6 vs 22.8 ± 4.2, P < .001) remained significantly lower in converters.

The Nottingham IADL covers seven of the nine IADL items that Sikkes used, excluding medications and finances. Women are more likely than men to perform five of the Nottingham IADL items unless the men live alone with no home care services: cleaning the kitchen, making a hot snack, washing small items of clothing, doing a full clothes wash, and doing housework.

Although the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, criteria for dementia include a decline in social and occupational function, there is a surprising lack of research into IADLs as a predictor of incident dementia. This is an important topic for future research and ongoing studies are being conducted in three cohorts: Wyong Memory Clinic; general medical inpatients with delirium or subsyndromal delirium—a prospective randomized controlled trial, Central Coast Australia Delirium Intervention Study; and PhD study, PR DEFEAT DELIRIUM, in outpatients at high risk for incident delirium. One study[5] with 255 community-dwelling individuals attending a memory clinic who were followed an average of 13 months has been published. The 11.4% of participants with antithyroid antibodies had similar outcomes at 12 months with respect to IADLs, decline in IADLs, MMSE and MoCA scores, and transfer to residential care.

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Original Study

Priorities of Health Care Outcomes for the Elderly

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Keyword:
Geriatrics
quality of care
health care policy

A B S T R A C T

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.

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 2030[2] 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 800 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*
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	800	384 (48)
Adult day care staff	2010, Sep	By post for each facility	400 facilities (2 per facility)	204†
Health care recipients				
Adult day care participants	2010, Sep	By post for each facility	400 facilities (5–10 per facility)	795†
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)

*Responses with missing items or invalid answers were excluded.
†For 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 Order	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	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	5.32	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	6.04	5.87–6.20	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	8.69	8.56–8.82	Improvement of social functioning	8.20	7.95–8.44	Efficient use of resources	7.43	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	Community-Dwelling Older Adults (n = 2637)			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	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	Effective treatment of illness	2.79	2.58–3.00	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	Improvement of physical function	4.06	3.84–4.29	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	Improvement of quality of life	5.46	5.19–5.73	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	Reduction of carer burden	5.52	5.28–5.77	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	Improvement of mental health	5.81	5.58–6.04	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	Maintaining high level of activity	5.97	5.66–6.28	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	Resolution of assessed problems	6.17	5.93–6.42	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	Patient satisfaction with care	6.72	6.47–6.96	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	7.46	7.24–7.69	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	8.90–9.45	Improvement of social functioning	8.42	8.18–8.65	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	9.39	9.16–9.62	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	10.22	10.00–10.44	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 carer burden" were given high priority, whereas "improvement 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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介護施設，一般病院での認知症対応に明日から役立つ

症状別
チャート
図解付き!

BPSD
初期対応ガイドライン

編 集：服部　英幸　独立行政法人国立長寿医療研究センター　行動・心理療法部長
著 者：精神症状・行動異常(BPSD)を示す
認知症患者の初期対応の指針作成研究班

ehavioral and
sychological
ymptoms of
ementia

ライフ・サイエンス

介護施設と専門医療機関の地域連携

現状と課題

介護保険サービス事業所において，BPSDに関して受け入れ可能な状態に関する調査を行った（図4－1）[1]．その結果，「ほかの利用者への暴力」，「性的逸脱行為」，「物を壊す」の順で受け入れが困難であり，次いで「事業所スタッフへの暴力」，「夜間大声を出す」，「昼間大声を出す」，「夜間活発に活動する」，「自分で立ち上がり転倒する」と続いた．では，これらの行為がある場合には，専門医療機関が対応することで改善が見込めるかといえば，そうともいえない．しかし，この状態で在宅での生活は極めて困難であり，介護保険サービス事業所が対応困難であるとなれば，治療は困難であっても「最後の砦」として専門医療機関が対応せざるを得ない場合もある．また，これらの症状があって自宅や介護保険施設から専門医療機関に入院した場合，治療により症状が改善しなければ，自宅や元の介護保険施設に戻ることは難しく，入院が長期化する一因となっている．治療によって症状が完全に改善したとしても，ADLが低下した場合には介護負担が増え，自宅での対応が困難となったり，誤嚥の危険性が増えて医学的な対応が必要となったり，転倒しやすくなることで，違った意味で介護保険サービス事業所での対応が困難

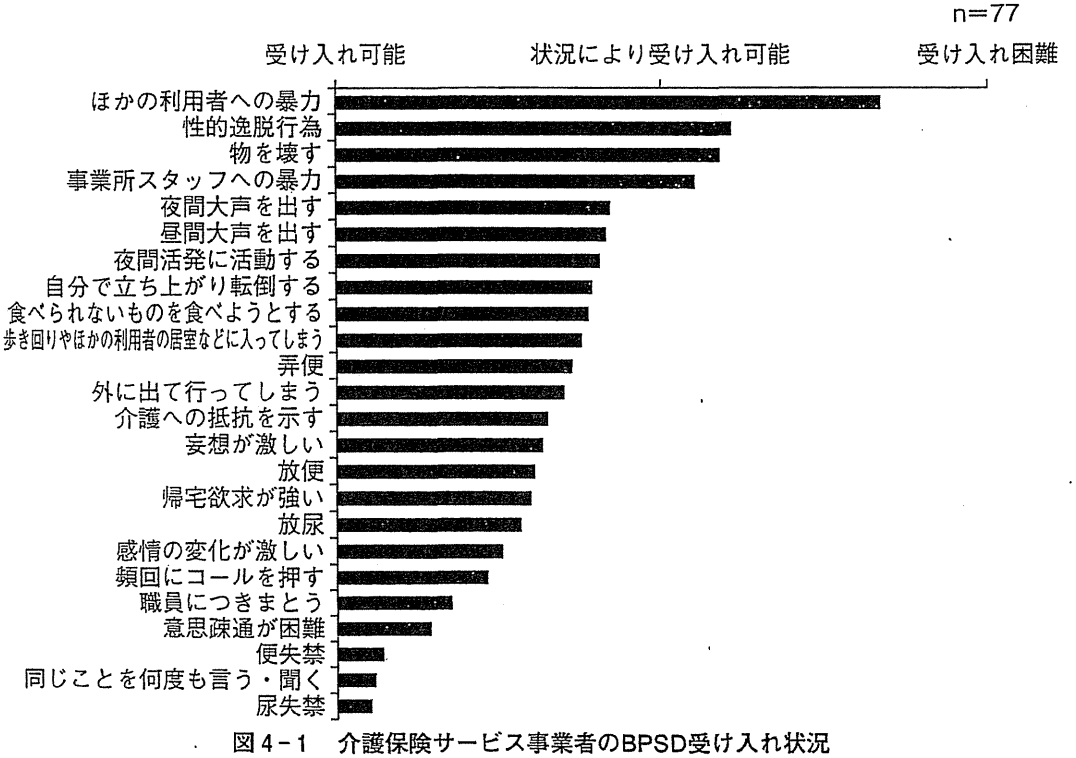

図4－1　介護保険サービス事業者のBPSD受け入れ状況

となる場合もある．また，例えば「自分で立ち上がり転倒する」という症状などについては，医学的に治療が極めて困難であるが，介護保険施設で「見守り」により対応することも難しいため，専門医療機関からの退院が困難である．

連携を進めるために

専門医療機関における長期間の入院を避けるために，在宅であれ介護保険施設入所中であれ，上記の症状が出現した際には，程度や頻度が軽度の初期の時点で，あるいは上記の症状が出現することを予測して，介護保険サービス事業所と専門医療機関が連携して適切な対応を行い，できるだけ，在宅や介護保険施設といった，そのときの居場所において解決することが最も望ましい．そのためには，医療・介護職種が集まり症例検討を行う多職種連携協議会の開催や，本書などの対応方法の周知などを通じて，BPSDへの対応方法のレベルアップと均てん化を図ることや連携ツールなどを用いた情報共有などが必要と考えられる(図4-2)．

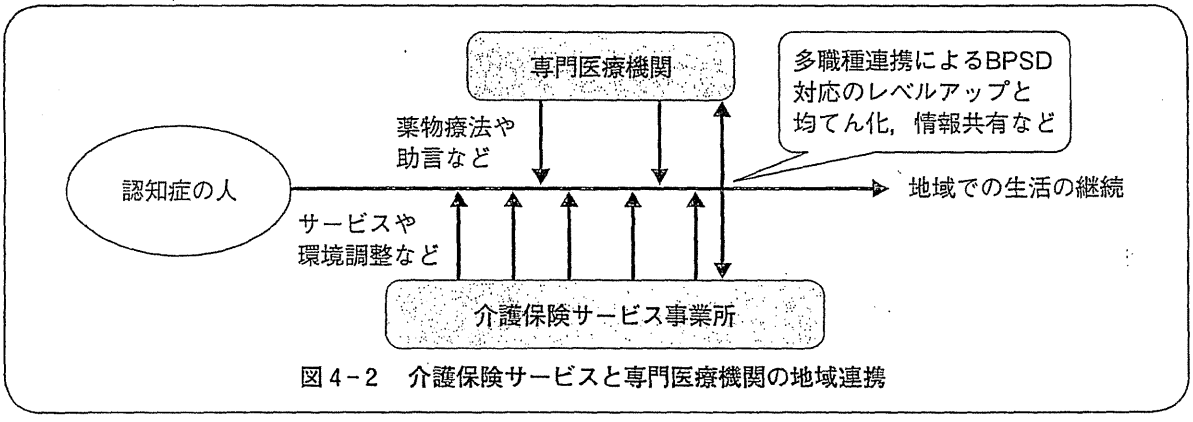

図4-2　介護保険サービスと専門医療機関の地域連携

介護保険施設から医療機関への入院の絶対的な適応は，身体合併症により入院での治療を必要とする場合である．現実的には，専門医療機関や一般医療機関において入院治療が行われているが，その選択に関しては次稿に述べる．

(武田　章敬)

一般病院と認知症治療が可能な医療機関との地域連携

現状と課題

BPSDと身体合併症の対応は，その地域の資源の状況により大きく異なる．救命救急センターを有し，精神病床も有するような総合病院であれば，BPSDと身体合併症に対して理想的な医療が提供できる可能性が高い．しかし，そのような医療機関はほとんどない．実際には，身体疾患の治療には優れているが，BPSDへの対応力は乏しい医療機関と，BPSDへの対応には秀でているが，身体合併症に対する高度な治療は困難な医療機関がある地域が多いと考えられる．そこでこのような地域における連携について，BPSDの対応困難度と身体疾患の重篤度により表4－1に示すような4群に分けて述べる．

表4－1　BPSD対応困難度と身体疾患の重篤度

		BPSDの対応困難度	
		低	高
身体疾患の重篤度	低	A	C
	高	B	D

A．BPSDの対応困難度および身体疾患の重篤度ともに低い場合

このような場合は，外来診療で対応が可能なため問題となることはなく，特に連携も必要とされない．

B．BPSDの対応困難度は低いが，身体疾患の重篤度が高い場合

身体疾患の治療に優れた医療機関（多くの一般医療機関）が対応すべきである．認知症を理由に，急性期身体疾患の受け入れを制限することがないよう，一般医療機関において医療スタッフに対する認知症に関する知識や対応方法の普及が重要である．この群には精神科病院に入院中の認知症の人で，BPSDは安定していて重篤な身体疾患を発症した場合も含まれる．このような場合に精神科病院から一般医療機関への転院が円滑に行われるためには普段からの情報交換と意思疎通が重要である．

C．BPSDの対応困難度は高いが，身体疾患の重篤度が低い場合

この場合，BPSDへの対応に秀でた医療機関（多くの精神科病院）が対応すべきである．この群には一般医療機関に入院中の認知症の人で，重篤な身体疾患の治療が終了したが，BPSDのために自宅や施設に退院できない場合が含まれる．精神科病院における身体疾患への対応力が向上しつつあるといわれるが，対応可能な身体疾患や状態に関しては，医療機関による差が大きいため，一般医療機関からの転院に際しては，精神科病院の身体疾患対応力に関する情報が重要となる．

D. BPSDの対応困難度および身体疾患の重篤度ともに高い場合

最も対応が難しいのが，このような場合である．ケースバイケースではあるが，生命に直結する身体疾患の場合は，身体疾患への対応に優れた医療機関が治療を担当するのが妥当と考えられる．身体疾患治療後は，上記Cの場合と同様となる．逆にBPSDが激しく，身体疾患の治療に時間的な余裕があると判断される場合には，まずはBPSDの対応に優れた医療機関でBPSDの治療を行い，その後，身体疾患への対応に優れた医療機関で，身体合併症の治療を行うという方法もあり得る．このような連携による対応が行われるためには，医療機関におけるBPSDと身体疾患の状態の見極めと日頃から医療機関の間の情報交換が必要である．

連携を進めるために

これらの連携が円滑に行われるためには，個々の医療機関のBPSDと身体合併症への対応力を明確にし，関係する者すべて(特に連携に携わる者)が情報を共有している必要がある．そのためにも地域における医療機関の関係者が集まり，症例検討などを行う連絡協議会の設置が有効と考えられる．また，認知症の人がその地域における医療機関のBPSD・身体疾患の対応力の間で行き先に困ることがないよう，各医療機関においてBPSDと身体合併症への対応力を向上させる努力が必要である．

(武田　章敬)