Traumatic Injuries In Elderly Patients Often Underestimated

Traumatic injuries can be more severe for older adults, yet they often do not get the right level of care, according to a study appearing in the October issue of the Journal of the American College of Surgeons. Instead of going to a trauma center, many elderly patients end up in facilities without specialized expertise in trauma care that can treat all of their injuries.

The top cause of traumatic injuries for elderly patients is an unintentional fall, according to the National Trauma Data Bank of the American College of Surgeons (ACS).1 Such falls are particularly dangerous for adults older than 65, often leading to brain injuries and spine or hip fractures. More than 2.3 million nonfatal injuries among older adults are treated in emergency departments costing about $30 billion in direct medical care, according to the Centers for Disease Control and Prevention.

Patients with the most severe injuries can be taken to a trauma center: hospital emergency departments designated by state government health agencies as being fully qualified to render trauma care and/or verified to offer optimal care to injured patients by the Committee on Trauma (COT) of the ACS. Trauma centers offer immediate specialized trauma care resources, including the necessary equipment and medical and surgical personnel who are available on a 24/7 basis.
But a research team led by a trauma surgeon at Stanford (CA) University, found that elderly patients are often undertriaged, meaning they are not even taken to a trauma center, even though their injuries are severe enough to warrant being seen in those facilities.

“We’re not sure why this is happening, but there is clearly a bias,” said lead study author Kristan L. Staudenmayer, MD, MS, FACS, assistant professor of surgery at Stanford University School of Medicine, Stanford, Calif. “They could be walking through the living room, trip, and fall. That [event] may not hurt a young person, but it can severely injure an elderly person, especially if that elderly person is frail and has a lot of other health conditions.”

Without considering underlying health conditions, triage teams and first responders may underestimate how badly injured elderly patients are. “Even if we know they have heart disease or another condition, that’s not sufficient to tell us how strong or weak they are,” Dr. Staudenmayer adds. “I know plenty of people with diabetes who look pretty healthy.”

Dr. Staudenmayer and her colleagues looked at how undertriaging elderly patients would affect their outcomes, particularly whether they survived the injury 60 days later. This timeframe is important, she explained, because elderly patients often die after leaving the hospital, not while in the hospital.

The researchers examined data from emergency medical services in California and Utah from 6,015 patients who were injured between January 2006 and December 2007. The patients were age 55 and older, called 9-1-1 and then were admitted to the hospital.

The researchers then compared information found in state hospital discharge reports, patient records, emergency department records, trauma registry data, and death certificates. The researchers used data from trauma centers that were either designated by local state government health authorities or verified by the ACS COT for the study.

Overall the differences were stark: Patients at nontrauma centers had an unadjusted 60-day mortality rate of 9 percent, while the rate for patients at trauma centers was lower, 5.7 percent. The median hospital stay for patients at trauma centers was also one day shorter than patients at nontrauma centers.

“Patients who were taken to nontrauma centers also had fewer interventions performed and fewer major non-orthopedic surgeries,” the authors write.

They also looked specifically at the patients’ injury severity (ISS) scores, which grade how severe injuries are in certain areas of the body, including the head and neck, face, chest, abdomen, and lower body including the pelvis. Those scores are then calculated into one composite score on a scale of 0 to 75. A score of 75 means the injury was fatal.

Dr. Staudenmayer and her colleagues considered an ISS score of 15 or higher as a serious injury needing specialized care at a trauma center. They found that about 4 percent of the patients had an ISS score higher than 15. Within that group, 32.8 percent should have been taken to a trauma center, but were not. These patients were an average of one year older and most commonly had injuries from falls or motor vehicle accidents.

The researchers also reported cost differences. Medical care for severely injured elderly patients who went to trauma centers was more than $20,000 higher than those who went to nontrauma centers.
“Ensuring the specialized medical care and extra resources [are available] costs more money at a trauma center,” Dr. Staudenmayer explained.

However, there were no differences in death rates for severely injured patients at trauma centers compared with patients at nontrauma centers. “This result actually leads to more questions,” she said. “We need to determine which elderly patients actually are benefiting from trauma care and who would benefit more.”

She says the next step is to conduct research that looks at how elderly patients’ health status before they sustain injuries factors into outcomes for patients who don’t receive care at a trauma center.

“If we’re not doing something right, this will continue to cost lives and dollars,” Dr. Staudenmayer explained. “When we’re able to identify which patients actually

benefit from trauma care, we'll see fewer deaths in that subgroup. If we see elderly patients who have been on a steady physical decline, we can tell if the fall is a marker of poor outcomes or the cause. Then, we can save lives for some people or at least have a better discussion about how to proceed going forward."

Other participants in the study included Renee Y. Hsia, MD, MSc; N. Clay Mann, PhD, MS; David A. Spain, MD, FACS; and Craig D. Neward, MD, MPH.