

Geriatric Hip Fractures, Cognitive Impairment, and Undiagnosed Urinary Tract Infections

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Background/Purpose: Cognitive impairment has been found to be associated with an increased risk of falls among older adults. While comanagement of these geriatric patients with the medicine service has been shown to lead to improved outcomes and lower cost, the orthopaedic surgeon is often left with primary responsibility for patient care. The aim of this study is to identify risk factors for falls and compare outcomes of older adults presenting with or without cognitive impairment who underwent surgical treatment for a low-energy hip fracture at a Level I trauma center.

Methods: 255 patients (women >55 years; men >60 years) with a hip fracture were treated during an 18-month period (May 2, 2011–November 29, 2012). Patient demographic and hospitalization data collected included: age, cognitive status, urinary tract infection diagnosis, and inpatient complications (ie, renal insufficiency/failure, delirium, hypoxia, pneumonia, pulmonary embolism, surgical site infection, deep vein thrombosis, myocardial infection, cerebrovascular accident, urinary tract infection, bleeding complications, reoperation and death). Mantel Haenszel χ^2 *P* values and *t* tests were calculated to determine for statistical significance (*P* <0.05).

Results: Among the 255 patients admitted with low-energy hip fracture for the 18-month period, 30% (N = 77) presented with a diagnosis consistent with cognitive impairment (ie, dementia, Alzheimer's disease, Lewy body, vascular dementia). The average age of those with cognitive impairment was 82.8 years while the average age of those without cognitive impairment was 73.9 years (*P* <0.001). 23% of cognitively impaired patients had urinary tract infections (UTIs) compared to 9% of those without cognitive impairment (*P* = 0.0014 and 0.0019). However, 83% of the UTIs were preexisting condition as they were diagnosed within a day of admission. The cognitively impaired older adults were less likely to be diagnosed within 1 day of admission to the hospital compared to those without cognitive impairment (50% and 66%). 75% of cognitively impaired patients experienced complications versus 63% of those without cognitive impairment (*P* = 0.0647). 31% of cognitively impaired experienced delirium compared to 14% of those without cognitive impairment.

Conclusion: The cognitively impaired older adults were more likely to present to the hospital with undiagnosed UTIs. There were no significant differences in the overall inpatient complication rates between the two groups; however, cognitively impaired patients were more likely to experience modifiable complications such delirium. The findings highlight an opportunity to address the issue of undiagnosed UTI in the cognitively impaired older adult population as it is a risk factor for falls. Based on these findings, systematic assessment of cognitive status on admission to identify patients with cognitive impairment may improve patient care. UTI diagnosis at admission in the cognitively impaired patient is im-

perative in early treatment and also reducing the burden of unreimbursed cost of treating Medicare patients to the hospital. Diagnosis of UTI at admission is necessary since it is one of the Medicare and Medicaid unreimbursed costs of treatment if not diagnosed at admission. In the absence of an environment with comanagement of geriatric fracture patients, the orthopaedic surgeon can reduce exposure by requesting these tests. The recognition of the most common complications will also allow clinicians to create focused clinical pathways to help decrease complications in this cognitively impaired cohort.

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.