Department of Surgery

Nonagenarians and trauma: an increasingly common combination.

Dale A. Dangleben MD
Lehigh Valley Health Network, Dale_A.Dangleben@lvhn.org

Ali Salim MD, FACS

David Grossman

Rovinder S. Sandhu MD
Lehigh Valley Health Network, Rovinder_S.Sandhu@lvhn.org

Michael D. Pasquale MD, FACS, FCCM
Lehigh Valley Health Network, michael.pasquale@lvhn.org

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IMPROVING OSTEOPOROSIS MANAGEMENT IN AT-RISK FRACTURE CLINIC PATIENTS

To the Editor: We would like to draw your attention to an important but preventable bone health and healthcare delivery dilemma that we believe can be improved with a simple, low-cost intervention. In 1982, researchers at the Mayo Clinic reported that history of a previous low-trauma or fragility fracture was associated with a 1.3 relative risk of subsequent hip fracture[1] and this was likely an underestimation of the risk.[2-4] In response, national guidelines in the United States and Canada emphasized that low-trauma fractures should not merely be treated orthopedically,[5] but should also prompt a family physician evaluation to assess osteoporosis risk and manage it appropriately. Despite this ideal opportunity for secondary prevention of osteoporosis, numerous publications have highlighted the continual low investigation (~20%) rates after a sentinel fracture.[6-9] Even fewer patients received adequate therapy, highlighting the "knowledge-care gap." In a review of the largest series of wrist fractures to date, only 23% of "at risk" patients were treated for osteoporosis,[9] whereas one study[10] reported from a retrospective review of a large database that only 9.8% of the women and 2.9% of the men were screened for osteoporosis. Yet another study[11] suggests that screening for these "sentinel fractures" would reduce hip fractures 9%. Despite increasing awareness of this problem, few controlled studies have tested interventions to improve diagnosis and management.

There have been recent publications that have tested interventions aimed at changing physician practice patterns.[12] Recently, a simple four-part intervention using a diagnosis/management questionnaire and counting "osteoporosis best practices" offered by the family physician to patients with a wrist fragility fracture was tested.[12] Participants who volunteered for this study were allocated into one of two groups (intervention or control). Each participant in the intervention group received an information sheet explaining that she or he had suffered a low-trauma fracture diagnostic of osteoporosis, a request to take a letter from the orthopedic surgeon who was managing the fracture to show to the family physician alerting her or him to the recent low-trauma fracture, and a follow-up telephone call at 4 to 6 weeks to remind the participant to visit her or his family physician. The fourth element of the intervention was a facsimile from the orthopedic surgeon to the family physician specifically requesting general practitioner assessment and management of osteoporosis. In the control group, participants were not given any additional information on risk of osteoporosis by the researchers. Control group patients received usual care, defined as treatment for the fracture by the hospital staff and routine notification to the family physician of the fracture and any follow-up plans. Both groups were telephoned at 6 months to admin-ister the diagnosis management questionnaire. This questionnaire was developed specifically to ascertain the osteoporosis investigation rate and osteoporosis "best practices" as recommended by the 2002 Osteoporosis Consensus.[5] The original distal radius fracture "WristWatch" study was expanded to include humeral fractures. Sixty-two participants were enrolled in this study (36 control and 26 intervention). (See Table 1 for participant characteristics.) In this multicomponent quality-improvement intervention of a patient-education and physician-alerting system, 73% of participants in the intervention group were investigated for osteoporosis. The absolute difference was 54%, and the relative risk was 3.8 (95% confidence interval = 1.9–7.6) Once again, investigation for osteoporosis was significantly higher in the intervention group ($P < .001$).

It is tempting to speculate that there might be at least two ways that this study could be translated into clinical practice. Standing orders contained within the orthopedic surgeon's follow-up note to the family physician would ensure that patients and family physicians instigate optimum osteoporosis care. Alternatively, a healthcare worker could liaise between potential patients at risk and the healthcare services to initiate the care pathway (fracture liaison service). One group of providers[13] tested such a model in their clinical practice, and a designated team member performed case finding and initiated appropriate investigation. This can be an effective service for larger facilities with adequate funding. Although it can be seen as the criterion standard, there are people and regions who are not able to access such services. Although the current study showed that family physicians investigated at-risk patients for osteoporosis when an orthopedic surgeon prompted them to do so, future studies could investigate the use of clinical pathways that use the expertise of other health professionals (e.g., physical therapist, nurse) at the fracture clinic or emergency

Table 1. Characteristics of the Participants

Characteristic	Intervention (n = 26)	Control (n = 36)
Age, mean ± SD	65.5 ± 12.2	69.6 ± 10.9
Sex, n		
Women	23	26
Men	3	10
Height, m, mean ± SD	1.68 ± 0.06	1.66 ± 0.09
Weight, kg, mean ± SD	73.75 ± 16.6	72.89 ± 16.19
Body mass index, mean ± SD	25.90 ± 5.50	25.97 ± 4.67
Fracture, n		
Radius	14	28
Humerus	12	8

SD = standard deviation.

department level to systematically initiate family physician follow-up regarding osteoporosis.

Osteoporosis is a serious medical condition and at-risk patients need to be identified. A fragility fracture is a sentinel event and can be used to effectively initiate investigation. A simple intervention can influence physician behaviors. Larger studies should further refine this intervention by testing the effectiveness of its individual components.

Maureen C. Ashe, BScPT, MSc, CHT
Heather A. McKay, PhD
Faculty of Medicine
Department of Orthopedics
Department of Family Practice
Division of Orthopedic Engineering Research

Patricia Janssen, PhD
Department of Health Care and Epidemiology
University of British Columbia
Vancouver, BC

Pierre Guy, MD, MBA
Department of Orthopaedics
University of British Columbia
Orthopaedic Trauma Service
Vancouver General Hospital and Health Science Center
Vancouver, BC

Karim M. Khan, MD, PhD
Department of Family Practice
University of British Columbia
British Columbia Women's and Children's Hospital
Vancouver, BC

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LONG-TERM PRACTICE OF JAQUES-DALCROZE EURHYTHMICS PREVENTS AGE-RELATED INCREASE OF GAIT VARIABILITY UNDER A DUAL TASK

To the Editor: Recently, gait of healthy young and older adults was compared, and it was found that an added task of counting backward interfered with gait regularity in the older adults but not the young adults.[1] It was suggested that the dual task–related increase in stride-to-stride variability in older adults corresponded to higher needs of attention and thus more cortical involvement for walking in this population. Therefore, a dual task–dependent increase in gait variability appears to be a marker for age-related decline in gait control.[1] High stride-to-stride variability[2] and gait changes under dual-task[3] are clinically relevant as dependable and potent predictors of falls in community-dwelling older adults. No prior research exists as to the positive effects of specific long-term interventions on age-related increases in gait variability under dual-task conditions. Jaques-Dalcroze eurhythmics, a music movement therapy, developed by Emile Jaques-Dalcroze (1865–1950) in Geneva in the early 20th century,[4] consists of varied multitask exercises, mostly performed to the rhythm of improvised piano music. This method is used in music education of children and adolescents all over the world.[4] The aim of this study was to compare stride-to-stride variations in stride time under a dual-task condition of healthy community-dwelling older adults with long-term practice of Jaques-Dalcroze eurhythmics and healthy older adults of similar age without any particular exercise routine.

Ten older women (mean age ± standard deviation = 79.6 ± 4.9) with regular practice of Jaques-Dalcroze eurhythmics for at least 40 years (once a week, during at least 26 weeks per year) and 11 healthy older women (mean age 77.7 ± 4.1) with no particular exercise routine volunteered to participate. All older adults met the following inclusion criteria: aged 70 or older, Mini-Mental State Examination score of 24 out of 30, able to walk without a walking aid, and no major neurological or orthopedic problems. The participants were asked to perform two different tasks: walking as a single task and walking while counting backward from 50, out loud. Each subject completed one trial for both of the walking conditions on a 12-m walkway in a well-lit environment, at her own speed, and wearing her own footwear. The human investigation committee approved the project, and written informed consent was obtained before testing. Stride time (ms) was determined during steady-state walking with a spatiotemporal gait analysis system (GAITRite),[5] a walkway integrated pressure-sensitive surface of 7.32 m that was related to a portable computer. Stride time was chosen as the main outcome gait parameter, given published evidence for its strong relationship to falls.[2] Stride-to-stride variability of stride time was determined by calculating the coefficient of variation ((standard deviation/mean) × 100). The Wilcoxon rank-sum test was used to compare coefficients of variation

Table 1. Mean Values and Coefficients of Variation of Stride Time under Both Single- and Dual-Task Walking Conditions Among Dalcroze Group (n = 10; Mean Age = 79.6 ± 4.9) and Control Group of Healthy Older Adults (n = 11; Mean Age = 77.7 ± 4.1) with No Particular Exercise Routine

Group	Walking Alone	Walking While Backward Counting	P-value*
	Mean ± Standard Deviation		
Dalcroze (regular practice of eurhythmics for ≥ 40 years)			
Mean, ms	1,050.1 ± 4.9	1,070.5 ± 8.6	.45
Coefficient of variation, %	2.1 ± 1.4	2.7 ± 1.9	.14
Control (healthy older adults with no particular exercise routine)			
Mean, ms	1,146.1 ± 15.1	1,235.8 ± 19.9	.01
Coefficient of variation, %	3.9 ± 0.9	11.9 ± 9.9	.02

*Based on Wilcoxon rank-sum test.

between the two walking conditions. $P < .05$ was considered statistically significant.

No significant increase in stride time variability was found in the Dalcroze group with the interfering task of backward counting. In contrast, the healthy older subjects in the control group significantly increased their gait variability under the dual task (Table 1).

These results represent, to the best of our knowledge, the first report demonstrating that a long-term exercise intervention such as Jaques-Dalcroze eurhythmics can prevent age-related increase in stride-to-stride variability under a dual task. The method of Jaques-Dalcroze eurhythmics is considered to be music movement therapy and is largely incorporated into children's and adolescents' music education all over the world.[4] The primarily group-based activities of Jaques-Dalcroze eurhythmics rely on imagination, musicality, and social integration, as well as on movement coordination, memory, and attention. The difficulty of exercises is gradually increased over time. While walking with the rhythm of improvised piano music, the teacher asks Dalcroze practitioners to simultaneously perform specific movements with the upper body. Participants are required to maintain a high level of attention because they may be asked to make sudden modifications in movement as appropriate in response to verbal instruction or rhythmic changes in the piano music. High expertise in the use of attentional skills required to multitask while walking to changing rhythmic patterns may result in highly automated gait patterns, minimizing the effect of backward counting on gait regularity in the studied older Dalcroze practitioners. The ability to couple two rhythmic tasks such as walking and backward counting might be another explanation for the low gait variability found in the Dalcroze group.[6] Less-automated gait patterns with increased needs of attention for walking and the inability to allocate attention properly between walking and backward counting might be the reason for increased gait variability seen in the control group of healthy older adults with no particular exercise routine.[1]

These results are the first to show that long-term practice of Jaques-Dalcroze eurhythmics was able to favorably affect dual-task related stride-to-stride variability of older adults. Further research is needed to study effects of this intervention on gait variability in older adults without previous experience of Jaques-Dalcroze eurhythmics and explore its potential role in fall prevention among older adults.

Reto W. Kressig, MD
Gilles Allali, MD
Olivier Beauchet, MD, MS
Department of Rehabilitation and Geriatrics
Geneva University Hospitals
Geneva, Switzerland

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NONAGENARIANS AND TRAUMA: AN INCREASINGLY COMMON COMBINATION

To the Editor: The current U.S. population aged 85 and older is larger than 4.6 million. The Population Projections Program published by the U.S. Census Bureau of 2000[1] showed that, from 2002 to 2010, the population aged 90 and older should increase from 1,724 to 2,310 ($\times 10^3$), representing a 33% increase. Many studies have examined trauma in people aged 65 and older.[2–6] To our knowledge, no study has looked at trauma specifically in people aged 90 and older. The effect on trauma care will become obvious as the population grows. Trauma remains the fifth-leading cause of death in the geriatric population, and older people constitute one-third of all trauma-related hospital expenses. We decided to evaluate trauma in nonagenarians at a level I trauma center.

All the charts of patients aged 90 and older who were admitted to the level I trauma center from January 1998 to December 2002 were reviewed. Of the 7,966 patients admitted to the trauma center, 189 (2.4%) were 90 and older. There were 56 men and 133 women (mean age 93). Falls (n = 173, 92%) accounted for the most common mechanism of injury. There were six patients (five men, one woman) who were drivers involved in motor vehicle collisions. The other mechanisms involved passengers in motor vehicle collisions, pedestrian struck, and burns. The mean intensive care unit length of stay was 1.3 days, and the mean hospital length of stay was 4.8 days. Eighty-eight (46.5%) patients came from home, and 101 (53.5%) came from nursing homes (NHs). Of those who came from home, 44.3% went to a skilled nursing facility (SNF), 32.0% returned home, 12.5% went to a NH, 9% died, and 2% went to hospice. Of those who came from a NH, 66% went back to the NH, 29% went to SNF, and 4% died. The mean injury severity score was 8.95. Seventy-seven patients were on antiplatelet-anticoagulation. Only one patient on anticoagulation died. One hundred forty-two patients (75%) had an advance directive on the chart. There were 75 recidivists (40%), and the overall mortality rate was 6.8%.

The majority of the injuries were orthopedic (n = 83). Humerus, pelvis, and femur fractures were the most frequent injuries. There were also a significant number of head injuries (n = 45), with subdural hematomas being the most common, followed by subarachnoid hemorrhage. The abdominal injuries were few but significant. There were two splenic lacerations and two retroperitoneal hemorrhages. Twenty-one cervical spine injuries were documented, with one resulting in quadriplegia.

All of the subjects who were on aspirin, Plavix, coumadin, or combinations of the three were reviewed. This group consisted of 77 patients (41%), 14 (7.5%) of whom were on coumadin at the time of admission. The primary indication for anticoagulation was atrial fibrillation. Two patients had remote histories of venous thromboembolism. The average international normalized ratio (INR) was 2.6. The mean injury severity score (ISS) in this group was 6.0, and there was one death, with an ISS of 17.

Of the 189 patients in the study group, 40% (n = 75) had multiple admissions during the same study period. All of the subsequent admissions were due to falls. Falling is the major source of trauma recidivism in older people.

Despite the extent of the injuries, a significant portion of subjects was discharged back to their prehospital setting. Anticoagulation did not appear to have an effect on mortality. These findings are in agreement with other studies. In 2000, one study[7] concluded that elderly trauma patients who had been taking warfarin before injury did not have greater morbidity and mortality than elderly trauma patients not taking warfarin. These patients should be treated for underlying atrial fibrillation and venous thromboembolism. Orthopedic and head injuries are most predominant. ISS were very low, and overall mortality was low (6.8%). Recidivism was significant and was exclusively due to falls.

A focus on injury prevention and education aimed at the different residential facilities is vital in providing optimal trauma care for older people. As the population ages, the number of elderly trauma patients will increase as well. Knowledge of the patterns of injuries and outcomes is essential. Having an aggressive protocol for management will facilitate care. Based on this study, a protocol for the patient aged 90 and older has been defined (Appendix 1). Using these resources defined in the protocol will make a difference in the care of the patient, the involvement of family, and the residential facility.

Dale Dangleben, MD
Ali Salim, MD
David Grossman, MD
Rovinder Sandhu, MD
Michael D. Pasquale, MD, FACS
Lehigh Valley Hospital
Allentown, PA

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Appendix 1. Fall from Standing Protocol, Aged 90 and Older

1)   During primary and initial evaluation the following information should be obtained:
   A) Advanced directives
   B) Any illnesses
   C) Any previous trauma
   D) Medical doctor
   E) Use of medications, especially warfarin
   By obtaining this information ASAP it may save the patient the expenditure of multiple tests as well as a possible admission to the hospital.

2)   Obtain the following initial studies to investigate the cause of the fall and to further work up any possible injuries obtained from the fall.
   A) CXR

B) EKG
C) Pelvis x-rays
D) Laboratory tests
   1) Accu-check in the ED
   2) CBC, Chem 7, Coags, and MIP

3)   During secondary survey, the following diagnostic studies can be performed to exclude any injury sustained
      from the fall.
      A) If the patient is on wafarin and had a (+) LOC or any decrease in GCS, a CT of the head and the
         abdomen/pelvis should be obtained.
      B) If the C-spine is unable to be cleared clinically, a CT of the C-spine should be obtained.
      C) If the T & L spine area is tender or this area is unable to be examined, T & L spine x-rays should be obtained.

4)   If the patient has an injury that was found during the secondary survey with the diagnostic workup, the patient warrants a
      trauma consult.
      If the patient has not sustained any injuries, the patient then warrants a medicine consult.
☐   *At the time of consult, it is highly recommended that we make every effort to contact or consult the patient's
   primary care physician if this has not already been done.*

ASAP = as soon as possible; CXR = chest x-ray; EKG = electrocardiogram; ED = emergency department; CBC = complete blood count; Coags = PT, PTT, INR
MIP = myocardial ischemia profile; + = positive; LOC = loss of consciousness; GCS = Glasgow Coma Scale; CT = computed tomography; C-spine = cervical spine;
T = thoracic; L = lumbar.

TIAPRIDE MAY ACCELERATE LUNG CANCER IN OLDER PEOPLE: A CASE REPORT

To the Editor: Tiapride is a selective dopamine D_2 receptor antagonist that has been used widely in the clinic for the treatment of agitation, aggressiveness, anxiety, and sleep disorder in elderly patients.[1] Dopamine D_2 receptors are distributed not only in the central nervous system, but also in peripheries such as vascular endothelial cells and lymphocytes.[2] Recently, it was reported that peripheral endogenous neurotransmitter dopamine has an inhibitory role on malignant tumor growth by acting on dopamine D_2 receptor on endothelial cells.[3] Moreover, the depletion of dopamine was correlated with tumor growth in patients with gastric cancer, and dopamine supplementation inhibited growth of gastric cancer.[4] These results suggest that blockade of dopamine D_2 receptor may have an adverse effect on malignancy process. Here, a case of spontaneous regression of lung cancer that occurred after the cessation of tiapride is reported.

An 88-year-old man had diagnoses of diffuse brain atrophy due to cerebral atherosclerosis and senile dementia accompanied by delirium on July 1999 and had been receiving tiapride, a neuroleptic that blocks dopamine receptors, and nicergoline, an ergot alkaloids derivative that is believed to ameliorate cerebral circulation and metabolism, for the treatment of agitation and vascular dementia, respectively. He was a current smoker with a history of smoking two packages of cigarettes per day for 50 years. Except for psychiatric symptoms, he was fit and well. A routine chest x-ray showed a right hilar mass with atelectasis on March 2000 (Figure 1A). Computed tomography of the chest revealed a 3-cm mass in the right upper lobe and consolidation (Figure 1C). Sputum cytology revealed squamous cell carcinoma. No treatment for this lung cancer was undertaken. The physician in charge stopped tiapride because the family wanted the patient to express himself freely until the end, although he continued to prescribe nicergoline to keep the cognitive function of the patient.

After diagnosis of malignancy, he received chest x-ray monthly. The patient did not know about his disease and
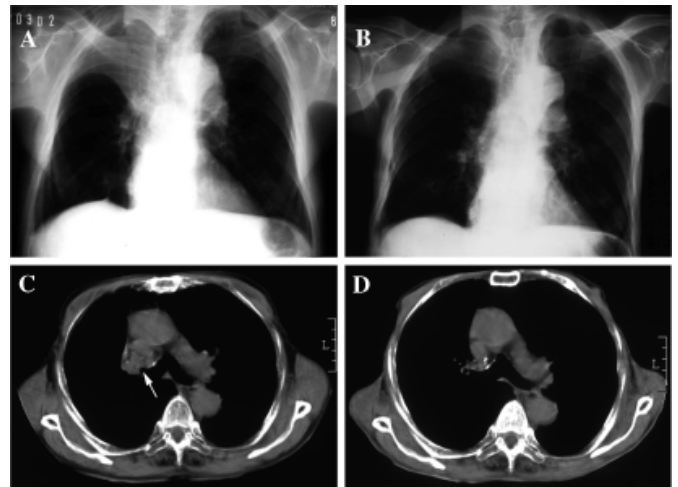
Figure 1. A. Chest x-ray on March 2000, showing right upper lobe atelectasis. C. Computed axial tomogram of the upper portion of the chest on March 2000, showing 3-cm mass (arrow) in the right upper lobe and consolidation. B. Chest x-ray on July 2000, showing relief of atelectasis. D. Computed axial tomogram of the upper portion of the chest on July 2000, showing regression of the right hilar mass.

lived happily with his family during the follow-up period. Although the patient did not receive any treatment for his cancer, the follow-up chest x-ray films showed a gradual decrease in the size of the right hilar mass. Finally, the right hilar mass in both chest x-ray film and computed tomography disappeared (Figures 1B and D) on July 2000.

Spontaneous regression of cancer has been defined as temporary or permanent disappearance of the malignancies without any treatment or with obviously inadequate treatment.[5] Although numerous hypotheses have been postulated for the mechanism of spontaneous regression, they are mostly uncertain.[6,7] In this case, the only change after diagnosis of malignancy was cessation of tiapride, a potent dopamine D_2 receptor antagonist. Recently, there has been

accumulating evidence showing that peripheral dopaminergic stimulation inhibits tumor angiogenesis,[4,5,8–10] the formation of new blood vessels, which is essential for the maintenance of the growth and progression of malignant tumors. Dopamine exerts its antiangiogenic effect by binding to the D_2 receptor on endothelial cells, resulting in inhibition of phosphorylation of vascular endothelial growth factor receptor-2, which prevents activation of angiogenesis.[4,5,8] These suggest that the medication with the dopamine D_2 receptor antagonist may assist tumor growth by preventing the dopamine-induced antiangiogenic effect. The relief of antagonizing D_2 receptor may allow endogenous dopamine to bind to the D_2 receptor and inhibit angiogenesis, resulting in spontaneous regression in this case. With an increase in the aged population, the opportunity of facing elderly patients with agitation, aggressiveness, anxiety, and sleep disorder who bear solid tumors has increased. This case may suggest that dopamine antagonist should be used with prudence in such patients.

Masanori Asada, MD, PhD
Satoru Ebihara, MD, PhD
Tatsuma Okazaki, MD, PhD
Hidenori Takahashi, MD, PhD
Hiroyasu Yasuda, MD, PhD
Hidetada Sasaki, MD, PhD
Department of Geriatric and Respiratory Medicine
Tohoku University School of Medicine
Sendai, Japan

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PAROXETINE AND IMPROVEMENT OF VISUAL HALLUCINATIONS IN PATIENTS WITH DEMENTIA WITH LEWY BODIES

To the Editor: Dementia with Lewy bodies (DLB) has been recognized as a major cause of dementia in elderly people, accounting for 10% to 15% of cases at autopsy.[1] Visual hallucinations, typically well formed and detailed, are one of the core features of DLB,[1–3] often resulting in increased caregiver burden. A therapeutic option for visual hallucinations in DLB patients is limited because traditional neuroleptic agents can provoke neuroleptic sensitivity reactions.[3–5] Recent evidence has suggested that acetylcholinesterase inhibitors may be beneficial in the treatment of the cognitive and psychiatric symptoms of DLB,[6–10] although data are limited regarding their long-term effect. Herein two cases of probable DLB with recurrent visual hallucinations are reported. After an acetylcholinesterase inhibitor became ineffective in these patients, a selective serotonin reuptake inhibitor resulted in a dramatic effect on visual hallucinations. An 80-year-old woman had a 3-year history of cognitive decline with a more recent onset of vivid, well-formed hallucinations. She reported seeing her late husband, her grandchildren, or unknown people and would talk to them. She showed pronounced variations in attention, alertness, and level of confusion but did not exhibit parkinsonism. Her baseline Mini-Mental State Examination (MMSE) and Geriatric Depression Scale (GDS) scores were 25 and 5, respectively. After 2 weeks of treatment with donepezil (5 mg, the maximum dose permitted in Japan), there was a marked reduction in visual hallucinations, and after 4 weeks, she complained of no hallucinations, although at 12 months after treatment, she sometimes reported hallucinations again, and at 14 months, her hallucinations became as frequent and severe as before the treatment. Administration of haloperidol (0.75 mg) or risperidone (0.5 mg) had no effects on hallucinations but resulted in sedation and confusion; after administration of paroxetine (20 mg) for 4 weeks, her hallucinations disappeared completely. This effect has persisted to the present (14 months).

A 77-year-old man presented with progressive cognitive decline, recurrent visual hallucinations, and parkinsonism. His baseline MMSE and GDS scores were 11 and 5, respectively, and he demonstrated behavioral abnormalities including hallucinations, apathy, and disinhibition. Four weeks of treatment with donepezil (5 mg) resulted in marked improvement; he had no hallucinations and showed interest in several activities, but at 7 months after the treatment, he became apathetic again, and at 14 months, visual hallucinations recurred. Ten mg of paroxetine was started, and after 6 weeks, hallucinations completely disappeared. The effect of paroxetine on hallucinations has persisted to the present (12 months), although he gradually declined in activity of daily living function because of worsening of parkinsonism.

These two cases suggested that donepezil may be effective in treating hallucinations associated with DLB, but its effect may not persist for a long period, and paroxetine may be beneficial in the treatment of hallucinations in DLB patients even after donepezil becomes ineffective. The results are preliminary but deserve more-comprehensive investigation, and clinicians should be aware of the benefit of selective serotonin reuptake inhibitors in the treatment of visual hallucinations associated with DLB.

Makoto Tanaka MD
Department of Social Service

Kyoto University Hospital
Kyoto, Japan

Toru Kita MD
Department of Cardiovascular Medicine
Graduate School of Medicine
Kyoto University
Kyoto, Japan

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NO POSITIVE CORRELATION BETWEEN ANEMIA AND DISABILITY IN OLDER PEOPLE IN JAPAN

To the Editor: We have read with interest the article entitled "Anemia Is Associated with Disability and Decreased Phys- ical Performance and Muscle Strength in the Elderly" by Penninx et al.[1] Anemia in older people may result from diverse causes associated with economic situation and life- style as well as underlying diseases such as malignancy, subclinical infection, and malnutrition. To confirm the findings of Penninx et al. we compared quantitative scores in activities of daily living (ADLs) and depression of com- munity-dwelling elderly with and without anemia living in three towns in Japan. The study population consisted of 411 community-dwelling older people (174 men, 237 women, mean age = 71.7) living in Kyoto, 138 living in Hokkaido (54 men, 84 women, mean age = 79.8), and 379 living in Kochi (147 men, 232 women, mean age = 78.6) in Japan. According to the World Health Organization's cri- teria for anemia (hemoglobin < 13 g/dL in men and < 12 g/ dL in women),[2] the percentage of elderly subjects with an- emia in Kyoto, Hokkaido, and Kochi was 11.9%, 26.0%, and 27.0%, respectively. Although reports of the prevalence of anemia varied from 2.9% to 61.0%,[3] the higher prev- alence of elderly subjects with anemia in Hokkaido and in Kochi than in Kyoto was presumed to be due to the higher mean age of the population in Hokkaido and Kochi. Seven basic ADL items (walking, ascending and descending stairs, feeding, dressing, going to the toilet, bathing, grooming) were assessed. Each basic ADL item was evaluated on a four-level scale (3 = completely independent; 2 = needing some help; 1 = needing much help; 0 = completely depend- ent). Then each item's score was summed to generate a total basic ADL score ranging from 0 to 21.[4] For higher-level daily activities, using the Tokyo Metropolitan Institute of Gerontology (TMIG) index of competence, a 13-item index including three sublevels of competence, each rated on a yes/no basis, was assessed: instrumental self-maintenance (5 items: the ability to use public transport, buy daily neces- sities, prepare a meal, pay bills, and manage banking mat- ters), intellectual activities (4 items: the ability to fill out forms, read newspapers, read books or magazines, and take interest in television programs or news articles on health- related matters), and social roles (4 items: the ability to visit

Table 1. Comparison of Activities of Daily Living (ADLs) of Community-Dwelling Elderly with and without Anemia in Kyoto, Japan

Characteristic	Without Anemia (n = 360)	With Anemia (n = 49)	ANOVA P-value
Age, mean ± SD	71.3 ± 4.5	74.1 ± 5.9	<.001
Female, %	56.5	57	.04
Body mass index, mean ± SD	22.7 ± 2.8	21.7 ± 2.4	.02
ADL score, mean ± SD (range 0–21)	20.9 ± 0.7	20.7 ± 0.6	NS
Information-related function, mean ± SD (range 0–12)	11.7 ± 0.7	11.7 ± 0.5	NS
Instrumental ADL score, mean ± SD (range 0–5)	4.9 ± 0.5	4.8 ± 0.8	NS
Intellectual ADL score, mean ± SD (range 0–4)	3.7 ± 0.6	3.7 ± 0.7	NS
Social roles, mean ± SD (range 0–4)	3.4 ± 1.0	3.5 ± 1.0	NS
Tokyo Metropolitan Institute of Gerontology total score, mean ± SD (range 0–13)	12.1 ± 1.5	12.0 ± 2.0	NS
GDS, mean ± SD (range 0–15)	3.3 ± 3.2	3.9 ± 3.0	NS
GDS ≥ 6, %	22.2	27.7	NS
GDS ≥ 10, %	4.9	6.3	NS

SD = standard deviation; ANOVA = analysis of variance; NS = nonsignificant; GDS = Geriatric Depression Scale.

friends, give advice to relatives and friends, visit someone at the hospital, and initiate a conversation with younger people). The Geriatric Depression Scale-15 (GDS-15) was used to screen older people for depression. Table 1 compares the mean age, sex ratio, body mass index, ADL scores, mean GDS-15 score, and the prevalence of depression (GDS cut-off = 6 (mild depression) and 10 (severe depression) of the groups with and without anemia in Kyoto. The nonanemic group was significantly younger than the anemic group, there were proportionally more women in the anemic group than in the nonanemic group, and body mass index was lower in the anemic group than in the nonanemic group, but there were no significant differences in basic and advanced ADLs, depression score, and prevalence of depression between the two groups. These findings were common to the other two towns (Hokkaido and Kochi) in Japan. The findings[5] concluding that anemia in elderly residents in a nursing home in Japan might decrease the survival rate but that anemia itself did not lead to lower ADL scores coincided with our findings in Japan. Our findings suggest that the relationship between anemia and disability in older people in Italy that Penninx et al. reported is not necessarily a universal phenomenon, at least in community-dwelling elderly population in Japan. Anemia in older people may be associated with long-standing dietary habits and economic status as well as underlying diseases. Although anemia is an important issue in geriatric medicine, diverse relationships between anemia and other health conditions in older people require further study.

Masayuki Ishine, MD
Taizo Wada, MD, PhD
Katsuhiro Akamatsu, MD
Matheus Roriz Cruz, MD
Department of Field Medicine
Teiji Sakagami, MD
Department of Psychiatry
Toru Kita, MD, PhD
Department of Cardiology
Graduate School of Medicine
Kozo Matsubayashi, MD, PhD
The Center for Southeast Asian Studies
Kyoto University
Kyoto, Japan

Kiyohito Okumiya, MD, PhD
Research Institute of Humanity and Nature
Kyoto, Japan

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DECREASED SERUM SUBSTANCE P CONCENTRATION IN THE ACUTE PHASE OF INTRACRANIAL HEMORRHAGE

To the Editor: Attention has recently been focused on serum substance P concentration in elderly patients with stroke.[1–6] It is likely that impairment of the basal ganglia due to cerebral infarction leads to a decrease in serum substance P, resulting in higher incidence of aspiration pneumonia, but the mechanism of decrease in serum substance P in stroke patients has not been well clarified. Some reports advocating angiotensin-converting enzyme (ACE) inhibitors for prevention of pneumonia in patients with chronic cerebral ischemia are available in the literature,[1–4,6] but information pertaining to serum substance P concentration in the patients with acute intracranial hemorrhage is still scarce.

Aspiration pneumonia is also a major problem in hemorrhagic stroke, especially during the early stage. Management of the general complications in this period is a decisive factor in the outcome of subarachnoid hemorrhage (SAH) and intracerebral hemorrhage. To investigate the efficacy of ACE inhibitors in such cases, a pilot study was performed to examine serum substance P concentration in patients in our neurosurgery department.

The subjects were 30 patients (22 men and 8 women, mean age = 59.6); seven (mean age = 53.4) had SAH, six (mean age = 58.0) had intracerebral or intraventricular hemorrhage (ICH/IVH), and 17 (mean age = 64.6) had ischemic stroke. Mean serum substance P was 33.6 pg/mL in the patients with SAH, 32.7 pg/mL in those with ICH/IVH, and 34.0 pg/mL in those with ischemia. In patients in the acute stage (within 2 weeks after onset), mean serum substance P was 13.7 pg/mL in patients with SAH (n = 3, mean age = 44.7), 26.3 pg/mL in those with ICH/IVH (n = 3, mean age = 57.3), and 42.7 pg/mL in those with ischemia (n = 3, mean age = 54.0). Emphasis should be placed on the lower level of serum substance P in younger patients during the incipient stage of SAH and ICH/IVH. There was no evidence suggesting such a tendency in ischemic stroke.

Considering the neurological and neuroimaging information in the current cases, it is less likely that the decrease in serum substance P concentration was a consequence of direct damage to the basal ganglia or brain stem due to SAH and ICH/IVH. Secondary malfunction is a probable cause, although the precise mechanism is unclear. The evidence in the current study is inconsistent because of the small number of subjects, although the authors believe that increased attention should be given to this topic for management of acute hemorrhagic stroke with considerable susceptibility to aspiration pneumonia. A further trial to investigate the effect of an ACE inhibitor (imidapril hydrochloride) on serum substance P and its usefulness in prevention of pneumonia is under way on this inpatient ward.

Hiroshi Sakaida, MD
Hiroshi Tanemura, MD
Tatsuya Yoshikawa, MD
Waro Taki, MD
Department of Neurosurgery
Mie University School of Medicine
Tsu, Japan

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AGE AND ACUTE MOUNTAIN SICKNESS: EXAMINING THE DATA

To the Editor: Conventional wisdom holds that advanced age is protective against acute mountain sickness (AMS). This concept has been repeated in several recent literature reviews.[1,2] It is counterintuitive that older patients, with less physiological reserve and more comorbidities, would be less susceptible to AMS. With this in mind, the data leading to the notion that age is protective against AMS was reviewed. Illness induced by altitude exposure occurs in three forms: AMS, high-altitude cerebral edema (HACE), and high-altitude pulmonary edema (HAPE). AMS is defined as the presence of headache and at least one of the following: gastrointestinal distress, fatigue, dizziness, lightheadedness, or sleep disturbances in a person exposed to recent significant altitude gain. HACE is defined as altered mental status or ataxia in a person with AMS or the presence of altered mental status and ataxia in a person without AMS. HACE is on a continuum with AMS and is considered to be severe or end-stage AMS.[3,4] HAPE is currently understood to be an entity independent of AMS and HACE.

Data

A 1976 study of tourist trekkers in Nepal reported an inverse relationship between age and AMS. In this study, AMS was diagnosed using a nonstandard symptom-based point scale and a physical examination of some but not all subjects. Of 278 tourists, 53% developed AMS according to these nonstandard criteria. The average age of those with AMS was 31.4 (range 18–62), and the age of those without AMS was 35.2 (range 19–71). Although this 3.8-year difference between the mean values was statistically significant, the incidence of AMS in older individuals and the severity of AMS stratified by age were not described.[5] A larger 1993 study also found an inverse relationship between age and AMS in a convenience sample of visitors to Colorado resorts. Of 3,158 individuals, 25% developed AMS according to a standardized diagnostic scale. In those aged 60 and older, the incidence was 16%.[6] Another report studied the 50th reunion of the U.S. Army's 10th Mountain Division, based in Leadville, Colorado, during World War II. Of 97 individuals aged 59 to 83, AMS incidence was 16% using standardized contemporary criteria. Using historical controls, the authors reported consistency with the above data.[7] A more recent methodologically sound study reported no relationship between age and AMS incidence.[8] The quantity and quality of data are insufficient to conclude that advancing age confers protection against AMS. Earlier studies used varying definitions of AMS. Contemporary standardized definitions for altitude-related syndromes are now available.[4] Studies using these definitions are of higher quality but are weakened by the use of historical controls that used other diagnostic criteria. A paucity of data on comorbid conditions, fitness, and physiological reserve further impairs meaningful interpretation. In older individuals, it is possible that the nonspecific symptoms of AMS were attributed to comorbid conditions, thus leading to underdiagnosis of AMS in this population. Studies have also primarily assessed tourists of European descent, excluding other populations exposed to altitude such as pilgrims and local people employed in the tourist industry. Thus, the statistically significant differences in average age between those who are and are not affected AMS may be a reflection of bias and methodological flaws rather than a true resistance to AMS with advancing age.

Older visitors to higher altitudes are likely to become more heterogeneous as the population ages and the global adventure travel industry expands. Counseling patients using current data could lead clinicians and travel personnel to underestimate the risk of AMS in an at-risk population. Thus the relationship between AMS and age should be rigorously studied. Further studies of AMS should employ standardized diagnostic definitions, prospectively defined endpoints and age ranges, evaluations of fitness, comorbidities, concomitant medications, acclimatization, and rate of ascent. Until such information is available, we should refrain from disseminating the notion that age is protective against AMS.

Jeremy Graham, DO
Darryl Potyk, MD
Internal Medicine Residency Spokane
University of Washington School of Medicine
Spokane, WA

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WALKING WHILE TALKING: A DOPAMINE-RESPONSIVE TASK IN EARLY PARKINSON'S DISEASE

To the Editor: Recent studies have attempted to develop sensitive indicators of gait dysfunction to diagnose, mon-

itor, and measure treatment response in early idiopathic Parkinson's disease (IPD).[1] It was reported that a walking-while-talking test (WWT) was a strong predictor of falls.[2] Herein, a newly diagnosed patient with IPD in whom WWT served as a sensitive marker of gait and cognitive improvement after treatment is reported.

An 88-year-old right-handed man participating in a longitudinal aging study was noted to have increased stiffness in his limbs in 1999. At enrollment in 1996 and during the following 2 years, board-certified neurologists determined his gait and clinical examination, based on the motor section of the Unified Parkinson's Disease Rating Scale (UPDRS III), to be normal. In 2001, he had bradykinesia, cogwheel rigidity, rest tremor, and festinating gait. The clinical and laboratory evaluations did not suggest any secondary causes for Parkinsonism, and he was diagnosed with IPD. He was started on levodopa in 2002 because his gait and mobility had worsened. Improvement in gait and mobility was seen when examined at 1- and 6-month follow-up visits after starting treatment. After 1 year on treatment, the patient continued to report improved gait, although his UPDRS III scores had worsened because of increased stiffness (Table 1). He died of a myocardial infarction 6 months after his last visit.

METHODS

Quantitative gait parameters were studied using a computerized walkway (180 × 35.5 × 0.25 inches) with embedded sensors (GAITRite, CIR Systems, Clifton, NJ). Start and stop points were marked by lines on the floor and allowed 3 feet for initial acceleration and terminal deceleration. Footfalls are recorded electronically while the subject walks over the mat, and the software uses this information to compute quantitative parameters such as step length (heel-point of the current footfall to the next heel-point of the opposite foot), cadence (number of steps/min), and velocity (distance/time). Subjects first walk on the mat at their normal pace. They then walk the course reciting alternate letters of the alphabet (WWT).[2] Mean of three trials was used to compute values. The GAITRite measurements have high reliability and validity in this and other studies.[3,4]

RESULTS

Table 1 shows gait and cognitive performance. The initial WWT was completed before starting levodopa. The second was performed a year later in the "on" state. Quantitative measures during normal pace were minimally changed, but the WWT was significantly improved, corroborating the patient's self-report and the clinical impression. General and executive function test performance, which had declined when treatment was initiated, returned to prediagnosis levels.

DISCUSSION

This report shows that WWT is a sensitive marker for gait and cognitive dysfunction in early IPD. WWT was a better

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Table 1. Clinical Status, Quantitative Gait, and Neuropsychological Performance

Assessment	Annual Aging Study Visit				Change %
	Fourth	Fifth	Sixth	Seventh	
Year	1999	2001	2002	2003	
Levodopa dose	—	—	Pretreatment	50/200 twice/d	
Unified Parkinson's Disease Rating Scale III score (worst score = 108)	12	27	27	40	
Neuropsychological tests					
Blessed-Information-Memory-Concentration Test (worst score = 32)*	2	2	7	2	
Controlled Oral Word Association test	55	58	45	59	
Category fluency test	44	47	32	51	
Digit Span test (total)	15	13	15	19	
Verbal memory: Free and Cued Selective Reminding Trials (best score = 48)†					
Free recall	35	32	34	38	
Total recall	48	48	48	48	
Walking at normal pace					
Mean step length: right, cm	—	—	41.9	40.0	− 4.5
Cadence, steps/min	—	—	123.2	126.0	2.3
Velocity, cm/min	—	—	86.1	83.9	− 2.5
Walking while talking					
Mean step length: right, cm	—	—	20.9	27.6	32.1
Cadence, steps/min	—	—	84.4	112.2	32.9
Velocity, cm/min	—	—	28.9	51.3	77.5

*Assesses general mental status.
†Sum of three trials.

indicator of the therapeutic response than normal walking, and correlated well with the patient's self-report and the improvement noted on examination. Levodopa improves stride-to-stride variability and stride length in IPD.[5] In a previous study, subjects with an average IPD duration of 11 years had gait deterioration while attempting to recite names while walking.[6] Antiparkinsonian medications ameliorated the deterioration, although the results were not statistically significant because of the wide variability in response. The authors suggested that attentional deficits in IPD may interfere with the ability to compensate for the additional cognitive task while attempting to maintain gait. Poor WWT performance in IPD may also result from reduced attentional resources.

The current case provides a unique opportunity to quantitatively examine gait and WWT in a newly diagnosed IPD patient before and after treatment. It has been shown that dual tasks such as the WWT are a clinically relevant approach to study mobility.[1,2,6] Furthermore, WWT is a strong predictor of falls in cognitively normal older adults.[2] Attentional and working memory deficits, which may localize to the frontal lobes, have been described in early IPD.[7,8] The current observations build on these reports and confirm executive dysfunction early in IPD. In cognitive tests localized to the frontal lobes such as digit span or controlled oral word association tests, improvement occurred in concert with WWT after treatment. Alternatively, verbal memory performance, which is mostly localized to the hippocampus, was unaffected.

Although based on a single patient, the reliability of these techniques[3,4] and the clinical picture suggest that the WWT is a sensitive dopamine-responsive task that may be used to monitor mobility and cognition in early IPD. Demonstration of cognitive deficits early in the disease course has implications not only for understanding the pathophysiology of IPD, but also for identifying and reducing risks of falls. These issues should be addressed in large samples.

Paul S. Kwon, MD
Joe Verghese, MD, MS
Department of Neurology
Albert Einstein College of Medicine
Bronx, NY

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PREVALENCE OF OVERWEIGHT AND OBESITY IN OLDER U.S. ADULTS: ESTIMATES FROM THE 2003 BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM SURVEY

To the Editor: Although reports show increased prevalence of overweight and obesity in the U.S. adult population,[1–3] prevalence estimates addressing the U.S. population aged 65 and older have not been reported. Using data from the 2003 Behavioral Risk Factor Surveillance System (BRFSS) survey, this report provides prevalence estimates of overweight and obesity of U.S. adults aged 65 and older and estimates for specific age cohorts (65–74, 75–84, $\geq$ 85) stratified by demographic characteristics. The BRFSS survey selects a representative sample from 50 states and four territories in the United States and uses a multistage cluster design based on random-digit dialing of noninstitutionalized residents aged 18 or older.[4] The sample size for adults aged 65 and older in 2003 was 56,118. Exclusion of missing data and refusal responses resulted in 52,921 persons with complete information for study variables.

Self-reported weight and height were used to calculate body mass index (BMI). BMI was classified into three levels: normal (<25.0), overweight ($25.0–<30.0$), and obese (≥ 30.0).[5] Measures of age, sex, race/ethnicity, and education were used in the analyses, and the three age cohorts were created (65–74, 75–84, and ≥ 85). The race/ethnicity measure contained four categories (white, non-Hispanic; black, non-Hispanic; other, non-Hispanic; and Hispanic). Education was classified into three levels (less than high school education, completed high school, and post–high school (includes college degree)).

Prevalence estimates and their 95% confidence intervals (CIs) were calculated using SUDAAN software (Research Triangle Institute, Research Triangle Park, NC). All analyses used sample weights to account for differential probabilities of selection into the sample, nonresponse, and noncoverage. The Bonferroni method was used to adjust for multiple comparisons across all subgroup levels within each demographic group.

The percentage of U.S. adults aged 65 and older with a BMI of less than 25.0 was 40.4% (95% CI = 39.6–41.1), 39.3% (95% CI = 38.6–40.1) were overweight (BMI 25.0–30.0), and 20.3% (95% CI = 19.7–21.0) were obese (BMI – <30.0). The total percentage of older adults classified as overweight or obese (BMI $\geq$ 25.0) for this population was 59.7% (95% CI = 58.9–60.4).

Several subgroup differences emerged. Older men had a higher prevalence of overweight (47.4%, 95% CI = 46.0–48.7) than older women (33.4%, 95% CI = 32.5–34.3; $P < .001$), but women had higher levels of obesity (21.0%, 95% CI = 20.1–21.9 vs 19.4%, 95% CI = 18.4–20.4; $P = .02$). White, non-Hispanic older adults had a higher prevalence of overweight (40.0%, 95% CI = 39.2–40.8) than black, non-Hispanic older adults (34.4%, 95% CI = 31.2–37.7; $P < .001$), but older black adults had the highest prevalence of obesity (33.0%, 95% CI = 29.5–36.8

Table 1. Overweight and Obesity Prevalence of U.S. Older Adults by Age Groups, Behavioral Risk Factor Surveillance System, 2003

	65–74			75–84			≥85 Years		
	Prevalence, % (95% Confidence Interval)								
Variable	<25.0	25.0–<30.0	≥30.0	<25.0	25.0–<30.0	≥30.0	<25.0	25.0–<30.0	≥30.0
Sex									
Male	27.7 (26.2–29.2)	48.4* (46.8–50.0)	24.0 (22.8–25.4)	38.1 (35.8–40.4)	47.7* (45.3–50.2)	14.2* (12.7–15.8)	53.4 (48.9–57.8)	37.3* (33.2–41.5)	9.4 (6.7–12.9)
Female	40.0 (38.6–41.3)	34.2 (32.9–35.5)	25.9 (24.6–27.1)	47.8 (46.1–49.5)	34.1 (32.6–35.6)	18.1 (16.8–19.6)	62.2 (59.4–64.9)	27.7 (25.3–30.7)	10.2 (8.6–12.0)
Race									
White, non-Hispanic	34.6 (33.6–35.6)	41.6† (40.6–42.7)	23.8 (22.9–24.7)	44.5 (43.2–45.9)	40.1 (38.7–41.5)	15.4 (14.5–16.4)	59.3 (56.9–61.7)	31.4‖ (29.2–33.7)	9.3 (8.0–10.7)
Black, non-Hispanic	29.7 (25.4–34.4)	33.1 (29.3–37.2)	37.2‡ (32.8–41.8)	34.9 (27.9–42.7)	35.4 (29.4–42.0)	29.7§ (22.9–37.5)	46.3 (35.6–57.2)	39.5¶ (29.4–50.6)	14.3 (9.0–22.0)
Other, non-Hispanic	39.9 (33.9–46.1)	39.3 (32.9–46.1)	20.8 (16.2–26.4)	47.8 (40.1–55.5)	36.1 (29.8–43.0)	16.1 (11.3–22.4)	69.0 (56.0–79.5)	24.0 (15.6–35.2)	7.0 (2.8–16.3)
Hispanic	30.7 (25.7–36.1)	41.0 (35.6–46.5)	28.4 (23.3–34.0)	43.3 (34.3–52.8)	36.5 (27.9–46.2)	20.1 (13.6–28.7)	65.1 (45.1–80.9)	14.9 (8.8–24.0)	20.1 (6.9–45.8)
Education									
Less than high school	31.2 (27.1–35.7)	34.4# (30.3–38.7)	34.4§§ (30.0–39.2)	40.2 (35.2–45.4)	38.6 (34.2–43.1)	21.2# (18.1–24.4)	49.1 (42.8–55.5)	37.3** (31.5–43.4)	13.6 (8.6–21.0)
Completed high school	32.4 (31.0–33.9)	40.1 (38.6–41.6)	27.5# (26.2–28.9)	41.1 (39.1–43.1)	40.1 (38.1–42.1)	18.8# (17.1–20.6)	56.2 (53.1–60.3)	32.4 (29.1–35.9)	10.9 (8.7–13.5)
Post-high school	36.3 (34.9–37.8)	42.5 (41.0–44.0)	21.2 (20.0–22.6)	47.6 (45.6–49.7)	39.0 (36.9–41.1)	13.4 (12.1–14.9)	64.5 (61.1–67.9)	27.5 (24.5–30.7)	8.0 (6.4–10.0)

*Significantly different from females at P<.001, with Bonferroni adjustment.
†Significantly different from black, non-Hispanic at P<.001, with Bonferroni adjustment.
‡Significantly different from white, non-Hispanic at P<.001, and Other, non-Hispanic at with Bonferroni adjustment.
§Significantly different from white, non-Hispanic at P<.001, and Other, non-Hispanic at P=.003, with Bonferroni adjustment.
‖Significantly different from Hispanic at P<.001, with Bonferroni adjustment.
¶Significantly different from Hispanic at P<.001, with Bonferroni adjustment.
#Significantly different from post-high school at P<.001, with Bonferroni adjustment.
§§Significantly different from completed high school at P=.005, and post high school at P<.001,with Bonferroni adjustment.
**Significantly different from post high school at P=.005, with Bonferroni adjustment.

vs older white adults (19.0%, 95% CI = 18.4–19.7; $P < .001$) and older adults of other, non-Hispanic origin (18.2%, 95% CI = 14.9–22.2; $P < .001$)). Older adults with less than a high school education had the highest prevalence of obesity (26.1%, 95% CI = 23.5–29.0; $P < .001$), followed by older adults who had completed high school (22.6%, 95% CI = 21.6–23.6; $P < .001$).

Across the three age cohorts, 40.8% (95% CI = 39.8–41.9) of those aged 65 to 74 were overweight, and 25.0% (95% CI = 24.0–25.9) were obese; 39.5% (95% CI = 38.1–40.8) of those aged 75 to 84 were overweight, and 16.6% (95% CI = 15.5–17.7) were obese. For the oldest-old group (≥ 85), 30.8% (95% CI = 28.7–33.0) were overweight, and 9.9% (95% CI = 8.5–11.5) were obese. The prevalence of overweight was significantly higher for those aged 65 to 74 and 75 to 84 than for those aged 85 and older ($P < .001$). Those aged 65 to 74 showed the highest prevalence of obesity ($P < .001$), followed by those aged 75 to 84 and 85 and older.

The prevalence of overweight and obesity for all three age cohorts of older adults, stratified by sex, race/ethnicity, and education, is presented in Table 1. Across the three age cohorts, men had a higher prevalence of overweight than women ($P = .001$). Of those aged 75 to 84, women had a significantly higher prevalence of obesity than men ($P = .001$). Also in that age group, black, non-Hispanic older adults had higher levels of obesity than white, non-Hispanic older adults and older adults of other, non-Hispanic origin ($P < .05$). A few subgroup differences also existed in education levels. For example, in those aged 65 to 74 and 75 to 84, subjects with less than a high school education tended to have a higher prevalence of obesity than those who had more than a high school education.

Prevalence estimates shown in this report call for efforts to reduce overweight and obesity in U.S. adults aged 65 and older. Indeed, most older Americans are not active enough to achieve the health benefits associated with physical activity.[6] In this regard, there is a need for effective intervention strategies[7–9] to meet *Healthy People 2010* targets for obesity and physical activity.[10]

Fuzhong Li, PhD
K. John Fisher, PhD
Oregon Research Institute
Eugene, OR

Peter Harmer, PhD
Willamette University
Salem, OR

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IN SEARCH OF AFFORDABLE PRESCRIPTION MEDICATIONS

To the Editor: We would like to share our information on the ongoing search for more affordable prescription medication.

According to the Centers for Medicare and Medicaid Services, national health expenditures are projected to reach $3.1 trillion in 2012, and prescription drug spending is expected to account for 14.5% of total health expenditures.[1] It is well established that chronically ill patients with limited means will economize on needed prescriptions despite the increase in health risk and hospitalizations.[2–4] To obtain cheaper medications, many American seniors are traveling via the Internet, car, or bus to Canada.[5] Even local governments look to Canada for cheaper medications.[6] Increasingly more American veterans are enrolling with the Veterans Affairs (VA) Medical Center (VAMC).

To provide prescription medications at a small cost to veterans (a small fixed copayment for any prescription medication), the Veterans Health Administration Pharmacy Benefits Management Strategic Healthcare Group implemented a national formulary in 1997. Patients may continue to see their non-VA healthcare providers, but decisions regarding appropriate medication or frequency of visits depend on the individual VA healthcare provider.

METHODS

Institutional review board approval and a Health Insurance Portability and Accountability Act of 1996 waiver was granted to review patients' charts. The charts of new patients that presented to the Dallas VAMC primary care clinic #3 from January 2003 to December 2003 were reviewed. Charts were reviewed for patient age, number of initial medications sought, type of prescription medications, substitutions made to comply with formulary restrictions, restricted medications, and need for subspecialty approval.

RESULTS

Two thousand nine patients entered the clinic between January and December 2003. Of the 2,009 patient charts reviewed, 38 were excluded because the patients did not stay for their initial appointment. Of the 1,971 patient charts reviewed, 293 patients came only for medications. One hundred eighteen (6%) patients did not come back after

their first visit. The majority of these patients did not return because they did not want to see a VA healthcare provider to receive their medications. One hundred seventy-five (8.9%) stated in their initial and subsequent visits that they were still visiting and receiving medical care through their non-VA healthcare provider. The mean age of this group was 68.8, and the mean number of prescription medications was six (excluding supplies such as insulin syringes). Ten percent of prescriptions required a consult/special approval to obtain them from the pharmacy. Fifty-seven visits to various subspecialty clinics were required for approval of other restricted medications. Twenty-eight percent of prescriptions needed to be changed to formulary drugs. The most common substitutions were angiotensin-converting enzyme inhibitors (5.5%), "statins" (4.5%), and proton pump inhibitors (3.8%). Thirty-seven patients decided that they did not want to visit other clinics or make substitutions to get all of their medications and continued to obtain a portion of their prescription medications from their non-VA physician. Seventy-one patients (41%) had additional medication added—usually antihypertensives or lipid-lowering agents.

DISCUSSION

Approximately 25,000 new patients enrolled at the Dallas VAMC in 2003. Fifteen percent of new patients came for prescription medications only. All prescriptions could be obtained through the VA, but some required substitutions or subspecialty approval.

This review is limited in scope to the Dallas VAMC and to those charts in which it was stated that the patient continued to see their non-VA healthcare provider. We suspect that this occurs across the nation and suspect that this number maybe greater than what is documented in the chart.

Senior citizens accounted for the majority of patients who sought cheaper medications, with an average age of our patients being 68.8. According to the American Association of Retired Persons, Medicare beneficiaries aged 65 and older spend more each year out of pocket on prescription drugs than on physician care, vision services, and medical supplies combined. As civilian American seniors continue to seek more-affordable prescription medications in other countries (Canada), veterans turn to the VA for their prescriptions. This article further illustrates the need for more-affordable prescription drug coverage.

Since 1997, enrollment in the Dallas VAMC has steadily increased. Despite this increased staffing, available space has not increased in the same proportion. The total pharmacy cost exclusively for medications for 2003 at the Dallas VAMC was $69 million, and the projected pharmacy budget for 2005 is $97 million. Will the new Medicare prescription drug plan help? It is unlikely to provide a more-affordable alternative for veterans, and we anticipate enrollment to continue to increase in an already overburdened system.

Wen S. Lai, MD
Jonathan E. Dowell, MD
Dallas Veteran Affair Medical Center
Southwestern Medical School
Dallas, TX

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