

Alzheimer's patients experience adverse outcomes, delirium

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The state of acute confusion and disorientation known as delirium can stem from a serious illness, surgery or infection, and often develops while patients are in the hospital. Now a new study confirms that for patients with Alzheimer's disease, hospitalization and delirium pose a particular risk and can lead to adverse outcomes, including hastened cognitive decline, institutionalization and death.

Led by researchers at Harvard Medical School affiliates Hebrew SeniorLife and Beth Israel Deaconess Medical Center (BIDMC), the study appears in the June 19 on-line issue of the [Annals of Internal Medicine](#).

"Evidence has shown that older patients with Alzheimer's disease [AD] are much more likely to be hospitalized than other older patients," says lead author Tamara Fong, MD, PhD, assistant scientist in the Aging Brain Center, Institute for Aging Research at Hebrew SeniorLife and Assistant Professor of Neurology at BIDMC. "Because our previous research had found that AD patients experienced a three times faster decline in mental function if they had experienced delirium, we wanted to determine if AD patients who are hospitalized are at greater risk for poor outcomes than AD patients who are not hospitalized, and if there is any additive negative outcome when hospitalized AD patients develop delirium."

The researchers, therefore, analyzed the records of 771 patients over age 65 who were examined between 1991 and 2006 at the Massachusetts

Alzheimer's Disease Registry (MADRC), a clinical registry based at Massachusetts General Hospital.

"We looked at patients with and without hospitalizations who were seen at least three times in the MADRC during the study interval period," says Fong.

The authors additionally analyzed data from medical records and other data sources, including Medicare and the Social Security Death Index, to determine outcomes of hospitalization and delirium.

As predicted, their findings showed that in patients with [Alzheimer's disease](#), any hospitalization was associated with increased risks for institutionalization, [cognitive decline](#) and death, and for those patients who developed delirium, there was an incremental increase in risk for these adverse outcomes, even after controlling for other cofactors.

"Among the hospitalized Alzheimer's patients, a substantial proportion of risk for adverse outcomes could be attributed to delirium, including 6.2 percent of deaths, 15.2 percent of institutionalization, and 20.6 percent of cognitive decline," says Fong. "The bottom line is that delirium can be a big problem for patients with AD," she adds.

There are, however, effective prevention strategies for delirium for hospitalized elders, notes Fong. These include the Hospital Elder Life Program (HELP), a patient care program designed to prevent delirium by keeping hospitalized older people oriented to their surroundings, meeting their needs for nutrition, fluids and sleep, and keeping them mobile within the limitations of their physical conditions. "Going forward, we plan to conduct formal studies to determine if these types of interventions can help improve outcomes for this vulnerable group of patients," she explains.

Adds senior author Sharon Inouye, MD, PhD, Director of the [Aging Brain](#) Institute at HSL, Harvard Medical School Professor of Medicine at BIDMC, "Our confirmation that hospitalization and delirium play important roles in adverse outcomes may ultimately influence care and management of patients with AD.

Interventions to prevent hospitalization and hospital-associated [delirium](#) may be appropriate for all [patients](#) with AD. The cost savings to Medicare would be far greater than the amount from current treatment options for AD."

Provided by Hebrew SeniorLife Institute for Aging Research

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