

CLINICAL INQUIRIES

From the Family Practice Inquiries Network

Which late-stage Alzheimer's patients should be referred for hospice care?

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EVIDENCE-BASED ANSWER

Medicare guidelines are used to determine eligibility for hospice care (strength of recommendation [SOR]: **C**, based on expert opinion), but they correlate with 6-month mortality no better than an experienced clinician's judgment (SOR: **B**, based on 1 cohort study). Recent studies, however, have identified additional criteria that may better predict survival in select populations. These prognostic criteria include stepwise progression to Functional Assessment Staging Scale (FAST) stage 7c (inability

to walk without assistance) (SOR: **A**, based on 2 small prospective cohort studies) and criteria derived from the Minimum Data Set (MDS) which include: dependency for activities of daily living, bedbound status, bowel incontinence, comorbid conditions (specifically cancer, congestive heart failure, oxygen dependence, or dyspnea), medical instability, eating <25% of meals, sleeping most of the day, male gender, and age >83 years (SOR: **B**, based on a large retrospective cohort study).

CLINICAL COMMENTARY

Combination of factors helps to estimate prognosis for patients with late-stage Alzheimer's

Medicare beneficiaries must have an estimated life expectancy of less than 6 months to be eligible for hospice in the US. Predicting the life expectancy of patients with Alzheimer's disease is difficult, but those with advanced age, impaired nutritional status, increased functional impairment, and comorbid conditions have shorter survival times with greater 6-month mortality rates. These variables should be used in addition to the current Medicare guidelines in discussing a patient's prognosis with family members and determining when a hospice referral is appropriate.

Physicians should identify opportunities to introduce hospice as an option within the early care continuum of an Alzheimer's patient and in end-of-life discussions. A sensitive discussion about hospice care can ease the suffering and confusion of patient and family in making this difficult decision. In my experience, deferring discussions about hospice may deprive patients and family of comprehensive care at home, emotional support, spiritual resolution, and financial protection.

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■ Evidence summary

Medicare adapted the National Hospice Organization guidelines to determine patients' eligibility for hospice care.¹

Recent studies, however, have identified additional prognostic criteria that may better predict survival of less than 6 months in select populations (**TABLE**).

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TABLE

**Prognostic factors and accuracy
for 6-month survival in Alzheimer's dementia**

CITATION	PROGNOSTIC FACTOR	PROGNOSTIC ACCURACY
NHO ^{1,6} (1995)	(Medicare Guidelines) FAST stage 7a* [†] ; cannot walk without assistance; incontinence; no meaningful communication; comorbid infection, fever, pressure ulcers, or weight loss	Validity was comparable with clinical assessment by the attending
Luchins ² (1997)	FAST stage 7c**	Mean survival=3.2 mo
Hanrahan ³ (1999)	FAST stage 7c [†]	Mean survival=4.1 mo 71% died in 6 mo
Mitchell ⁴ (2004)	In nursing home residents with Cognitive Performance Score 5 or 6 Sum of hazard ratios of 12 MDS components ≥ 12	70% risk of death within 6 months
Morrison and Siu ⁵ (2000)	GDS stage 6 [‡] or worse, age >70, hospitalized with hip fracture or pneumonia	~ 53% died in 6 months

NHO, National Hospice Organization; FAST, Functional Assessment Staging Scale; GDS, Global Deterioration Scale.

*FAST stage 7a: speaks 5–6 words per day, and still able to ambulate.

† FAST stage 7c: unable to walk without assistance; reached this stage in ordinal (stepwise) fashion; FAST stage 7b: speech limited to single word per average day; see www.hospice.org/pdf/webdementia.pdf for details about the FAST scale.⁶

‡ GDS stage 6: dependent in activities of daily living and unaware of recent events and experiences; forgets name of spouse or children. See www.geriatric-resources.com/html/gds.html for more details.⁷

Schonwetter and colleagues¹ conducted a retrospective chart audit of 165 patients, and a subsequent prospective cohort study of 80 patients at comparable stages of progressive dementia who were consecutively admitted to a community-based hospice program. These patients had estimated life expectancy of less than 6 months, as certified by the attending and the hospice medical director, without use of explicit guidelines. The survival curves for patients who, in retrospect, did and did not meet Medicare guidelines were similar; the Medicare guidelines were not statistically better at predicting 6-month survival than the clinical impressions of the attending and hospice medical director.

In the 139 patients from the retrospective cohort included in the Cox regression analysis, 108 patients died within 6 months. Of those, 83 (77%) met Medicare criteria and 25 (23%) did not. Of the 31 who lived longer than 6 months, 22 (71%) met

Medicare criteria and 9 (29%) did not. In the prospective cohort, of the 61 patients who died within 6 months, 39 (64%) met Medicare criteria and 22 (36%) did not; of the 18 who lived longer than 6 months, 9 met Medicare criteria (50%) and 9 did not.¹

More recent studies have looked at the FAST, MDS, and Global Deterioration Scale (GDS) to identify criteria for predicting 6-month mortality. The FAST rating is based on the lowest level of function on a scale ranging from 1 (normal) to 7f (unable to hold up head). The GDS is similar to the FAST, and also ranges from 1 to 7. A rating of 5 is given to people with moderately severe cognitive decline; 6 is severe cognitive decline.

Two prospective cohort studies followed 47 and 45 patients enrolled in hospice over 2 years; these studies demonstrated that patients who reach FAST stage 7c (inability to walk without assistance) in a stepwise fashion are likely to live less than

FAST TRACK

Deferring discussions about hospice may deprive patients of comprehensive care at home, emotional support, and financial protection

6 months.^{2,3} In 1 of the 2 studies, patients who reached stage 7c ordinarily had a mean survival time of 4.1 months; 71% died within 6 months of enrollment. For the large subset of patients who met 7c but not in an ordinal fashion (ie, they met criteria for 7c, but perhaps not 7a or 7b), only 30% died within 6 months, with median survival time 10.7 months.

Use of antibiotics did not make a statistically significant difference in survival, and use of Foley catheters was associated with shorter survival times (3.6 months vs 9 months; $P < .03$).³ In the other study, however, less aggressive care plans resulted in shorter survival times ($P < .01$).²

In a retrospective cohort study of 11,430 nursing home residents with advanced dementia (defined as a score of 5 or 6 on the Cognitive Performance Score, which is itself based on MDS data, a prognostic summary score was developed using 12 variables from the MDS, a federally mandated assessment completed by nursing home staff at the time of admission.⁴ A high score predicted 6-month mortality more accurately than using an MDS correlate of FAST stage 7c. In the derivation cohort ($n=6799$), 28.3% ($n=1922$) died within 6 months; in the validation cohort ($n=4631$), 35.1% ($n=1626$) died within 6 months. The FAST 7c correlate was found to have a positive predictive value of only 38.5% and a sensitivity of 22% in predicting death within 6 months in this population. In contrast, using the MDS variables, a higher threshold for the prognostic summary score resulted in a positive predictive value of 80%, negative predictive value of 73%, specificity of 99%, but sensitivity of only 6%. A lower cutoff yielded better sensitivity (23%), and still had good specificity (96%) and negative predictive value (76%), though the positive predictive value was slightly lower (67%).

Morrison and Siu conducted a prospective cohort study of consecutive patients admitted with hip fracture or pneumonia to a single New York hospital over an 18-month period.⁵ Survival rates of 118 advanced dementia patients, defined

by a GDS score of 6 or 7, were compared with survival rates of 98 patients without dementia. At 6 months, 42 (53%) of 80 pneumonia patients with end-stage dementia had died, compared with 5 (13%) of 39 cognitively intact patients with pneumonia (adjusted hazard ratio=4.6 [95% CI, 1.8–11.8]). At 6 months, 21 (55%) of 38 hip fracture patients with end-stage dementia had died, compared with 7 (12%) of 59 cognitively intact patients with hip fracture (adjusted hazard ratio=5.8 [95% CI, 1.7–20.4]). Of note, the end-stage dementia patients with hip fracture or pneumonia were 6 and 4 years older, respectively, than cognitively intact patients. In addition, the dementia patients were more likely to reside in nursing homes (82% vs 5% with hip fracture, 63% vs 5% with pneumonia). A palliative care plan was not identified for any of these patients during the admission.

Recommendations from others

Guidelines for Medicare reimbursement for hospice care of demented patients is outlined in the see first row of the **TABLE**.⁶

REFERENCES

- Schonwetter RS, Han B, Small BJ, Martin B, Tope K, Haley WE. Predictors of six-month survival among patients with dementia: an evaluation of hospice Medicare guidelines. *Am J Hosp Palliat Care* 2003; 20:105–113.
- Luchins DJ, Hanrahan P, Murphy K. Criteria for enrolling dementia patients into hospice. *J Am Geriatr Soc* 1997; 45:1054–1059.
- Hanrahan P, Raymond M, McGowan E, Luchins D. Criteria for enrolling dementia patients in hospice: a replication. *Am J Hosp Palliat Care* 1999; 16:395–400.
- Mitchell SJ, Kiely DK, Hamel MB, Park PS, Morris JN, Fries BE. Estimating prognosis for nursing home residents with advanced dementia. *JAMA* 2004; 291:2734–2740.
- Morrison RS, Siu AL. Survival in end-stage dementia following acute illness. *JAMA* 2000; 284:47–52.
- Hospice of Southern Illinois, Inc web site. Criteria for dementia/Alzheimer's disease. Available at: www.hospice.org/pdf/webdementia.pdf. Accessed on October 11, 2005.
- Geriatric Resources, Inc. web site. Global deterioration scale. Available at: www.geriatric-resources.com/html/gds.html. Accessed on October 11, 2005.

FAST TRACK

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