A 76-year-old woman comes to your office for her routine annual visit. She’s been doing well since you last saw her, has no complaints, and is in her usual state of health. She has a history of hypertension that has been well controlled on hydrochlorothiazide. She attends the local senior center weekly, participates in Tai Chi every morning and volunteers at the local elementary school on weekdays. You have seen her regularly and she is up to date with influenza and pneumococcal vaccines, had a normal colonoscopy 4 years ago, and normal yearly mammograms, which she has decided to continue as long as she is active and independent. Today, she asks you about dementia screening, because her best friend was just diagnosed with Alzheimer’s and is now on donepezil. You ask her targeted questions about her memory, functional status and ask whether she or her family have noted any deficits or problems; she reports none.

Dementia is a major cause of morbidity and mortality in the older patient population, as well as in younger, more active adults, who are just beginning their “leisure years”. It is estimated that about 8% of adults over 65 years old have dementia; for those over 85 years old, the number jumps to 30-40%.1 This translates to more than 4 million people.1

Dementia care is estimated to exceed $100 billion per year.2 The per person, per year cost for formal health care (long term care, medications, acute care and emergency visits) is estimated at $27,672, and the cost of informal care (caregiver and private home care) ranges from $10,400 to $34,517.2 These figures do not include the social costs of a debilitating disease that can ravage a family, and almost always results in permanent nursing home placement and loss of independence, personality and the most basic of functional activities. Due to dementia’s dramatic impact, many are considering instituting screening programs. Screening programs would involve asking asymptomatic patients questions about their memory and functional status, and performing cognitive assessment tests (e.g., Mini Mental Status Exam, 7 minute screen, Mini-Cog).

The discussion of screening is difficult, because the treatments we can offer are not curative. The purpose of a screening test is early identification to permit early initiation of therapy that will improve outcomes. Data indicate that cholinesterase inhibitors at best temporarily slow or delay progression of disease and improve measures of cognition on some scales. Most experts describe a delay in progression of approximately 6 to 12 months with use of cholinesterase inhibitors. Studies of donepezil, for example, have demonstrated mixed results. A 24-week, placebo controlled trial demonstrated significant improvements in cognition as measured by several rating scales (Alzheimer’s disease Assessment scale and Clinician’s global ratings).3 There was no effect on quality of life scores. A second placebo controlled trial, AD2000, showed a small but significant improvement in cognition (Mini Mental Status Exam score up by an average of 0.8 points).3 These effects are consistent with several other studies.3 However, the study did not demonstrate a delay in institutionalization.3 Other studies have demonstrated delays in the decline of performance of activities daily living. More consistently demonstrated is that cholinesterase inhibitors have a positive effect on the behavioral complications of dementia.

An additional argument in favor of dementia screening is that there are conditions, albeit rare, that cause dementia but are not due to underlying neurodegeneration or stroke. These rare situations result from an array of metabolic disorders, CNS infections, nutritional deficiencies, drug toxicities and even psychiatric conditions. But even if these “reversible dementias” are rare, the more common circumstance is that the dementia due to neurodegeneration or stroke is made worse by the effects of the superimposed comorbidity.

The question to the patient then becomes a personal one: “when would you want to know”? As discussed above, the argument for screening is colored by the fact that we cannot alter the outcome, only delay it at best. However, allowing patients and families to do advance care and estate planning in the earlier, more functional stages is often argued as a large benefit of earlier detection. There are people who prefer to know, regardless of the answer, and who would worry more about the chance of the disease than the disease itself. But some might be crippled by the knowledge and lose day-to-day enjoyment and quality of life due to their anxiety about the future. No studies demonstrate psychosocial benefits to patients or their caregivers through earlier detection.4

A good screening test is evaluated by its sensitivity and specificity for the disease or condition. Many of the cognitive tests that are routinely used to evaluate for cognitive impairment have met the desired sensitivity and specificity cut offs. However, a valuable screening test must also have a high positive predictive value5 to be sure that patients are correctly identified as having the disease. The positive predictive value should be higher than the disease prevalence, a criterion on which many cognitive tests for dementia fail. In addition, there must follow a discussion of cost-effectiveness. A screening study should, thinking pragmatically, not only impact mortality and morbidity, but also the financial and resource burden on the...
health care system. No evidence supports the hypothesis that earlier diagnosis will ameliorate costs to our health care system. In fact, many speculate that early detection will increase costs due to increased physician and support staff time, longer duration of use of medications (6 month cost of Aricept is almost $1000), and longer use of community and health care resources.

For many of the reasons discussed, the current recommendation by the US Preventative Services Task Force is an “I” recommendation, indicating insufficient evidence to recommend for or against dementia screening.

“Rationale: The USPSTF found good evidence that some screening tests have good sensitivity but only fair specificity in detecting cognitive impairment and dementia. There is fair to good evidence that several drug therapies have a beneficial effect on cognitive function (equivalent to delaying the natural progression of Alzheimer’s disease from 2 to 7 months), but the evidence of their beneficial effects on instrumental activities of daily living is mixed, with the benefit being small, at best. There is insufficient evidence to determine whether the benefits observed in drug trials are generalizable to patients whose disease would be detected by screening in primary care settings. The accuracy of diagnosis, the feasibility of screening and treatment in routine clinical practice, and the potential harms of screening (e.g., labeling effects) are also unknown. The Task Force therefore could not determine whether the benefits of screening for dementia outweigh the harms.” http://www.ahrq.gov/clinic/3rduspstf/dementia/dementrr.htm

Using objective criteria to evaluate a screening test, dementia screening does not pass the bar. However, many professional organizations recommend screening and early intervention. As better treatments emerge, a concerted screening effort will follow. For now, individualized conversations with patients, discussing the evidence for screening, the likely results of treatment and the impact on quality of life are the best course of action.

What to do with our patient? She has no symptoms of cognitive impairment, and is high functioning and active. Reassurance with a discussion of the rationale above, and plans to follow closely with screening if she strongly desires, or develops any symptoms or concerns would be a reasonable approach.

Further reading and practice guidelines:


USPSTF rationale: http://www.ahrq.gov/clinic/3rduspstf/dementia/dementrr.htm

REFERENCES

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Disclosure of Financial Interests
The author has no financial interests to disclose.