Not All Dementia is Alzheimer’s Disease
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Alzheimer’s disease is the most common cause of dementia, but it is important not to overlook other causes of dementia, especially the 10-15% of these cases that may be reversible. Examples of dementia-like illnesses that may be confused with Alzheimer’s disease are shown in Table 1.

Four features of dementia-like illnesses should raise concern about causes other than Alzheimer’s disease. They include (1) speed of onset, (2) age of onset, (3) the patient’s clinical profile, and (4) a medical history that might indicate a non-Alzheimer’s cause.

**Speed of Onset and Progression**
The more rapid the onset, the less likely a dementia-like condition is Alzheimer’s disease. Examples of conditions confused with Alzheimer’s but which have a more rapid-onset or progression range from delirium to mercury toxicity (Table 1).

**Age at Onset**
The younger the age at onset, the greater the chance of a non-Alzheimer’s dementia. This is particularly true if there is no family history of early-onset Alzheimer’s.

**Clinical Profile**
Alzheimer’s disease is a slowly progressive disorder that begins by affecting memory and gradually affects other domains including executive skills and naming. Anosognosia (lack of awareness of one’s disability) may also develop, as may personality changes. But, gait and non-neurological functions are usually spared. Patterns different than this should raise the possibility of a non-Alzheimer’s dementia.

**Medical History**
A patient’s medical history and medications should be considered. Many medical conditions, ranging from cerebrovascular disease to drug side effects, can cause a dementia-like illness that is confused with Alzheimer’s.

**Reversible Imitators of Alzheimer’s Disease**
Although reversible causes account for only 10-15% of cases of dementia-like illnesses, it is essential not to overlook them. The following case illustrates a real-life example:

<table>
<thead>
<tr>
<th>Underlying Cause</th>
<th>Acute</th>
<th>Subacute</th>
<th>Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degenerative</td>
<td>Delirium</td>
<td>ALS-dementia with hypoventilation</td>
<td>See Table 2</td>
</tr>
<tr>
<td>Infectious</td>
<td>Viral encephalitis</td>
<td>Fungal meningitis</td>
<td>Neurosyphilis</td>
</tr>
<tr>
<td>Inflammation</td>
<td>Disseminated Encephalomyelitis</td>
<td>Paraneoplastic syndrome</td>
<td>Autoimmune encephalopathy</td>
</tr>
<tr>
<td>Neoplastic</td>
<td>Obstructive hydrocephalus</td>
<td>Glioblastoma</td>
<td>Orbitofrontal meningioma</td>
</tr>
<tr>
<td>Nutritional</td>
<td>Wernicke-Korsakoff</td>
<td></td>
<td>Vitamin B12 deficiency</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>Acute psychosis</td>
<td>Inadequately controlled psychosis</td>
<td>Severe depression</td>
</tr>
<tr>
<td>Toxic</td>
<td>Drug or alcohol intoxication</td>
<td>Mercury toxicity</td>
<td>Polypharmacy</td>
</tr>
<tr>
<td>Traumatic</td>
<td>Acute head injury</td>
<td>Subdural hematoma</td>
<td>Chronic traumatic encephalopathy</td>
</tr>
<tr>
<td>Vascular</td>
<td>Acute stroke</td>
<td>Disseminated intravascular coagulation</td>
<td>Vascular dementia</td>
</tr>
</tbody>
</table>

**TIPS FOR RECOGNIZING NON-ALZHEIMER’S DEMENTIA SYNDROMES**
- When patients are being evaluated because of cognitive impairment, consider causes other than Alzheimer’s disease when the impairment develops at a young age, when it develops over a short period of time, or when a movement disorder, including gait disorder, is a predominant symptom.
- Always consider potentially reversible causes of cognitive impairment, like drug side effects, infection, depression, nutritional deficiencies, and delirium.
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patient who was initially labeled as having Alzheimer’s dementia, but who subsequently turned out to have a reversible medical condition.

**Case- Drug Toxicity:** A 72-year-old man with a history of bipolar disorder had a 7-month history of memory loss and two years of impaired gait. He scored 18/30 on a Mini-Mental State Exam (MMSE). He was on a stable dose of lithium for years but blood work showed an elevated level. After 3 days off lithium his cognition and gait returned to normal.

**Non-Reversible Causes of Dementia**

Although Alzheimer’s disease is the most common and well-known form of dementia, accounting for about 70% of cases, several other degenerative neurological disorders can cause irreversible dementia and are often confused with Alzheimer’s disease.

The most common of these disorders is vascular dementia (now called vascular cognitive impairment), which accounts for about 15-20% of dementia cases and is often mixed with Alzheimer’s. Other common syndromes include Lewy body dementia and fronto-temporal dementia, each accounting for about 10% of cases. Key characteristics of these syndromes are shown in Table 2. Although not reversible, recognizing these conditions allows for more accurate prognosis and more effective use of symptom-modifying medications. As we age, there is increasing overlap between these entities which is not always evident clinically but has been shown in brain autopsy studies.

**Treating Alzheimer’s Disease.**

Until very recently all therapies have been largely symptomatic, meaning that they help with symptoms but do not interfere with the disease itself, which therefore continues to progress despite such treatment. Such symptomatic medications have included donepezil, rivastigmine, galantamine, and memantine. Recently a new treatment received FDA approval contingent upon further demonstration of clinical benefit. This form of treatment is called a “monoclonal antibody” and it essentially mimics the effects of the immune system in attacking amyloid in the brain. In doing so, it activates an inflammatory reaction that clears amyloid from the brain. It is highly controversial not only because of potentially serious side effects and high cost, but because the actual clinical benefit has been relatively minor and inconsistent. Nonetheless this could be considered disease modifying therapy, akin to chemotherapy for cancer, and there are further treatments on the horizon that act in a similar fashion. These should be considered very carefully in consultation with a dementia specialist as their indications and proper use are far from agreed upon.

**References and Resources**


