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Pain and Depression Place Older Adults at Risk of Delirium Following Surgery

BOSTON—New research reports that preoperative pain and depressive symptoms in older adults place them at greater risk of delirium following surgery. According to the findings published today in *The Lancet Psychiatry* journal, both pain and depression are independent and interactive risk factors for delirium, suggesting a cumulative effect.

Individuals with delirium experience a sharp decline in attention and mental function. Older adults are especially susceptible to delirium following surgery, occurring in up to 51% of surgical patients 65 and older. Moreover, depression is a common risk factor for delirium, with medical evidence showing a two- to three-fold increase in risk.

“Understanding the impact of preoperative pain and depression on risk of delirium in older surgical patients is important,” says lead author Mr. Cyrus Kosar from the Harvard Medical School–affiliated Hebrew SeniorLife Institute for Aging Research (IFAR). “By exploring the interaction between pain, depression, and delirium we may uncover potential targets for intervention.”

The present study included 459 non-dementia patients, 70 years of age or older, who were scheduled for orthopedic surgery between June 2010 and August 2013. Patients self-reported current pain along with the average and worst pain for the previous seven days. Prior to surgery depressive symptoms were assessed using the geriatric depression scale and chart review. Post-surgical delirium was measured by the confusion assessment method and chart review.

Study results report that 23% of patients showed signs of delirium, which occurred much more frequently in patients with depressive symptoms prior to surgery than in those without depression. Researchers found preoperative pain was linked to increased risk of delirium across all pain measures.

Further analyses found that patients with depressive symptoms had a 21% increased risk of delirium associated with a one-point difference in the worst pain score, while patients without depressive symptoms demonstrated only a fraction of the risk (3%), indicating a significant interaction between pain and depressive symptoms. Higher average pain scores also conferred excess delirium risk in patients with depressive symptoms; however the risk difference between those without depressive symptoms was not as large.

“Our study demonstrates that the combination of higher symptoms of pain and depression increases delirium risk in older adults,” concludes Dr. Sharon Inouye, senior

author of the study and principal investigator of the Successful Aging After Elective Surgery (SAGES) study from which the study participants were drawn. “Doctors considering surgery for older patients should be aware of the delirium risk and potential contributions of pain and depressive symptoms in their preoperative evaluations.”

Study coauthors include: Patricia A. Tabloski, PhD; Thomas G. Trivison, PhD; Richard N. Jones, ScD; Eva M. Schmitt, PhD; Margaret R. Puelle, BS; Jennifer B. Inloes, BS; Jane S. Saczynski, PhD, Edward R. Marcantonio, MD ; David Meagher, MD; M. Carrington Reid, MD; Sharon K. Inouye, MD

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About the Institute for Aging Research

Scientists at the Institute for Aging Research seek to transform the human experience of aging by conducting research that will ensure a life of health, dignity and productivity into advanced age. The Institute carries out rigorous studies that discover the mechanisms of age-related disease and disability; lead to the prevention, treatment and cure of disease; advance the standard of care for older people; and inform public decision-making. The Geriomics Program within IFAR studies the genetic architecture underlying diseases of aging.

About Hebrew SeniorLife

Hebrew SeniorLife, an affiliate of Harvard Medical School, is a national senior services leader uniquely dedicated to rethinking, researching and redefining the possibilities of aging. Based in Boston, the non-profit, non-sectarian organization has provided communities and health care for seniors, research into aging, and education for geriatric care providers since 1903. For more information about Hebrew SeniorLife, visit <http://www.hebrewseniorlife.org>, follow us on Twitter @H_SeniorLife, like us on [Facebook](#) or read our [blog](#).

Reference

Kosar, CM et al. Effect of preoperative pain and depressive symptoms on the risk of postoperative delirium: a prospective stratified study. *The Lancet Psychiatry*; October 28, 2014. DOI: [http://dx.doi.org/10.1016/S2215-0366\(14\)70358-X](http://dx.doi.org/10.1016/S2215-0366(14)70358-X)

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