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Dementia in the Elderly: Avoiding the Pitfalls

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Emergency department (ED) encounters involving older patients with cognitive impairment are common. The incidence of dementia increases dramatically in the very elderly, the fastest growing subset of our geriatric population. Dementia is also prevalent in nursing home patients, who are often transferred to the ED for evaluation. The presence of dementia, which may not be recognized or documented, makes the evaluation of the older patient even more difficult. An accurate history may not be obtainable, which can lead to diagnostic uncertainty and more extensive work-ups. Dementia also has important implications for medical decision making and patient disposition. Furthermore, as the number of older ED patients increases, we can expect to see more patients presenting primarily for evaluation of cognitive impairment. Since some causes, such as depression or hypothyroidism, are potentially reversible, an accurate evaluation becomes even more critical.

This issue examines the topic of dementia with an emphasis on etiologies, including potentially reversible causes; rapid ED assessment using simple screening tools; and avoiding pitfalls, such as differentiating dementia from delirium. Future issues will examine mental status changes in the elderly and delirium in greater detail.

— The Editor

Introduction

As the proportion of elderly in the population continues to increase, emergency physicians are likely to encounter geriatric issues with increasing frequency. The emergency department (ED) evaluation of these patients is often challenging. In one survey, the majority of emergency physicians indicated that the evaluation of common clinical problems, such as chest pain and altered mental status, was more difficult and time-consuming for older patients. They also reported insufficient training and very few continuing medical education hours on geriatric emergency medicine topics.[1] Because of the emphasis on illnesses of high acuity in the ED, there may be a lack of understanding and recognition for less acute but equally important age-specific disease processes in the geriatric ED patient. One of the most common of these is the syndrome of dementia. There is a high prevalence of dementia in older ED patients. One study found one-third of geriatric ED patients had unrecognized cognitive impairment.[2] This significant finding has important implications for emergency physicians. Obtaining an accurate medical history may be difficult in these patients. In addition, these patients carry a special risk for adverse outcomes after ED evaluation. The presence of dementia in the elderly patient can affect medication and discharge instruction compliance, resulting in an increased morbidity and mortality. Lack of recognition and delay in treatment may also contribute to poor long-term outcome. Emergency physicians are in a unique position to aid these patients. In order to achieve this, an increase in physician education and awareness is needed.

Definition

Dementia is a clinical syndrome described by a chronic, pathologic loss of intellectual function severe enough to interfere with daily social or occupational activities.[3,4] It differs from the mild cognitive impairment associated with normal aging,[5] which does not significantly interfere with daily functioning. The hallmark of dementia is a progressive deterioration of

memory. In order to confirm the diagnosis, patients must also exhibit at least one other deficit in cognitive function. *(See Table 1.)* This may include a language disturbance (aphasia), agnosia (difficulty recognizing or identifying familiar objects despite intact sensory function), apraxia (difficulty executing learned motor tasks despite intact motor function), or impairment in executive functioning (planning, organizing, abstracting, etc.).[6]

Epidemiology

Although dementia can occur in nearly all age groups, it is primarily a disease of the elderly. Prevalence ranges from 10% to 17% in those older than age 65, but increases dramatically as age progresses.[7-11] Approximately 1% of patients age 60 have dementia, while it affects nearly 50% of those 85 years and older.[12] There is no single cause or pathologic process responsible for dementia. More than 55 different illnesses can bring about the clinical syndrome.[13]

Dementia has a tremendous effect on both society and the health care system. Patients with dementia utilize a larger proportion of health care resources and have a higher morbidity and mortality rate than the general population corrected for age.[9,14] Dementia is also one of the leading contributors to the development of long-term functional dependence in the elderly, exceeding coronary artery disease and stroke.[9] This often results in placement of patients with dementia into extended care facilities, where extensive resources are devoted to the care and assistance of these patients. Family members caring for these patients are also affected. Those surrounding the patient frequently suffer from related depression and social stress.[15] The scope of dementia's effect on the health care system will continue to grow. The prevalence and mortality from dementia are expected to increase exponentially in the United States over the next 20-40 years, along with the rapid expansion of the geriatric population.[16-18]

Table 1. Definition of Dementia[6]

1. Chronic impairment of memory of such severity as to interfere with daily, social or occupational activities with at least one of the following additional deficits:
   - aphasia
   - agnosia
   - apraxia
   - impaired executive functioning
2. Dementia cannot be diagnosed in the presence of delirium.

Etiologies

Etiologies of dementia may be broadly grouped into two categories: those that are potentially curable or reversible, and those that are universally degenerative and progressive. *(See Table 2.)* Many cases of dementia are the result of multiple disease processes. The most common single cause of dementia is Alzheimer's disease, which accounts for more than half of all cases.[3,4] Vascular dementia comprises the next largest group, accounting for 10-20% of all dementia. Nearly all of the remaining cases are accounted for by a variety degenerative disorders, leaving fewer than 1% of causes considered potentially curable or reversible.[4,19] Although most causes of dementia are considered irreversible, there are still a variety of treatments available that can improve symptoms and slow functional decline. It is important to recognize these patients and to refer them for further evaluation and treatment.

Alzheimer's disease is perhaps the most widely recognized form of dementia. It accounts for nearly 50-70% of all cases.[3,4] It is characterized by an irreversible decline in cognitive function, primarily involving memory and language capabilities. Short-term memory is notably affected, and is usually one of the earliest findings. Language impairment may initially manifest as difficulty with word finding in spontaneous speech, and can progress to frank aphasia. In addition to memory and language deficits, patients also have difficulty processing visual and spacial information. This can lead to difficulty identifying or recognizing familiar objects or faces (agnosia) and misperceptions (e.g., mistaking shrubs or trees for people).[4] The inability to perform learned motor tasks (apraxia) is also a feature of Alzheimer's disease. As the dementia progresses, patients develop a progressive disorientation to time and place. This is nearly a universal finding in all patients with Alzheimer's disease.[3]

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Table 2. Some Common Causes of Dementia

TYPE OF DEMENTIA	
Irreversible	***Reversible***
Alzheimer's disease	Normal pressure hydrocephalus
Multi-infarct dementia	Hypothyroidism
Frontotemporal dementia	Vitamin B12 deficiency
Parkinson's disease	Syphilis
Multiple sclerosis	Vasculitis
Huntington's chorea	Adrenal insufficiency
	Cushing's disease
	Chronic subdural hematomas
	Depression (pseudodementia)

Psychiatric symptoms are frequently a part of Alzheimer's dementia as well. Patients may become withdrawn or increasingly hostile. Psychotic features are not uncommon. Hallucinations (predominantly visual) occur in up to 25% of patients;[4] paranoid delusions may be present in up to 50%.[20] Depression and suicidal ideation are also common findings.[21]

Unlike other dementia, disorders of movement (tremor, rigidity) are uncommon in Alzheimer's disease, and are usually present only in advanced cases. Presence of these features early in the course of the dementia should lead to questioning the diagnosis of Alzheimer's disease.

Research continues to aid us in the understanding of the pathophysiology of Alzheimer's disease. The "cholinergic hypothesis" associates cognitive decline with cholinergic neuronal destruction in the brain.[22] The result is an overall deficit of cholinergic neurotransmitter activity. Pathologic formation of B-amyloid leads to characteristic neuritic plaque formation in the brain.[23] Hyperphosphorylated tau-proteins collect to form neurofibrillary tangles.[24]

These processes appear to be concentrated in specific regions of the brain. Nearly all patients with Alzheimer's disease have progressive atrophy of the hippocampal and parahippocampal regions of the temporal lobe. The general cortical atrophy that follows is less specific. PET and SPECT imaging studies frequently reveal severe metabolic and perfusion deficits in the parietal and temporal lobes of Alzheimer's patients as well.[25,26]

The diagnosis of Alzheimer's disease is still confirmed postmortem, with cerebral tissue revealing characteristic neurofibrillary tangle and amyloid plaque deposition concentrated in the temporal and parietal lobes.[27]

A genetic link to Alzheimer's dementia has been strongly implicated. A gene identified on chromosome 19, the apolipoprotein (APOE) 4 allele, has been shown to both increase risk of development and decrease age of onset.[28] Interestingly, the presence of a different allele (APOE-2) has been shown to have a protective effect.[29] Many cases of Alzheimer's disease however, appear to be sporadic and not genetically linked.

Vascular dementia is second in frequency only to Alzheimer's disease in the elderly, and is responsible for approximately 10-20% of all dementia. Unlike Alzheimer's dementia, extrapyramidal dysfunction is not uncommon. Rigidity, masked facies, gait disturbance, and other parkinsonian features may be evident.[30] Co-existing dementia and focal neurologic deficit from prior cerebrovascular insult should always arouse suspicion of vascular dementia. More subtle motor deficits, such as impaired motor reaction time to external stimuli, are often present as well.[31] The course typically fluctuates but is always progressive.

In multi-infarct dementia, associated risk factors for the development of the disease should be present. Patients often have a history of stroke, poorly controlled hypertension, or peripheral vascular disease. Computed tomography (CT) and magnetic resonance imaging (MRI) findings are non-specific but may include visualization of multiple prior lacunar infarcts, white matter low attenuation,[32] including peri-ventricular white matter disease, and generalized atrophy. There are currently no widely accepted criteria for the diagnosis of vascular dementia.[4]

It is important to recognize there are many causes of vascular dementia other than repetitive small infarcts occurring from cerebrovascular disease (multi-infarct dementia [MID]). These include, but are not limited to autoimmune and infectious vasculitis (as with systemic lupus or neurosyphillis); subdural hematomas; and embolic disease (as in endocarditis). These potentially reversible causes must be entertained in the differential diagnosis of the patient presenting with a vascular dementia.

Occasionally, dementia may present with a predominance of psychiatric symptoms. This is the case with frontotemporal dementia (FTD). FTD occurs at an earlier age than most other degenerative dementia, with a mean onset reported at age 56.[33] Subtle personality changes, disinhibition, psychotic features (hallucinations and delusions), and other psychiatric symptoms often precede frank dementia by several years.[33] This often leads to an initial psychiatric diagnosis early in the course of the disease. There may be impairment of executive functioning, including difficulty with planning, goal setting, and speech. Motor dysfunction and parkinsonian features may also develop.[27] There is a strong familial inheritance of frontotemporal dementia, although many cases still appear to be sporadic.[33-35] Neuropathological findings are nonspecific, and include frontotemporal atrophy, gliosis of gray and white matter, and neutrophil vacuolization.[35]

Another common cause of dementia is that seen in Parkinson's disease. Typical movement disorders associated with Parkinson's accompany symptoms of dementia. Dementia with parkinsonism as an early feature often progresses much more rapidly than Alzheimer's dementia.[4]

Although previous studies have suggested that a significant number, estimated at 11%, of cases of dementia are potentially reversible,[36] more recent literature suggests that only approximately 1% are likely to reverse.[4,19] Common causes of reversible dementia include normal pressure hydrocephalus, vitamin B12 deficiency, hypothyroidism, and subdural hematoma. Early evaluation and detection of these reversible causes of cognitive impairment may lead to earlier treatment and, more importantly, improved outcomes.

Normal pressure hydrocephalus (NPH) is characterized by a classic triad of urinary incontinence, ataxia, and cognitive dysfunction. However, the diagnosis should be entertained in all patients presenting with gait disturbance and dementia. A history of urinary incontinence may be lacking in up to 50% of cases.[36] Gait disturbance may present initially as mild unsteadiness and progress to a shuffling gait as in Parkinson's disease. Cognitive impairment is often difficult to distinguish from

Figure 1. Short, Portable Mental Status Questionnaire

- ❑ 1. What is the date today? (Month? Date? Year?)
- ❑ 2. What day of the week is it?
- ❑ 3. What is the name of this place?
- ❑ 4. What is your telephone number? Phone # from chart: __ __ __/__ __ __-__ __ __ __
  OR
  What is your street address? Address from chart: _____
- ❑ 5. How old are you?
- ❑ 6. When were you born? Date of birth from chart: ___ ___/___ ___/___ ___ ___ ___
- ❑ 7. Who is president of the United States now?
- ❑ 8. Who was president before him?
- ❑ 9. What was your mother's maiden name?
- ❑ 10. Subtract 3 from 20 and keep subtracting 3 from each new number, all the way down.

Used with permission from: Pfeiffer E. A short portable mental status questionnaire for the assessment of organic brain deficit in elderly patients. *J Am Geriatr Soc* 1975;23:433-441.

Alzheimer's disease, but apraxia and aphasia are extremely uncommon. Head CT will often suggest the diagnosis, demonstrating the classic findings of enlarged ventricles without convolutional atrophy. Radionuclide cisternography will demonstrate reflux of cerebrospinal fluid into ventricles and delayed pericerebral diffusion.[36]

Treatment of patients with normal pressure hydrocephalus has varying success. Ventriculoperitoneal shunting occasionally results in a complete reversal of symptoms, although residual deficits or no improvement at all are common outcomes.[19] Overall, only 30-50% of patients show improvement with treatment.[37]

Vitamin B12 deficiency is another common cause of potentially reversible dementia. Patients often have other symptoms typical of B12 deficiency, including a painful red tongue, parasthesias in the extremeties, and megaloblastic anemia. This diagnosis cannot be excluded in the setting of a normal erythrocyte count or morphology, since megaloblastic anemia is often absent. An abnormal cyanocobalamin levels confirm the diagnosis. As the deficiency progresses, there is less chance of reversal. Even with treatment the prognosis remains poor, although recovery does rarely occur.[38,39]

Hypothyroidism is the most common endocrine dysfunction to present with dementia. History may reveal fatigue, cold intolerance, constipation, and weight gain. Evidence of a hypometabolic state, alopecia, or the classic delay in relaxation of deep tendon reflexes on physical exam should also arouse suspicion. With treatment, full recovery can occur; however, reversal is usually incomplete.[40]

In the patient with a history of falls, chronic subdural hematomas may precipitate dementia. The prognosis after surgical intervention is limited, although some patients will have significant improvement.[41]

Depression in the elderly frequently induces symptoms resembling dementia (pseudodementia). Differences may be subtle but may include a shorter duration and a more acute onset of symptoms than in the patient with true dementia.[4] A history of psychiatric disease or emotional stressor may be elicited. Patients with depression may appear disinterested when questioned, and memory deficits may improve with coaxing. Often, a trial of anti-depressant therapy will result in resolution of symptoms.[19]

Dementia and the Emergency Department

The emergency department evaluation of the patient with dementia begins with recognition. The physician should always be on guard for evidence of abnormal cognition, regardless of the chief complaint. A wealth of potential information can be gained from closely observing the patient while gathering the history. The patient may have unusual difficulty relating events. Individuals may also have difficulty recalling medications taken or significant elements of his or her medical history. Trouble with word finding or aphasia may also be uncovered. Individuals in daily contact with the patient (such as family members or caregivers) should always be interviewed as well. They can help clarify the acuity of disease progression, and will often provide further evidence of cognitive dysfunction. They may relate alterations in personality, sleep disturbances, difficulty remembering tasks or medications, and evidence of apraxia. During the remainder of the physical examination, inability with activities of daily living may be evident. Patients may be poorly groomed and inappropriately dressed. During this phase, any evidence of abnormal cognition should compel the physician to further explore the possibility of dementia.

There are a variety of brief screening tools that can be useful to the emergency physician in further assessing cognitive function.[9] These may be useful if the emergency physician suspects undocumented cognitive impairment or has concerns about patient disposition or follow-up, especially in elderly patients who live alone. The Short Portable Mental Status Questionnaire (SPMSQ)[42] (see Figure 1) and the Orientation-Memory-Concentration Test (OMC)[43] (see Figure 2) are the most commonly used. Both of these tests are easy to administer and can be completed quickly in the ED. The SPMSQ

Figure 2. The Orientation-Memory-Concentration (OMC) Exam for Cognitive Impairment

	MAXIMUM ERROR	SCORE ×	WEIGHT	TOTAL SCORE
What year is it now?	1		4	
What month is it now?	1		3	
Repeat this phrase after me: "John Brown, 42 Market St., Chicago"				
About what time is it?	1		3	
Count backward from 20 to 1	2		2	
Say the months in reverse order	2		2	
Repeat the memory phase	5		2	
			Total weighted score:	

Used with permission from: Katzman R, Brown T, Fuld P, et al. Validation of a short orientation-memory-concentration test of cognitive impairment. *Am J Psychiatry* 1983;140:734-739.

Table 3. Delirium or Dementia?

	DELIRIUM	DEMENTIA
Onset	Acute	Insidious
Progression	Fluctuating	Stable
Attention	Disordered	Normal
Hallucinations	Visual	Absent
Delusions	Fleeting	Absent (unless advanced or FTD)
Cognition	Disordered	Impaired

consists of 10 items and focuses on orientation. Five or more errors on the SPMSQ provide evidence of cognitive impairment. The OMC consists of six items, and can be easily administered in the ED in less than 2 minutes.[2] It is reliable, valid, and has a better sensitivity for milder levels of impairment than the SPMSQ.[10,44] It is also unique in that scores have been related to neuropathologic findings of dementia at autopsy.[43] A weighted score of more than 10 on the OMC test is indicative of at least moderate cognitive impairment. Despite their ease of use, screening tests such as these are underutilized. For this reason, a group from Yale developed a simple, two-part test for detecting dementia in the outpatient setting. The Time and Change test involves only two tasks: to identify, given two tries and 1 minute, the correct time from an analog clock set at 11:10; and to sort out a dollar in change from three quarters, seven dimes, and seven nickels (given 2 tries in 2 minutes).[45] This test proved to be 63% sensitive and 96% specific for detecting dementia. While some cases of dementia will be missed, any patient who passes the test is unlikely to have even mild dementia. While screening tools such as these will help the physician assess cognition in greater detail, they should not be used to establish a formal diagnosis of dementia. They should, however, arouse suspicion for dementia when the results are abnormal and prompt the physician to refer these patients for further assessment. In the ED setting, physicians may find these screens useful to document possible acute or subacute cognitive impairment and then, based on the history and examination, determine if a significant organic cause might be present.

It is difficult, if not impossible, to do a complete laboratory and radiologic evaluation of the patient with suspected dementia in the ED. Furthermore, there is no "dementia protocol" outlining specific labs and x-rays, as the more than 55 clinical conditions that can precipitate dementia make each patient unique. The National Institutes of Mental Health and the National Institutes of Neurological Communicative Disorders recommend that all patients with dementia have a complete blood count, metabolic panel, set of electrolytes, thyroid function panel, vitamin B12 and folate levels, serology for syphilis, urinalysis, chest radiograph, and electrocardiogram as part of the initial screening evaluation.[3] There is still much debate over the routine use of neuroimaging studies (head CT, MRI) in the evaluation of all patients with dementia.[19,25,26,31,45] While these studies are costly and yields are low, they play an important role in excluding potentially reversible causes of dementia (NPH, subdural hematomas). A lack of classic examination findings is not always reliable in excluding these etiologies from the differential diagnosis. Neuroimaging studies may also be helpful in identifying specific etiologies for "irreversible," or degenerative dementia. For example, MRI studies revealing hippocampal and parahippocampal atrophy may help to confirm a diagnosis of Alzheimer's disease. As treatment options vary with the cause of the dementia, these studies are important in helping to direct further therapy.

It is impractical to carry out a complete work-up for dementia in the ED. Many of these tests are appropriately deferred to the physician to whom the patient is later referred. One approach might be to screen all patients with new suspicion of dementia with a complete blood count, serum glucose, set of electrolytes, and a metabolic panel. Further testing could be selectively obtained based on results of the history and physical examination. For example, the patient with a risk for subdural hematoma, focal neurologic deficit, or evidence of normal pressure hydrocephalus warrants a head CT in the ED. Suspicion of myxedema warrants assessment of thyroid functions. An erythrocyte sedimentation rate should be completed for all patients with suspected vasculitis. Review the differential diagnosis for potentially reversible causes when formulating a care plan for each patient. A relatively recent onset of symptoms may carry a higher risk for morbidity, and should result in a more aggressive search.

Differential Diagnosis

It is important to distinguish dementia from other diseases that may also affect cognition. Delirium should always be considered in the differential diagnosis of the patient with an abnormal mental status. Unlike dementia, delirium is a more acute condition and is usually reversible with treatment. *(See Table 3.)* While patients with delirium may exhibit cognitive dysfunction, the primary problem is a clouding of consciousness and a reduced awareness of the surrounding environment. Patients often display abnormal levels of alertness, and may be hypoactive or hypervigilant. There is invariably an attention deficit, with an impaired ability to maintain, focus, and shift concentration. Hallucinations are also more common in the patient with delirium. Symptoms tend to fluctuate in severity over the course of the day. Delirium is often an indication of serious underlying illness, and is associated with high morbidity and mortality. Patients with delirium always warrant an aggressive search for underlying causes and usually require hospitalization. Dementia cannot be diagnosed in the presence of a delirium.

Major depressive disorder is often difficult to distinguish from dementia. Both disorders may present with memory impairment and changes in effect. Patients with depression often seem disinterested and apathetic during memory testing, and deficits often improve with coaxing. This is in contrast to the patient with dementia, who gives incorrect answers despite an adequate effort to remember. Depression is also more likely to exhibit a more discreet onset and shorter duration. Finally, patients with depression may be more likely to complain of a memory deficit, while it is often the family of the patient with dementia who first mentions the complaint.[4]

Finally, it is important to differentiate dementia from the mild cognitive impairment associated with normal aging. These patients exhibit mild impairment in memory, which does not affect daily function.

Disposition

The dementia itself is often not the deciding factor in determining the patient's disposition. Co-existing abnormalities found during the evaluation may necessitate hospitalization (urosepsis, subdural hematoma, etc.). However, there are also special circumstances to consider in the patient with dementia. The effect of cognitive impairment on treatment compliance should be considered. For example, a patient with uncomplicated pneumonia discharged to home may return with sepsis because of antibiotic noncompliance resulting from confusion over medication instructions. Such patients lacking adequate home support to assist with compliance should be hospitalized. Patients incapable of performing necessary self-care functions and with limited home support should also be hospitalized. This may be evidenced by unusually poor hygiene (such as the presence of urine or feces in clothing), dehydration, or poor nutritional status. Family or caregiver frustration may lead to abuse. Other options for disposition include follow-up assessment at home by home-health nurses and use of sub-acute units, including ED-based observation units. All patients with dementia and suspicion of elder abuse should be hospitalized for further evaluation.

Pitfalls

There are several potential pitfalls to avoid when evaluating the ED patient with dementia. These include failing to recognize the presence of dementia, failing to refer patients for further evaluation of cognitive impairment, misperceiving dementia as a medically untreatable and terminal process, and assuming a patient with dementia has been evaluated and managed by a primary care physician.

Emergency physicians may be overlooking the presence of an abnormal mental status in large numbers of geriatric patients.[46] The pace of the ED often results in the urge to focus narrowly on the chief complaint. Subtle evidence of dementia may be ignored. A patient might display problems with word finding while relating a history. Short-term memory impairment may manifest as unusual difficulty in remembering details, or reciting or complying with medications. Failure to interview individuals in close contact with the patient may leave additional evidence uncovered. Often patients are unaware of cognitive difficulties and will deny any problems if asked.

Even when dementia is recognized, ED management may be sub-optimal. The perception of dementia as an illness of lower acuity may result in an incomplete or superficial evaluation.[47] Attributing senility to the normal process of aging can be more detrimental to the patient. The physician may decide that no further evaluation is necessary, depriving the patient of potential therapies, resources, or cures.

It is important to refer all patients with suspected dementia for further evaluation and treatment. Geriatric assessment units, used in consultation with the patient's primary care physician, can be of assistance in this evaluation. If the cause of dementia is discovered, interventions can be instituted that slow or even reverse disease progression. This is true even with degenerative, or so-called irreversible dementia such as Alzheimer's or MID. Cholinesterase inhibitors such as Tacrine and Donazepil can be used to slow cognitive deterioration and delay institutionalization in many patients with Alzheimer's disease.[48-51] Early psychosocial intervention has also been shown to postpone institutionalization.[22] Dementia-related behavioral symptoms often respond to anti-depressant therapy with selective serotonin re-uptake inhibitors. Psychotic features can be managed with newer and safer neuroleptic agents. In patients with vascular dementia, secondary prevention of cerebral infarcts may be effective in slowing the course.[52] Most of these treatments are appropriately deferred to the patient's primary physician, who after further evaluation may identify a specific cause for the dementia.

Early recognition and referral of all patients with dementia has important prognostic significance. There is a much greater chance of curing a reversible dementia early in the course of the disease. Deficits also become more prominent as the dementia remains untreated. Early treatment of Alzheimer's disease may have a dramatic effect on prognosis as well.[53]

Patients at high risk for failure to refer may be those in which underlying dementia is most readily apparent. Avoid the urge to assume that if the condition is obvious and chronic, it has at some point been addressed by the primary care provider. While family members may recognize there is a significant memory problem, they may not have arranged for further evaluation because of believing that there is nothing medically that can be done. Any assumption that the dementia is currently being treated should be confirmed by asking the patient and family.

Conclusion

Dementia is highly prevalent among elderly patients seen in the ED. It is important for emergency physicians to recognize the special risks that apply to these patients. In the short term, ED outcome can be adversely affected by an inability to understand and comply with discharge instructions. Emergency physicians are also in a position to dramatically alter the long-term outcome of these patients. While most cases of dementia are considered irreversible, all cases are treatable when recognized and accurately diagnosed. Prognosis may be dependent on how early these treatments are initiated in the course of the disease. Early recognition and appropriate referrals initiated in the ED may significantly alter the prognosis and quality of life of patients with dementia.

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Physician CME Questions

6. Which of the following causes of dementia is potentially reversible?
   A. Alzheimer's disease
   B. Normal pressure hydrocephalus
   C. Parkinson's disease
   D. Frontotemporal dementia

7. The most common endocrine dysfunction to present with dementia is:
   A. adrenal insufficiency.
   B. hypoparathyroidism.
   C. hypothyroidism.
   D. Conn's disease.

8. Of all types of dementia, approximately how many are potentially reversible?
   A. 80%
   B. 40%
   C. 15%
   D. 1% or less

9. The most common single cause of dementia is:
   A. Alzheimer's disease.
   B. multi-infarct dementia.
   C. Parkinson's disease.
   D. vasculitis.

10. The classic triad of normal pressure hydrocephalus includes:
    A. urinary incontinence, ataxia, and opthalmopalegia.
    B. cognitive dysfunction, ataxia, and vertigo.
    C. cognitive dysfunction, ataxia, and urinary incontinence.
    D. headache, cognitive dysfunction, and ataxia.

11. Cholinesterase inhibitors in Alzheimer's disease:
    A. can be used to slow cognitive deterioration and delay institutionalization.
    B. are of no proven benefit.
    C. are contraindicated in patients with Alzheimer's disease.
    D. slow cognitive deterioration but do not delay institutionalization.

12. Early recognition and referral of all patients with dementia is important because:
    A. there is a much greater chance of curing reversible dementia early in the course of the disease.
    B. early treatment of Alzheimer's disease may have a dramatic effect on prognosis.
    C. deficits may become more prominent the longer dementia remains untreated.
    D. all of the above.

13. The Orientation-Memory-Concentration (OMC) test:
    A. requires at least 30 minutes to administer in the ED.
    B. has poorer sensitivity for milder levels of impairment than the short, portable mental status questionnaire.
    C. is unique in that scores have been related to neuropathologic findings of dementia at autopsy.
    D. should be used to establish a formal diagnosis of dementia.

In Future Issues: Subdural Hematoma