Amyloid imaging helps in evaluating possible Alzheimer disease

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A test to detect brain amyloid deposits associated with Alzheimer disease (AD) provides doctors with useful information on treatment and further testing for patients with cognitive impairment, according to a study published online by the journal Alzheimer Disease & Associated Disorders.

Positron emission tomography (PET) scans using a biomarker called florbetapir F18 can show amyloid plaques in the brain—a characteristic feature of AD. "Amyloid imaging results altered physicians' diagnostic thinking, intended testing and management of patients undergoing evaluation for cognitive decline," according to the study by Dr Mark Mintun of Avid Pharmaceuticals, Philadelphia, and colleagues.

Is It Alzheimer Disease? Florbetapir Scan Provides Evidence

The researchers designed a "real-world" study to determine how florbetapir would affect clinical management of patients with cognitive impairment. While a florbetapir PET scan showing amyloid plaques doesn't prove that AD is present, it provides a previously unavailable piece of evidence to support the diagnosis.

The study included 229 patients seen by neurologists or other specialists for evaluation of cognitive decline or impairment of uncertain etiology. Before the florbetapir PET scan, doctors provided a provisional

diagnosis, an estimate of their diagnostic confidence, and their plans for further testing and treatment. The goal was to assess the value of florbetapir PET in making the final diagnosis and in providing doctors with useful information for clinical decision making.

The florbetapir PET scans showed amyloid deposits in 113 out of 229 patients. The information provided led doctors to change their diagnosis in 55 percent of cases.

When the provisional diagnosis was AD, imaging results led to a change in diagnosis in 37 percent of cases. When the pre-scan diagnosis was either "indeterminate" or another cause of dementia, the diagnosis changed in over 60 percent of cases. In either direction, the scans increased the physicians' ratings of diagnostic confidence by about 20 percent.

Impact on Treatment and Testing Decisions

Florbetapir PET also provided useful information for treatment decision-making: in 87 percent of patients, the results contributed to at least one change in the treatment plan. The main impact was in deciding whether or not to use medications that are helpful in AD. The scan results also affected decisions on further testing—in many cases, physicians dropped plans to perform additional brain imaging studies or neuropsychological tests.

Alzheimer disease is the most common cause of dementia, but the diagnosis can be challenging to make. The only definitive way to diagnose AD is by autopsy examination of the brain after death. Up to 20 percent of patients diagnosed with AD turn out not to have had AD on autopsy, while up to 40 percent of patients diagnosed with other causes of dementia have evidence of AD at autopsy.

Florbetapir PET is the first FDA-approved imaging that can estimate amyloid deposits in the brain of a living patient. Previous studies have shown that the scans are accurate in identifying patients later shown to have AD at autopsy.

The new results show that florbetapir PET scans can have a significant effect in "real world" clinical evaluation of patients with cognitive impairment. By strengthening the case for or against a diagnosis of AD, this test can have a significant impact on patient management—particularly related to the use of AD medications and the need for further testing. Additional studies will be needed to confirm whether "clinical care that includes amyloid imaging will translate into better outcomes" for patients with cognitive impairment and possible AD.

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