

Study identifies factors that increase risk of falls among orthopedic inpatients

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Patients who undergo total hip replacements are more at risk for having a serious fall while recovering in the hospital than patients undergoing other orthopedic procedures, according to a recent study. The study, which will be presented at the American College of Rheumatology's annual meeting, Nov. 7-11, in Atlanta, also identified other factors involved in patient falls that could help hospitals devise strategies to reduce these accidents.

"Patients undergoing total hip replacements (THR) appear more likely to have more serious falls than other orthopedic patients, and serious falls happen earlier than most falls, two days postoperatively rather than four when most falls occurred," said Lisa Mandl, M.D., a rheumatologist at Hospital for Special Surgery in New York. "THR patients should be monitored closely, especially during the first three postoperative days. This study identified a window in which we might need to be more careful than we thought."

While studies have examined rates and characteristics of falls in general hospitals that see critically ill patients, there is sparse research on falls in patients staying overnight for elective orthopedic procedures. To fill the knowledge gap, investigators in the Quality Research Center at Hospital for Special Surgery (HSS) conducted a retrospective review of all patients who had fallen in their hospital from 2000-2009. At HSS, almost all admissions are for elective orthopedic procedures, with a small number due to non-critical rheumatic disease patients. Falls in patients 18 years or older were identified from the hospital's falls

reporting database and discharge records. The fall rate was 0.9 % of admissions and 2.0 falls per 1,000 inpatient days.

By sifting through records, the investigators tried to characterize the types of falls and identify factors that predicted whether a patient would fall. No association was found between falling and [body mass index](#), age, gender, location in the hospital, day of the week, or time of day. The study showed that 13.1% of first falls resulted in injuries, of which 3.3% were serious, defined as transfer to a higher level of care, dislocation, fracture, intra-cranial bleed, or the need for an operation. Patients with serious falls were more likely to fall earlier in their stay, (post-operative day 2.3 vs. 4.1; $P=0.003$) and have had a THR ($P=0.001$).

Among patients who fell, 38.2% had a total knee replacement (TKR), 18.5% had a spine procedure such as a spine straightening, 14.7% had a THR, 11.5% had a lower extremity procedure such as foot or ankle surgery, and 8.9% were admitted for another procedure or medical reason. Of the 842 falls that were characterized as first falls during the admission, 45.1% involved using the bathroom.

"Before this study, we suspected that people fell on their way to the bathroom and that total knee replacement patients comprised a large percentage of falls and we confirmed this," said Dr. Mandl, who is also assistant research professor of medicine and public health at Weill Cornell Medical School. "Now we know that patients who have total hip replacements are more likely to have serious falls."

17.5% of first falls were in patients with a known history of previous falls. Twenty-six falls were second or third falls in the same patient during the same admission. "We know that a previous fall puts you at risk for a future fall and even though we knew these people were high risk, they still fell. We weren't able to stop it. That tells us that whatever we are doing now is not really good enough," said Dr. Mandl. "We need

to be more vigilant about people who are high risk."

Dr. Mandl said that clinicians should remind patients that it is okay to ask for help. "These are people who normally don't call someone to help them go to the bathroom, so they feel stupid," Dr. Mandl said. "We have to make sure that people know it is appropriate that they call people."

According to Dr. Mandl, the number of falls will likely increase in future years because the number of TKRs and THRs is projected to skyrocket. More hips and knees will need to be replaced due to the aging population and increased obesity rates.

Another interesting finding from the research was that investigators did not identify any trend in the fall rate over the years the study was conducted—the rate was constant. "In spite of everything we have done to improve the rates for falls, the rates have not really changed over the last decade," Dr. Mandl said.

Provided by Hospital for Special Surgery

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