Management of Pain in Elderly Patients With Cancer

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Context.—Cancer pain can be relieved with pharmacological agents as indicated by the World Health Organization (WHO). All too frequently pain management is reported to be poor.

Objective.—To evaluate the adequacy of pain management in elderly and minority cancer patients admitted to nursing homes.

Design.—Retrospective, cross-sectional study.

Setting.—A total of 1492 Medicare-certified and/or Medicaid-certified nursing homes in 5 states participating in the Health Care Financing Administration's demonstration project, which evaluated the implementation of the Resident Assessment Instrument and its Minimum Data Set.

Study Population.—A group of 13 625 cancer patients aged 65 years and older discharged from the hospital to any of the facilities from 1992 to 1995. Data were from the multilinked Systematic Assessment of Geriatric Drug Use via Epidemiology (SAGE) database.

Main Outcome Measures.—Prevalence and predictors of daily pain and of analgesic treatment. Pain assessment was based on patients' report and was completed by a multidisciplinary team of nursing home personnel that observed, over a 7-day period, whether each resident complained or showed evidence of pain daily.

Results.—A total of 4003 patients (24%, 29%, and 38% of those aged ≥85 years, 75 to 84 years, and 65 to 74 years, respectively) reported daily pain. Age, gender, race, marital status, physical function, depression, and cognitive status were all independently associated with the presence of pain. Of patients with daily pain, 16% received a WHO level 1 drug, 32% a WHO level 2 drug, and only 26% received morphine. Patients aged 85 years and older were less likely to receive morphine or other strong opiates than those aged 65 to 74 years (13% vs 38%, respectively). More than a quarter of patients (26%) in daily pain did not receive any analgesic agent. Patients older than 85 years in daily pain were also more likely to receive no analgesia (odds ratio [OR], 1.40; 95% confidence interval [CI], 1.13-1.73). Other independent predictors of failing to receive any analgesic agent were minority race (OR, 1.63; 95% CI, 1.18-2.26 for African Americans), low cognitive performance (OR, 1.23; 95% CI, 1.05-1.44), and the number of other medications received (OR, 0.65; 95% CI, 0.5-0.84 for 11 or more medications).

Conclusions.—Daily pain is prevalent among nursing home residents with cancer and is often untreated, particularly among older and minority patients.

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THE PREVALENCE OF cancer increases with age,[1] and pain is one of cancer's most frequent and disturbing symptoms.[2] Despite the widespread dissemination of the World Health Organization's (WHO's) 3-level ladder,[3] and the demonstration that its appropriate use can relieve pain in more than 90% of cases,[4-5] pain management remains poor. A high prevalence of unrelieved cancer pain has been documented in a variety of clinical settings, including general medical and surgical units,[6] oncology wards,[7] emergency departments,[8] and pediatric wards.[9] Even in oncology outpatient clinics, the management of pain falls well below accepted standards.[10,11] Although there is no physiologic basis for a decrease in pain with increasing age, pain is believed to be less prevalent among the aged and is historically underreported and undertreated. While the WHO ladder approach is applicable to older patients with cancer,[12] limited attention has been devoted to the management of pain in this age group.

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With hospital length of stay declining and the elderly segment of the population increasing, the role of nursing homes is expanding to provide both postacute care and rehabilitation.[13] These trends are forcing more complex clinical care problems onto facilities that are still tainted by an image as the poorest-quality providers in the US health care system.[14] Indeed, a new study reports that the prevalence of pain among nursing home patients has increased in recent years.[15] Yet, data on the management of cancer pain in this population are lacking.

This study characterizes the treatment of pain among nearly 15 000 elderly cancer patients admitted to US nursing homes, and specifically examines independent predictors of pain and pre-

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A complete list of the members of the Systematic Assessment of Geriatric Drug Use via Epidemiology (SAGE) Study Group appears at the end of this article.

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Table 1.—Characteristics of Patients With Cancer*

Variable	Patient Age Group		
	65-74 y (n = 2949)	75-84 y (n = 6004)	≥85 y (n = 4672)
Female	1626 (55)	3335 (56)	2799 (60)
Race			
White	2452 (83)	5320 (89)	4266 (91)
African American	355 (12)	436 (7)	250 (5)
Hispanic	52 (2)	66 (1)	45 (1)
Asian	25 (1)	50 (1)	32 (1)
American Indian	65 (2)	132 (2)	79 (2)
Marital status, widowed	1087 (37)	3103 (52)	3137 (67)
Degree activities of daily living compromised†			
Moderately	1427 (49)	3021 (51)	2392 (51)
Severely	1117 (38)	2311 (39)	1894 (41)
Degree of impaired cognitive performance‡			
Moderately	938 (32)	2305 (39)	1995 (43)
Severely	244 (8)	594 (10)	490 (11)
Depressed mood§	619 (21)	1170 (20)	808 (17)
Bedridden	462 (16)	665 (11)	358 (8)
Explicit terminal prognosis‖	517 (18)	742 (12)	433 (9)
No. of diagnoses, mean ± SD (range)	3.9 ± 2.0 (1-14)	4.2 ± 2.0 (1-24)	4.4 ± 1.9 (1-13)
No. of drugs, mean ± SD (range)	7.3 ± 4.2 (1-18)	6.7 ± 3.9 (1-18)	6.2 ± 3.9 (1-18)
Daily pain¶	1119 (38)	1756 (29)	1128 (24)

*Data are given as number (percent) unless otherwise indicated.
†Based on a 6-level scale.[22] Activities of daily living score is 2 to 3 for moderately compromised and 4 to 5 for severely compromised.
‡Based on a 7-level scale.[23] Cognitive performance scale score is 2 to 4 for moderately impaired and 5 to 6 for severely impaired.
§Based on criteria derived from the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Third Edition Revised.* Washington, DC: American Psychiatric Association; 1987.
‖Indicated conditions with less than 6 months of expected survival.
¶Resident complains or shows evidence of pain daily (as assessed by the nursing home staff over a 7-day period).

scribed analgesics in elderly and minority patients.

METHODS

The Systematic Assessment of Geriatric Drug Use via Epidemiology Database

Data were from the Systematic Assessment of Geriatric Drug Use via Epidemiology (SAGE) database described in detail elsewhere.[16-18] Briefly, SAGE is a population-based, multilinked database that includes computerized data collected as part of the Health Care Financing Administration's Multistate, Nursing Home Case-mix and Quality Demonstration Project. Since 1992, nursing home staff in all Medicare and Medicaid facilities of 5 states have evaluated patients using the Resident Assessment Instrument, which includes a more than 350-item Minimum Data Set (MDS), a comprehensive instrument.[19] Over 350 000 patients had an MDS completed on admission to 1 of 1492 facilities in Kansas, Maine, Mississippi, New York, and South Dakota, during the 1992 to 1995 period.

The MDS includes sociodemographic information, numerous clinical items ranging from the degree of functional dependence to cognitive functioning, and all clinical diagnoses.[20,21] The MDS also includes an extensive array of signs, symptoms, syndromes, and treatments being provided.[20,21] A variety of different, multi-item summary scales are embedded in the MDS measuring, among others, physical function (activities of daily living)[22] and cognitive status (cognitive performance scale).[23]

In addition to MDS data, nursing staff recorded up to 18 different medications received by each resident in the prior 7 days. Drug information included brand and/or generic name, dosage, route, and frequency of administration.[16-18] Drugs were coded according to the national drug codes, and we used the Master Drug Data Base (MediSpan Inc, Indianapolis, Ind) to translate them into therapeutic classes and subclasses.[17]

Study Sample

Of a total population of 363 354 persons, we identified 30 039 patients (8.3%) with a diagnosis of cancer. We subsequently excluded (1) patients younger than 65 years (n = 2105), (2) patients not admitted from a hospital (n = 4292), (3) persons who were residents when the use of MDS was initiated (n = 9120), (4) comatose patients (n = 60), and (5) patients admitted after October 1, 1995, in New York State, because facilities no longer uniformly collected drug information (n = 837). As a result, the final study sample comprised the 13 625 remaining individuals.

Pain Measurement

A multidisciplinary team of various professionals evaluated signs and symptoms of pain, but as the experience of pain is subjective, assessors were instructed to rely on self-report, when possible.[20] The team started the assessment within hours of admission to the facility, but subsequently allowed for a period of observation (at least 7 days) to repeatedly interact with the patient and to integrate the observations of family and staff who regularly provided direct care. Daily pain was defined as any type of physical pain or discomfort in any part of the body that was manifested daily. Specifically, staff making the ratings were instructed to ask simple, direct questions about whether the patient had experienced pain. Because some residents did not complain verbally, or were unable to speak, the assessors were instructed to observe such persons for indicators of pain, including moaning, crying, wincing, frowning, or other facial expressions or posturing such as guarding or protecting an area of the body. If the assessor had difficulty determining the frequency, pain was coded as daily. Independent, dual assessment of pain items in a diverse sample of residents during testing and revision of the MDS showed an average weighted κ exceeding 0.7.[15]

Drug Information

We classified analgesics into 3 groups according to the WHO ladder[3-5]; level 1: salicylates, acetaminophen, and nonsteroidal anti-inflammatory drugs; level 2: codeine phosphate or codeine sulfate, oxycodone hydrochloride, hydrocodone bitartrate, propoxyphene hydrochloride or propoxyphene napsylate, meperidine hydrochloride, pentazocine hydrochloride or pentazocine lactate, buprenorphine hydrochloride, nalbuphine hydrochloride, butorphanol tartrate and any combination of these compounds with WHO level 1 drugs (mostly with acetaminophen and aspirin); and level 3: morphine sulfate, hydromorphone hydrochloride, oxymorphone hydrochloride, methadone hydrochloride, levorphanol tartrate, and fentanyl citrate. Corticosteroids, antidepressants, benzodiazepines, and anesthetics as well as antineoplastic hormones were considered to be adjuvant medications.[5]

Analytical Approach

We evaluated age trends of sociodemographic variables and indicators of disease severity using Mantel-Haenszel χ^2 tests for categorical variables. For continuous variables with skewed distributions, we used a nonparametric method (ie, Wilcoxon tests) to evaluate age differences. To identify predictors of unresolved daily pain, we constructed a multiple logistic regression model. Independent variables considered for the model included sociodemographic variables and indicators of

Table 2.—Predictors of Daily Pain*

Variable	Daily Pain (n = 4003)	No Pain (n = 9610)	Univariate Odds Ratio (95% Confidence Interval)	Adjusted Model† Odds Ratio (95% Confidence Interval)
Age, y				
65-74	1119	1826	1.0 (Referent)	1.0 (Referent)
75-84	1756	4244	0.68 (0.62-0.74)	0.71 (0.64-0.78)
≥85	1128	3540	0.52 (0.47-0.58)	0.56 (0.50-0.63)
Gender				
Male	1528	4320	1.0 (Referent)	1.0 (Referent)
Female	2472	5283	1.32 (1.23-1.43)	1.32 (1.21-1.44)
Race				
White	3697	8332	1.0 (Referent)	1.0 (Referent)
African American	188	852	0.50 (0.42-0.58)	0.55 (0.46-0.66)
Hispanic	23	140	0.37 (0.24-0.58)	0.70 (0.43-1.14)
Asian	21	86	0.55 (0.34-0.89)	0.80 (0.45-1.40)
American Indian	74	200	0.83 (0.64-1.09)	0.88 (0.65-1.17)
Marital status				
Not	1836	4455	1.0 (Referent)	1.0 (Referent)
Widowed	2167	5155	1.18 (1.12-1.31)	1.24 (1.10-1.39)
Religious faith	2061	4423	1.25 (1.16-1.35)	1.16 (1.07-1.26)
Compromised activities of daily living function‡	2875	6513	1.24 (1.14-1.35)	1.19 (1.08-1.31)
Impaired cognitive performance§	1608	4955	0.63 (0.58-0.68)	0.72 (0.64-0.80)
Depressed mood	1026	1568	1.77 (1.62-1.94)	1.56 (1.41-1.72)
No feeding tube	3816	8920	1.0 (Referent)	1.0 (Referent)
Feeding tubes	183	684	0.63 (0.53-0.74)	0.57 (0.47-0.68)
No catheter	3120	8058	1.0 (Referent)	1.0 (Referent)
Indwelling catheter	827	1502	1.42 (1.29-1.56)	1.16 (1.04-1.30)
No restraints	934	2836	1.0 (Referent)	1.0 (Referent)
Use of restraints‖	3069	6774	1.38 (1.26-1.50)	1.21 (1.10-1.33)
Ambulatory	3213	8900	1.0 (Referent)	1.0 (Referent)
Bedridden	787	697	3.13 (2.80-3.49)	2.60 (2.29-2.97)
Prognosis not terminal	3109	8814	1.0 (Referent)	1.0 (Referent)
Explicit terminal prognosis	894	796	3.18 (2.87-3.53)	2.53 (2.25-2.83)

*Twelve patients have missing pain data.
†Adjusted simultaneously for all the variables listed in Table 1 and variables describing participation in the assessment (family, spouse, resident) and communication skills.
‡Activities of daily living scores are at least 2.
§Cognitive performance scale scores equal 2 or more.
‖Includes trunk and limb restraints as well as chairs to prevent raising.

Table 3—Use of Analgesics by Patients With Cancer*

Analgesic Use	Patient Pain Group, No. (%)	
	Daily (n = 4003)	None (n = 9610)
None	1019 (26)	6053 (63)
Any	2984 (74)	3557 (37)
Nonnarcotic†	659 (16)	2297 (24)
Weak opiates‡	1293 (32)	870 (9)
Morphine or like substances§	1029 (26)	390 (4)

*Twelve patients have missing pain data.
†Classified by the World Health Organization (WHO) as a level 1 drug.
‡Classified by WHO as level 2.
§Classified by WHO as level 3.

severity of illness (eg, explicit terminal prognosis, low body weight defined as body mass index of 19 kg/m^2 or less, presence of feeding tubes, immediate history of radiation or chemotherapy). Using a forward model building approach (not computer driven), we first evaluated crude associations between each independent variable of interest and daily pain. At each stage in the modeling process, we selected the strongest predictor for inclusion in the model, then considered the remaining variables in the presence of those selected for the model. We evaluated and ruled out the presence of collinearity in the model by examining changes in the estimates and their SEs. From the final model, we derived odds ratios (ORs) and corresponding 95% confidence intervals (CIs). Also, we identified predictors of no analgesic use among patients who had daily pain using a similar modeling approach. Statistical analyses were performed using SAS statistical package.[24]

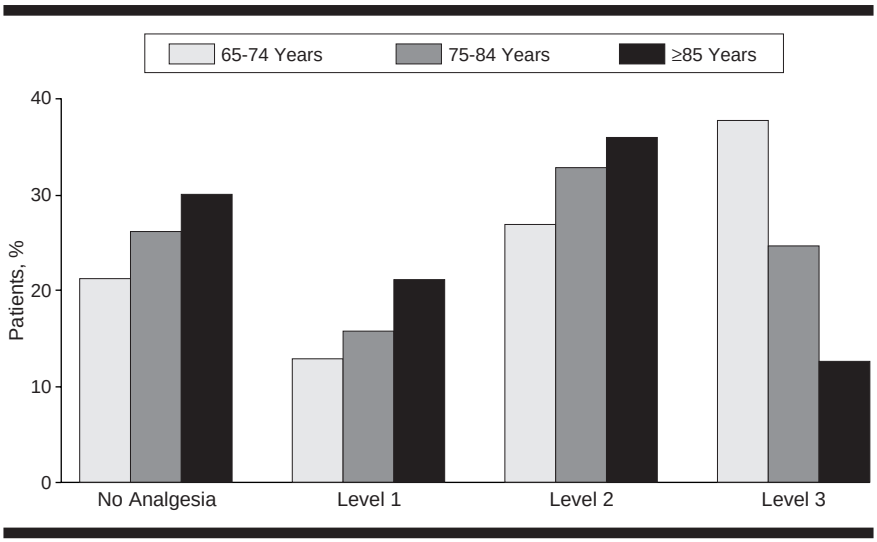
RESULTS

Patients were predominantly female (57%) and white (89%), and had a mean (SD) age of 81 (8) years (65-74 years: n = 2949, 21%; 75-84 years: n = 6004, 44%; ≥85 years: n = 4672, 35%) (Table 1). The prevalence of moderate-to-severe cognitive impairment increased progressively with age, while the opposite was true for depressive symptoms. An explicit terminal prognosis was indicated in 18% of patients aged 65 to 74 years compared with 12% and 9% among patients aged 75 to 84 and 85 years and older, respectively ($P<.001$ for age trend; Table 1). The mean number of active medical conditions increased with age ($P<.001$), but patients aged 85 years and older received fewer drugs than their younger counterparts (6.2 ± 3.9 vs 7.3 ± 4.2 in the 65-year to 74-year group; $P<.001$ for age trend). Daily pain was recorded (after an observation period that lasted, on average, 7 days) in 38% of patients aged 65 to 74 years, 29% in those aged 75 to 84 years, and 24% in those aged 85 years and older. Localized pain—joint, chest, or mouth—did not differ among age groups. In contrast, clinical conditions potentially associated with pain were more prevalent with increasing age. A diagnosis of arthritis was made in 11%, 17%, and 25% of patients in the 65-year to 74-year, 75-year to 84-year, and 85-year and older age groups, respectively; the prevalence was 4%, 7%, and 9% for osteoporosis, and 10%, 14%, and 18% for recent fractures. There were no differences for decubiti, surgical lesions, or amputations.

Table 2 presents the predictors of daily pain. Age was inversely associated with daily pain. Patients from racial or ethnic minority groups were less likely to have pain recorded relative to whites, although the 95% CI included unity for all groups except African Americans. Independent of age, patients with low cognitive performance were less likely to have documented daily pain. Marital status, terminal prognosis, compromised physical function, depressed mood, the presence of an indwelling catheter, and the use of restraints were associated with daily pain.

Table 3 presents the pattern of analgesic drug use among patients stratified by the presence of daily pain. Twenty-six percent of the individuals who reported having daily pain received no analgesics. Nonnarcotic analgesics (WHO level 1) were used by 16% of patients in pain. Weak opiates (WHO level 2) and strong opiates (WHO level 3) were administered in only 32% and 26% of the residents in pain, respectively. Acetaminophen was the most common drug prescribed, accounting for more than 55% of WHO level 1 drugs (27% aspirin, 18% anti-inflammatory drugs). Propoxyphene and codeine (53% and 25% of prescriptions, respectively) among WHO level 2 drugs and morphine and fentanyl (65% and 18% of prescriptions, respectively) among WHO level 3 drugs were the agents used most often. In nearly all cases, a WHO level 1 (93%) and WHO level 2 (97%) drug was administered orally, whereas WHO level 3 drugs were commonly given as skin patches (17%) or by injection (subcutaneous 5%, intramuscular 7%, intravenous 6%).

The Figure reveals the relationship between age and analgesic use. As age in-



Pharmacological treatment of cancer patients with pain according to the World Health Organization's (WHO's) 3-level ladder. The WHO's level 1 is nonnarcotic analgesics; level 2, weak opiates; and level 3, morphine or like substances.

Table 4.—Predictors of Receiving No Analgesia Among Patients With Cancer With Daily Pain

Variable	No Analgesia (n = 1022)	Analgesia (n = 2981)	Univariate Odds Ratio (95% Confidence Interval)	Adjusted Model* Odds Ratio (95% Confidence Interval)
Age, y				
65-74	239	880	1.0 (Referent)	1.0 (Referent)
75-84	451	1305	1.27 (1.06-1.52)	1.19 (1.00-1.45)
≥85	332	796	1.54 (1.27-1.86)	1.40 (1.13-1.73)
Gender				
Male	417	1111	1.0 (Referent)	1.0 (Referent)
Female	603	1869	0.86 (0.74-0.99)	0.91 (0.78-1.07)
Race				
White	927	2770	1.0 (Referent)	1.0 (Referent)
African American	64	124	1.54 (1.13-2.10)	1.63 (1.18-2.26)
Hispanic	8	15	1.59 (0.67-3.76)	1.35 (0.53-3.43)
Asian	7	14	1.49 (0.60-3.70)	1.40 (0.54-3.65)
American Indian	16	58	0.82 (0.47-1.44)	0.84 (0.46-1.54)
No. of medications				
1-5	551	1198	1.0 (Referent)	1.0 (Referent)
6-10	372	1331	0.84 (0.72-0.99)	0.85 (0.72-1.00)
≥11	99	452	0.66 (0.52-0.84)	0.65 (0.50-0.84)
Compromised activities of daily living function†	748	2127	1.08 (0.92-1.27)	1.10 (0.91-1.31)
Impaired cognitive performance‡	458	1150	1.29 (1.12-1.49)	1.23 (1.05-1.44)
No restraints	241	693	1.0 (Referent)	1.0 (Referent)
Use of restraints	781	2288	1.09 (0.87-1.38)	1.09 (0.87-1.38)
Ambulatory	852	2361	1.0 (Referent)	1.0 (Referent)
Bedridden	170	617	0.76 (0.63-0.92)	0.80 (0.65-0.99)
Prognosis not terminal	827	2282	1.0 (Referent)	1.0 (Referent)
Explicit terminal prognosis	195	699	0.77 (0.65-0.92)	0.74 (0.60-0.90)

*Adjusted simultaneously for all the variables listed in Table 1 and variables describing participation in the assessment (family, spouse, resident) and communication skills.
†Activities of daily living scores are at least 2.
‡Cognitive performance scale scores equal 2 or more.

creased, a greater proportion of patients in pain received no analgesic drugs (21%, 26%, and 30% of patients in the 65-year to 74-year, 75-year to 84-year, and 85-year and older age groups, respectively; $P<.001$ for age trend). Patients aged 85 years and older received morphine or other strong opiates one third less frequently than patients aged 65 to 74 years (13% vs 38%, respectively; $P<.001$).

The use of adjuvant drugs was relatively uncommon. An adjuvant was given to 27% of patients in pain who were already receiving a WHO analgesic drug, with no age-related differences. Use of corticosteroids (10%), antineoplastic hormones (9%), and anesthetics (2%) was not correlated with a complaint of pain or analgesic use. Antidepressants were used in 12% of those taking an analgesic agent as compared with 9% of those who were not. Similarly, benzodiazepines were taken by 9% of patients taking analgesics and 4% of others.

The age-related differences in the use of narcotic analgesics could not be accounted for by potential contraindications. As age increased, a decrease in the prevalence of seizures (8% in patients aged 65-74 years vs 3% in those aged ≥85 years), dyspnea (17% vs 11%), vomiting (7% vs 5%), and hallucinations (3% vs 2%) was observed. Constipation (26%), dizziness (3%), and syncope (1%) did not differ by age.

Table 4 shows predictors of analgesia use among persons with cancer in daily pain. Patients older than 75 years were more likely to have no analgesia relative to patients aged 65 to 74 years (OR, 1.27; 95% CI, 1.06-1.52; and OR, 1.54; 95% CI, 1.27-1.86, for patients aged 75-84 and ≥85 years, respectively). This association remained significant in a multivariable model adjusting for several variables, including gender, cognitive status, communication skills, and indicators of disease severity, such as explicit terminal prognosis, being bedridden, number of diagnoses, and the use of other medications. Minority patients were more likely to receive no analgesia. In the adjusted model, African Americans appeared to have a 63% increased probability of being untreated relative to whites (OR, 1.63; 95% CI, 1.18-2.26). Similar results were observed for patients belonging to other race minority groups, although the CIs were wide because of small numbers.

COMMENT

This study reveals that between 25% and 40% of elderly patients with cancer experience daily pain. We found a strong inverse correlation between the presence of pain and increasing age and an equally strong relationship between pain and belonging to minority groups.

While data describing the extent of cancer pain in the elderly are sparse, 2 studies that included the elderly estimated that more than half the patients had pain.[10,25] No physiologic changes in pain perception in the elderly have been demonstrated.[26] In fact, the elderly may experience more pain than younger people,[27,28] although they may be less likely to complain of it.[29] However, the assessment of pain in elderly individuals with cancer may pose significant and specific challenges.[30] Residents may be reluctant to report pain, often viewing it to be an expected concomitant of aging. The presence of multiple concurrent medical problems, the increased likelihood of cognitive[31] and sensory impairment,[32] and the presence of depression[33] may all contribute to underreporting of

pain. Our study revealed that impaired cognitive function was independently associated with a decreased notation of pain, as reported by others.[31,32] However, several authors have suggested that there appears to be no valid difference of pain complaints among cognitively intact and markedly impaired individuals,[34,35] yet the issue remains controversial.[36,37] The relationship between depression and pain may suggest that elderly patients with depression are more sensitive to pain caused by the coexisting physical condition, as others have concluded.[33-38]

Women were more likely than men to have pain recorded. Recent experimental data would support the notion of a biologically different susceptibility,[39] but an increased interaction with staff might have favored the recording of pain in men.[40] Yet, women with cancer appear to have more knowledge than men about pain and its management.[41]

Minority patients were also less likely than whites to have pain recorded even after adjustment for language differences. Statistical significance was reached only for African Americans, but a similar trend was noted for Hispanics, Asians, and American Indians. These results are concordant with recent findings by Cleeland et al,[42] who speculated that language barriers accounted for some or all of these differences. Indeed, cultural and linguistic backgrounds affect ratings of pain's interference with physical function, mood, and sleep.[43] Furthermore, there is evidence that Hispanics are more reluctant to report pain and, like African Americans, less willing to complete advanced directives.[44] We found that of those in daily pain, about one fourth of patients did not receive any analgesic medications. Older individuals were less likely to receive any analgesia, especially morphine or another WHO level 3 drug.

Overall, these findings are in agreement with the notion that there are age and racial or ethnic differences in the management of patients with cancer.[45-47] More specifically, our data concur with those of Cleeland et al,[10] who reported that outpatients aged 70 years or older with cancer were less likely to receive adequate analgesic treatment than a younger population.[10] In the same study, members of ethnic groups, when in pain, also were less likely to receive analgesic treatment when compared with whites. In a more recent report, the same authors confirmed and extended these results, noting that 65% of minority patients who had pain received inadequate analgesia compared with 50% of nonminority patients.[42]

Elderly and minority cancer patients may receive inadequate analgesia in part due to an underestimation or underreporting of pain. In the study by Cleeland et al,[42] Hispanics reported more frequently concerns about receiving too many analgesics and were more worried about side effects. Some authors have suggested that older patients also may have less knowledge about pain management and a disproportionate fear of addiction.[41] Of interest, elderly patients and especially those aged 85 years and older in our study appeared to have fewer possible contraindications to the use of opiates than younger persons. With regard to racial or ethnic minority patients, no data are available to determine whether cultural, social, or economic factors could explain our findings, or whether more disturbing hypotheses should be formulated.

Several limitations of our study need to be recognized. Although the MDS is a standardized, comprehensive assessment instrument, and each of its components are a prerequisite to effective pain management,[30] the recording of pain was not a special focus. Pain was assessed based on observational evaluation of the nursing home staff, and the potential for underestimation remains a concern, especially so among older patients or those with difficulty communicating. However, in 86% of cases, regardless of age, patients were the primary source of information, although the participation of family members in completing the MDS assessment increased progressively with the age of patients. This was true although communication skills (eg, the ability to understand others or to make oneself understood) were only slightly worse in those aged 85 years and older. Consistent with previous reports, family members of Hispanic and Asian patients were more frequently involved in the collection of information. Interestingly, this would likely result in a bias toward overreporting of pain.[48,49]

The proportion of patients in pain in all groups was lower than that found in some other studies because we included only daily pain. Despite being a more restricted observation, this symptom unquestionably deserves attention. We were not able to identify the site of pain with certainty and were unable to attribute the pain to cancer definitively. However, other studies on the relationship of pain to a given cancer site also did not reveal a consistent relationship.[10,50,51]

The use of analgesics refers to the first 7 to 15 days in the facility only, and therefore no statements can be made about pain management in those residents who lived longer in the facility. No data about analgesic dose or frequency of administration are presented. Although these issues warrant further study, it has been noted that as age increases, both the dose and frequency of administration of analgesic drugs decrease progressively.[52] No specific intervention was made for patients as a result of this study because it was observational. However, ongoing research should help better define high-risk groups to target for improved pain control.

The results of our study are not generalizable to all elderly cancer patients. This study focused on patients admitted to nursing homes following discharge from a hospital. This is the group for which we could verify conclusively the diagnosis of cancer and identify the specific nature of the neoplasm. Usually when persons are sent from a hospital to a nursing home, staff receive considerable medical information including the need for pain medication. Financial issues were unlikely to play a role in whether pain medications were provided since all the patients, regardless of their own insurance status, had Medicare coverage extended to include medication costs. Geographical, market, and facility variations could have existed, although we repeated the entire set of analyses varying the inclusion criteria of the study sample and the results were consistent across all samples studied.

In conclusion, a practical solution to the management of persons with cancer pain in long-term care facilities is required, as recently attempted in acute care hospitals.[53] Any approach must take into account barriers to appropriate pain management such as the unwillingness of many nursing homes to stock opiates, inadequate staff to provide and monitor frequent analgesia administration, and the inadequate knowledge and failure of many physicians to use analgesic agents aggressively.[54] Experts agree about the need to educate individual clinicians and patients to influence their routine behaviors.[54] Disappointingly, in a recent multicenter trial, enhancing opportunities for more patient-physician communication did not change established practices.[55] Other projects have suggested that other strategies may be more effective.[56,57] Failure to prevent and/or treat pain effectively at virtually all times is no longer acceptable and should be considered a first-line indicator of poor quality of medical care.

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eral sectors is downright illegal, and university employees fall under Department of Labor workplace standards and laws for their respective states.

Universities have serious ethical and credibility problems if they have such poor control over their employees that they cannot promise to protect individuals from actions contrary to their own grievance policies and that are probably illegal. Favoritism toward senior faculty (eg, in the form of a university "blind eye" to abuses) is probably a major factor in many of the problems surrounding authorship. In a sense, it sends the message that "crime pays."

I am also concerned that legal issues of intellectual property were not discussed. The meaning of authorship in the academic sense seems quite different from authorship in the legal sense. Universities are not above the law. They are subject to US and international laws on intellectual property, such as copyright and patent law. These laws make it clear that only tangible, written work is copyrightable and that the person who creates the tangible expression "owns" the work (holds the copyright) unless work-for-hire or other legal co-owner agreements apply.[2]

I suggest that one way to clear up the controversies over intellectual property and accreditation is for universities to bring their policies in line with the law of the land and to enforce such policies firmly, fairly, and uniformly.

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1. Wilcox LJ. Authorship: the coin of the realm, the source of complaints. *JAMA*. 1998;280:216-217.
2. Copyright Law of the United States of America, Ownership of Copyright Act, 17 USC § 201 (1976).

In Reply: One can agree with Dr Silverstein's sentiments without necessarily coming to the same conclusions regarding the most practical ways to address authorship problems. My own institution makes significant efforts to provide effective redress for those who feel they have been treated unfairly in an authorship dispute. Both formal grievance procedures and informal actions (through the ombudsman's office) are available as alternatives to normal departmental channels. Nevertheless, the reality is that the master-journeyman-apprentice system of medical research makes it possible for retaliation against whistle-blowing to take place, often years later. It would be irresponsible and unfair to state that formal procedures can guarantee complainants that there will be no ill effects of their bringing such disputes to light.

Formal policies for redress and protection are essential tools for promoting fair treatment. Sensitivity to legal rights and requirements is very important, as Silverstein suggests, but insufficient. That is why I suggest a 3-pronged approach of formal policies, informal confidential dispute resolution tools such as an ombudman's office, and better training of laboratory and department heads to protect against a culture in which unfair assignment of credit is tolerated.

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CORRECTIONS

Incorrect Wording: In the Original Contribution entitled "Management of Pain in Elderly Patients With Cancer" published in the June 17, 1998, issue of THE JOURNAL (1998;280:1877-1882), there was incorrect wording in the abstract and in the text. On page 1877, under "Results" in the abstract, the fourth sentence should have read "Patients aged 85 years and older were less likely to receive morphine or other strong opiates than those aged 65 to 74 years (13% vs 38%, respectively)." On page 1880, in the first column, the last sentence should have read "Patients aged 85 years and older received morphine or other strong opiates one third less frequently than patients aged 65 to 74 years (13% vs 38%, respectively; $P<.001$)."

Author's Name Misspelled: In the A Piece of My Mind entitled "Don't Call Me 'Larry'," published in the October 28, 1998, issue of THE JOURNAL (1998;280:1385), the author's name was misspelled. The author's name is Adrienne Reiner Hochstadt (not Hockstadt).

Incorrect Row Headings in Table: In the Original Contribution entitled "Increased Levels of Cigarette Use Among College Students: A Cause for National Concern," published in the November 18, 1998, issue of THE JOURNAL (1998;280:1673-1678), the row headings "Public" and "Private" were inadvertently switched in Table 5. The conditional odds ratio for public colleges should have been 1.20 (95% confidence interval, 1.12-1.29), and the conditional odds ratio for private colleges should have been 1.00.