

## FAST FACTS AND CONCEPTS #150 PROGNOSTICATION IN DEMENTIA

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**Background** Dementia is a syndrome of acquired and persistent impairment in cognition and intellectual functioning (1). When caused by certain diseases or injury, dementia is irreversible, leading to progressive brain failure and death. This *Fast Fact* reviews issues of prognostication in dementia.

**Natural history of dementia** Olson (2003) classifies dementia into four functionally defined categories: mild, moderate, severe, and terminal. 'Terminal dementia' is defined as loss of communication, ambulation, swallowing, and continence. Others use the term "end-stage" or "advanced" making interpretation of prognostic data challenging. Many prognostic factors have been associated with shortened survival: male gender, age, diabetes mellitus, CHF, COPD, cancer, cardiac dysrhythmias, peripheral edema, aspiration, bowel incontinence, recent weight loss, dehydration, fever, pressure ulcers, seizures, shortness of breath, low oral intake, not being awake for most of the day, low Body Mass Index, and recent need for continuous oxygen. A 2012 systematic review found that malnutrition, feeding issues, and dysphagia were the strongest associated factors with 6 month mortality in elderly patients with advanced dementia. Simply being admitted to the hospital with acute illness and end-stage or terminal dementia is associated with a particularly poor prognosis: the six month mortality after hospitalization for pneumonia was 53% compared with 13% for cognitively intact patients. For patients with a new hip fracture, 55% of end-stage dementia patients died within 6 months compared with 12% for cognitively intact patients (Morrison 2000).

**Prognostic Systems** (see table below):

- I. The National Hospice and Palliative Care Organization (NHPCO) recommends the *Functional Assessment Staging* (FAST), a 7-step staging system, to determine hospice eligibility. The FAST identifies progressive steps and sub-steps of functional decline. NHPCO guidelines state that a FAST stage 7A is appropriate for hospice enrollment, based on an expected six month or less prognosis, if the patient also exhibits one or more specific *dementia-related co-morbidities* (aspiration, upper urinary tract infection, sepsis, multiple stage 3-4 ulcers, persistent fever, weight loss >10% within six months). Luchins (1997) studied the relationship of FAST to survival in 47 patients enrolled in hospice with advanced dementia and one or more dementia-related co-morbidities. The median survival for all patients was 6.9 months; 38% survived beyond six months. Of note, 41% of patients did not demonstrate dementia progression in a manner that allowed for assigning a FAST stage. For those patients who could be assigned a FAST stage (n = 12), and who were at stage 7C or greater, mean survival was 3.2 months. The generalizability and clinical relevance of this data are greatly compromised by this very low patient number.
- II. The *Mortality Risk Index* (MRI), a composite score based on 12 risk factor criteria obtained from using the MDS (Minimum Data Set), has been suggested as an alternative to FAST. Mitchell (2004) developed and then validated the MRI by examining data from over 11,000 newly admitted nursing home patients. Among patients with a MRI score of  $\geq 12$ , 70% died within 6 months (mean survival time not reported). Compared to FAST Stage 7C, the MRI had greater predictive value of six month prognosis. The MRI as only been evaluated in newly admitted nursing home residents; it has yet to be validated in the community setting or for previously established long-term nursing home residents.

**Medical Interventions** Estimation of prognosis in severe/terminal dementia is in part dependent on the goals of care and decisions regarding the level of intervention that will be provided to treat acute medical problems such as urosepsis and malnutrition.

**Summary** Although many prognostic risk factors have been identified there is no gold standard to help clinicians determine a less than six months prognosis with any degree of certainty. The criteria adopted by NHPCO for hospice eligibility is based on very limited research and lacks important studies to determine FAST scale reliability and validity among referring physicians and hospice staff. The MRI is a promising new scale but more research is needed. Physicians can best help their patients by working with families

to help them establish goals of care and levels of medical intervention that are most consistent with current medical research and family/patient preferences.

### Functional Assessment Staging (FAST)

#### Stages

1. No difficulties
2. Subjective forgetfulness
1. Decreased job functioning and organizational capacity
4. Difficulty with complex tasks, instrumental ADLs
5. Requires supervision with ADLs
6. Impaired ADLs, with incontinence
7. A. Ability to speak limited to six words  
B. Ability to speak limited to single word  
C. Loss of ambulation  
D. Inability to sit  
E. Inability to smile  
F. Inability to hold head up

### Mortality Risk Index Score (Mitchell)

#### Points Risk factor

- |     |   |
|-----|---|
| 1.9 | Complete dependence with ADLs             |
| 1.9 | Male gender                               |
| 1.7 | Cancer                                    |
| 1.6 | Congestive heart failure                  |
| 6.  | O <sub>2</sub> therapy needed w/in 14 day |
| 1.5 | Shortness of breath                       |
| 1.5 | <25% of food eaten at most meals          |
| 1.5 | Unstable medical condition                |
| 1.5 | Bowel incontinence                        |
| 1.5 | Bedfast                                   |
| 1.4 | Age > 83 y                                |
| 1.4 | Not awake most of the day                 |

#### Risk estimate of death within 6 months

<u>Score</u>	<u>Risk %</u>
0	8.9
1-2	10.8
3-5	23.2
6-8	40.4
9-11	57.0
≥ 12	70.0

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