Clin Orthop Relat Res (2014) 472:1018–1019
DOI 10.1007/s11999-013-3387-7

Clinical Orthopaedics and Related Research®
A Publication of The Association of Bone and Joint Surgeons®

CORR INSIGHTS

CORR Insights®: Association of a Modified Frailty Index with Mortality After Femoral Neck Fracture in Patients Aged 60 Years and Older

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Received: 7 November 2013 / Accepted: 8 November 2013 / Published online: 26 November 2013

Where Are We Now?

The development and utilization of implantable devices for the treatment of femoral neck fractures altered the natural history of the hip fracture "disease" from a veritable death sentence to a condition that, after surgery, could allow one not only to survive, but to thrive. These hip fractures, however, still cause considerable morbidity, and they do not affect all patients equally [1]. The 80-year-old woman who fractures her femoral neck after a trip and fall hurrying to catch a bus is not the same as the one who fell because she forgot to reach for her walker in an urgent shuffle to the bathroom after an episode of incontinence. Colloquially, we say that one woman is a "young 80" and the other is "old." The concept of "frailty" described in the report by Patel and colleagues helps to explain the physiological difference, and allows for a more objective assessment of health in much the same way that Charlson [2] quantified comorbidity to explain how house officers would often look at a patient and his or her history and conclude he or she was "sick" or "healthy." [4]. The population is aging, but staying healthier than previous generations [3, 5]. Although the implication of this finding is that the rates of significant injury are lower than they were in past years, the increase in the population considered to be elderly may actually lead to an increase in the occurrence of such injuries. A better understanding of frailty will have an impact on the practice of orthopaedic surgery in many important ways.

Where Do We Need To Go?

The current study by Patel and colleagues adds to a growing body of evidence to support the impact of frailty on the outcome of medical treatment. From this point, study should focus on delineating the effect of frailty in a number of important areas. First, further evaluation is needed to prospectively determine the effect of frailty on surgical outcome of hip fracture, particularly, the need for revision surgery, the occurrence of severe complications, and likelihood of returning to preinjury ambulatory function. Second, the effect of frailty on the outcome of other traumatic injuries should be explored. Common injuries of the elderly that impair the quality of life or ability to perform activities of daily living include vertebral compression fracture, proximal humerus fracture, and distal radius fracture. An understanding of these concepts will

This CORR Insights® *is a commentary on the article* "Association of a Modified Frailty Index with Mortality After Femoral Neck Fracture in Patients Aged 60 Years and Older" *by Patel and colleagues available at:* DOI: 10.1007/s11999-013-3334-7.

The author certifies that he, or a member of his immediate family, has no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article.
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This *CORR* Insights® comment refers to the article available at DOI: 10.1007/s11999-013-3334-7.

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allow for better patient counseling to establish realistic outcome expectations while obtaining informed consent. Third, the impact of frailty should be evaluated for elective surgery. As the population older than 60 years of age increases, so should the incidence of symptomatic degenerative disease with surgical indications. Assessment of the impact of frailty on total joint arthroplasty and spinal surgery likely will identify correlations with morbidity and mortality, and should reveal a level of frailty that would contraindicate surgical treatment.

How Do We Get There?

We will need high-quality studies to clarify how frailty influences the results of orthopaedic treatments in aging patients, whether the treatments in question are for injury or degenerative diseases. Retrospective studies similar to the current report by Patel and colleagues should be designed to evaluate the impact of frailty on hip fracture surgery, with particular attention to the relationship between frailty and surgery failure or complication. Similarly, retrospective studies should be feasible to evaluate the same parameters for vertebral compression fractures with hospital admission for inpatient care. Since many proximal humerus and distal radius fractures are treated on an outpatient basis, the frailty parameters defined by Patel and colleagues may be more difficult to evaluate retrospectively, and may therefore necessitate prospective collection of such data. Ultimately, the most compelling understanding of the impact of frailty on orthopaedic care of the elderly will come from either prospective collection of frailty data, the establishment of large-scale databases of fracture and degenerative disease treatment, or inclusion of frailty parameters in existing databases such as the Medicare claims database or the Nationwide Inpatient Sample.

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