Dementia

Sharon Witemeyer MD (Pediatrician)

Definition

Dementia is a chronic, slowly progressive, usually irreversible decline in mental ability. Memory, thinking, judgment, and the ability to learn decline and personality may deteriorate.

Introduction

There are several types of dementia differentiated by cause. All present with the same symptoms of memory loss, impaired thinking and judgment, and loss of the ability to learn that affect the individual's ability to function. While changes in the brain occur in all people as a result of normal aging – especially short-term memory loss – these changes do not impair the individual's ability to function and are not the same as dementia.

The most common type of dementia is Alzheimer's disease. It is estimated that 2-4% of the population over 65 years of age have Alzheimer's. In this condition, parts of the brain degenerate, abnormal tissues (called senile plaques and neurofibrillary tangles) and abnormal proteins appear in the brain. Alzheimer's disease has been divided into Early Onset (before age 65 years) and Late Onset (after age 65 years) types. Compared with the general population, first-degree relatives of individuals with the Early Onset form of the disease are more likely to develop the disorder. Linkage to chromosomes 21, 14 and 19 has also been shown. Thus it is common to see Alzheimer's in individuals with Down syndrome that is caused by the presence of an extra chromosome #21 (Trisomy 21.) The Alzheimer's Association has developed a list of warning signs that include common symptoms of Alzheimer's disease.

10 WARNING SIGNS

1. Memory loss that affects job skills.
2. Difficulty performing familiar tasks
3. Problems with language
4. Disorientation to time and place.
5. Poor or decreased judgment
6. Problems with abstract thinking
7. Misplacing things
8. Changes in mood or behavior
9. Changes in personality
10. Loss of initiative.

As dementia progresses the individual may become more withdrawn and less able to control behavior. Mood swings, and emotional outbursts occur. He may wander away from home. He may awake in the night disoriented, paranoid or behaving in acute psychotic fashion. Eventually the individual may become totally oblivious to his surroundings and require constant care.

The second most common form of dementia is due to multiple small strokes. This is also called vascular dementia. Because the strokes are small the individual usually does not develop paralysis, weakness or inability to speak as is seen in larger strokes. However, subtle abnormal neurologic signs and symptoms will be present. Symptoms may follow a stair-step downward course. Individuals with high blood pressure or diabetes may develop this type of dementia.

Other causes of dementia are very much less common and include dementia due to:

1. HIV/AIDS
2. Head Trauma
3. Parkinson's Disease
4. Huntington's Disease
5. Pick's Disease
6. Creutzfeldt-Jakob Disease
7. Mad Cow Disease
8. Other General Medical Conditions (such as normal pressure hydrocephalus, thyroid disease, brain tumor, subdural hematoma, chronic liver disease, renal failure, depression and vitamin B12 deficiency)
9. Substance-Induced (such as alcohol, opioids, benzodiazepines, antidepressants, MAO inhibitors, anticholinergics, and digitalis)
10. Infections of the brain (such as syphilis and fungal infections.)

Diagnosis

The essential feature of dementia is the development of multiple cognitive (mental) deficits. Forgetfulness is usually the first sign but to make the diagnosis of dementia other mental changes that affect the ability to function must also be present. These may include changes in thinking, decision-making, judgment, language, orientation to time and place, mood, behavior or personality. Changes usually begin slowly and worsen over time. After a complete history and physical examination doctors will usually perform blood tests to rule out treatable causes of decreased mental functioning like thyroid disease, vitamin deficiency, electrolyte imbalances, infections, or drug toxicity. When possible a mental status examination will be performed. Neuropsychological testing may also be needed. The doctor may order a CT or MRI scan to rule out brain tumor, subdural hematoma, stroke or hydrocephalus. Sometimes a spinal tap to examine cerebral spinal fluid will be done, and sometimes an EEG will be ordered. The only definitive way to diagnosis Alzheimer's disease is by autopsy when the characteristic loss of nerve cells, abnormal amyloid plaques and neurofibrillary tangles are seen under the microscope.

Prevention and Treatment

Most dementias are not preventable and are incurable. Treating the hypertension or diabetes that is associated with the strokes can sometimes slow the progression of vascular dementia. Thyroid disease, vitamin deficiency, infections of the brain, normal-pressure hydrocephalus, and depression are treatable conditions that may be associated with memory loss or dementia. There is no cure for Alzheimer's disease. At this time there are two drugs that are FDA approved for the treatment of Alzheimer's – tacrine (Cognex) and donepezil (Aricept). Tacrine can cause serious side effects including liver toxicity so donepezil is usually prescribed. Modest improvement in cognitive (mental) performance was demonstrated in clinical studies.

Medications to help cope with symptoms such as anxiety, depression, paranoia and sleep disturbance are available. The doctor should prescribe these. Use of over the counter drugs is discouraged as some may worsen rather than help dementia.

Environmental supports are often helpful. Use of large clocks and calendars, frequent comments by caregivers about time and place and what is going on can help orient individuals with dementia. Daily routines can be simplified. A bright, cheerful and safe environment with regular low-stress activities can be provided. It is essential that individual dignity and self-respect be maintained. Caregivers must not scold or punish the person with dementia and must never treat the individual with dementia like a child.

The Alzheimer's Association has published an excellent, extensive guide on-line for caregivers of individuals with Alzheimer's. This document provides many concrete suggestions for day-to-day living with an individual with Alzheimer's.

Emergency Situations – What can go wrong?

Dementia is a slowly progressive, chronic condition. It does not occur abruptly and is not associated with acute emergency situations per se. Problems are likely to arise when caretakers let down their guard. An ounce of prevention is worth a pound of cure!

1. Wandering
   - Follow elopement procedures.
   - Consider enrolling the individual in the Safe Return Program, a nationwide system designed to identify, locate and return to safety persons who are memory impaired. For information call 1-888-572-8566.
2. Injury from falls, knocking into sharp objects, hot water, dangerous appliances/equipment
   - Notify PCP and proceed to emergency room or doctor's office as indicated.
3. Fire from unsupervised smoking, use of matches, cooking/kitchen fires
   - Follow fire procedures (Rescue, Alert, Contain, Extinguish).
4. Ingestion of medications, alcohol, or poisons
   - Call Poison Control 272-2222 and follow the instructions they give you.

Conclusion

Dementia is a chronic, slowly progressive, usually incurable loss of mental abilities. There are many causes of dementia. The most common cause is Alzheimer's disease and the second most common cause is vascular dementia. Between 2-4% of individuals over the age of 65 years will develop Alzheimer's. By age 85 years the prevalence of dementia is 20%. Forgetfulness is common in older people. Dementia is a much more serious decline in mental abilities and affects the individual's ability to function. Although there is no cure for dementia, symptomatic treatment of symptoms such as anxiety, depression, paranoia, and sleep disturbance is available. Caregivers can provide a safe, clean, respectful environment.

References

DSM –IV (Diagnostic and Statistical Manual of Mental Disorders Fourth Edition,) American Psychiatric Association, Washington DC, 1-Oct-96, pp 133-155.

Cecil Textbook of Medicine 19th Edition, W.B. Saunders Company 1992.

Sharon Witemeyer MD (Pediatrician)