Medical Xpress

Traumatic brain injury associated with increased dementia risk in older adults

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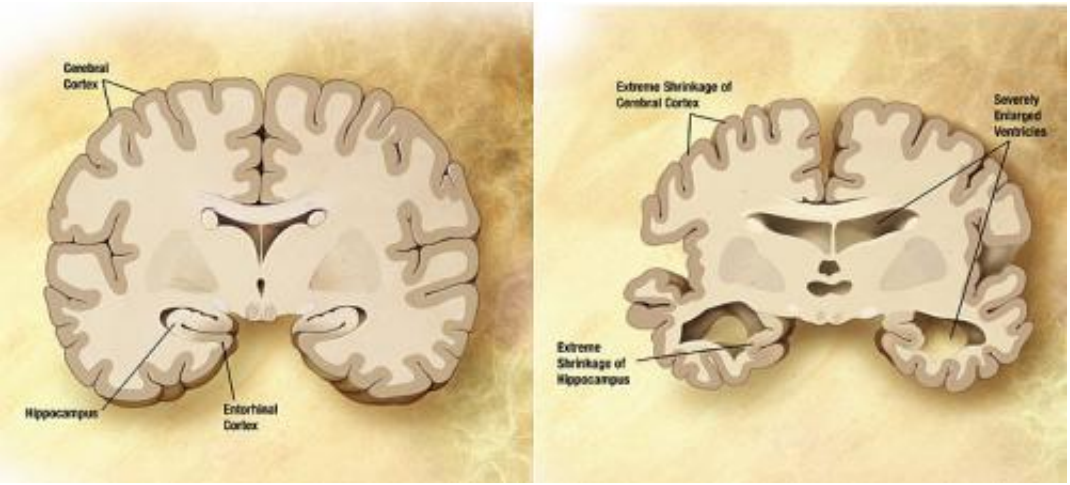

Diagram of the brain of a person with Alzheimer's Disease. Credit: Wikipedia/public domain.

Traumatic brain injury (TBI) appears to be associated with an increased risk of dementia in adults 55 years and older, according to a study published online by *JAMA Neurology*.

Controversy exists about whether there is a link between a single TBI and the risk of developing dementia because of conflicting study results. The Centers for Disease Control and Prevention says that Americans 55 years and older account for more than 60 percent of all hospitalizations for TBI, with the highest rates of TBI-related emergency department (ED) visits, inpatient stays and deaths happening among those patients

75 years and older. Therefore, understanding the effects of a recent TBI and the subsequent development of dementia among middle or older adults has important public health implications.

Researchers Raquel C. Gardner, M.D., of the University of California, San Francisco, and colleagues examined the risk of dementia among adults 55 years and older with recent TBI compared with adults with non-TBI body trauma (NTT), which was defined as fractures but not of the head or neck. The study included 164,661 patients identified in a statewide California administrative health database of ED and inpatient visits.

In the study, a total of 51,799 patients with trauma (31.5 percent) had TBI. Of those, 4,361 patients (8.4 percent) developed dementia compared with 6,610 patients (5.9 percent) with NTT. The average time from trauma to dementia diagnosis was 3.2 years and it was shorter in the TBI group compared with the NTT group (3.1 vs. 3.3 years). Moderate to severe TBI was associated with increased risk of dementia at 55 years or older, while mild TBI at 65 years or older increased the dementia risk.

"Whether a person with TBI recovers cognitively or develops dementia, however, is likely dependent on multiple additional risk and protective factors, ranging from genetics and medical comorbidities to environmental exposures and specific characteristics of the TBI itself," the authors note.

In a related editorial, Steven T. DeKosky, M.D., of the University of Pittsburgh School of Medicine, writes: "In this issue of *JAMA Neurology*, Gardner and colleagues used a very large database to examine the risk of dementia following significant trauma, specifically whether body trauma (fractures) or traumatic brain injury (TBI) differed in dementia incidence during follow-up."

"Unfortunately, there was not a nontrauma control group included, which may have answered the question of whether NTT (i.e. body trauma itself) raised the risk of dementia significantly above age-equivalent controls without nonbrain trauma (perhaps from inflammation or other complications)," DeKosky continues.

"Judicious use of data by skilled researchers who are familiar with the entire range of dementia research from pathobiology to health care needs will enable us to ask important questions, evolve new or more informed queries, and both lead and complement the translational questions that are before us. Dementia is both a global problem and a pathological conundrum; thus, the complementary use of big data and basic neuroscience analyses offers the most promise," he concludes.

More information: *JAMA Neurol*. Published online October 27, 2014. DOI: 10.1001/jamaneurol.2014.2668
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