

'Post-hospital syndrome' found to be a risk factor for elective surgery

November 10 2015

A condition known as "post hospital syndrome" (PHS) is a significant risk factor for patients who undergo elective outpatient surgery, a Loyola study has found.

PHS is defined as having been hospitalized during the previous 90 days. The first-of-its-kind study found that among [patients](#) with PHS, 7.6 percent had to be readmitted to the hospital within 30 days of undergoing elective outpatient hernia surgery. By comparison, only 1.6 percent of non-PHS patients had to be readmitted following hernia surgery.

Also, 8.3 percent of PHS patients were admitted to the emergency department within 30 days of hernia surgery, compared with 4.3 percent of non-PHS hernia surgery patients.

The study by senior author Paul Kuo, MD, first author Anai Kothari, MD, and colleagues was presented at the annual meeting of the Western Surgical Association in Napa Valley, Ca. Dr. Kuo is chair of the Department of Surgery of Loyola University Medical Center and Loyola University Chicago Stritch School of Medicine. Dr. Kothari is a resident in the Department of Surgery.

"Surgeons must consider all recent inpatient admissions when risk-stratifying patients for ambulatory, elective surgery," researchers concluded.

PHS was first identified in an article in the *New England Journal of Medicine* by Harlan Krumholz, MD of Yale University School of Medicine. Dr. Krumholz defined PHS as "an acquired condition of vulnerability."

During hospitalization, patients often are sleep deprived and in pain or discomfort. They receive medications that can alter their mental and physical abilities. They become deconditioned (loss of muscle mass, reduced cardiac output, etc.). And patients may not get sufficient nutrition if, for example, they are on a ventilator or have to fast before surgery or tests. These problems can impair their recovery and make them more prone to disease and mental errors, Dr. Krumholz wrote.

The Loyola researchers analyzed records of 57,988 California patients who underwent hernia repair in 2011, including 1,332 patients who had PHS. Data sets came from the U.S. Agency for Healthcare Research and Quality. Researchers focused on hernia repair because it is a common surgery performed at ambulatory surgery centers, community hospitals and academic medical centers.

Among the PHS patients, the most common reason for their previous hospitalization was gastrointestinal problems (25.1 percent), followed by cardiovascular problems (12.3 percent), hip fractures and other injuries (8.2 percent) and pregnancy-related complications (7.1 percent). The average length of time between their previous hospitalization and their elective hernia surgery was 48.7 days.

The study is titled "Impact of the Post-Hospital Syndrome on Outcomes Following Elective Outpatient Surgery". In addition to Drs. Kuo and Kothari, co-authors are Robert Blackwell, MD; Ryan Yau; Matthew Zapf; Matthew Arffa; and Gerard Abood, MD.

Loyola researchers are doing a follow-up study to determine what

measures hospitals could take to reduce the negative impact of PHS.

The PHS study was conducted by Loyola's predictive analytics program, which mines large data sets to predict health outcomes. In addition to the PHS study, researchers are studying, for example, how hospitals can reduce the negative effects of having [surgery](#) on the weekend and whether having a trauma department confers a beneficial "halo effect" on patient outcomes across the board.

Large new databases, electronic medical records and more powerful computing capabilities are enabling researchers to conduct such studies. "We're now able to ask and answer a broad range of questions that could significantly help improve patient care and reduce costs," Dr. Kuo said. Dr. Kuo heads Loyola's analytics group, One to Map Analytics. (One-to-map is a common computer command in analytics research.)

Provided by Loyola University Health System

Citation: 'Post-hospital syndrome' found to be a risk factor for elective surgery (2015, November 10) retrieved 18 July 2024 from <https://medicalxpress.com/news/2015-11-post-hospital-syndrome-factor-elective-surgery.html>

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