Invited Commentary

Simple frailty score predicts postoperative complications across surgical specialties

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No modern surgical scientist would contest the fact that advanced age portends increasing surgical risk. What is not as clear is the implication of the term “advanced age.” This report is well worth careful review because it addresses this question from a variety of practical perspectives, including what is termed “the burden of frailty.”

Essentially, frailty can be defined from a physiologic perspective, which usually reflects cardiopulmonary function and the definition of an “anaerobic threshold,” below which stress-induced cardiopulmonary insufficiency undermines organ system function. Preexisting chronic disease may increase specific organ system vulnerability, but the basic driving factor is the cardiopulmonary system’s ability to maintain aerobic homeostasis during the period of surgical stress. A somewhat different approach is defined as phenotypic frailty, which addresses observable characteristics of aging that include weight loss, decreased grip strength, exhaustion, low activity, and slow walking speed.

These authors introduce a “frailty score,” which is hybrid of these 2 approaches. Not surprisingly, they demonstrate that increased frailty begets increased risk for surgical complications, longer hospital stays, and more readmissions. They take this relationship 1 step further by parsing out the relationship of increasing age with these outcomes, thereby addressing the question of whether age is simply a surrogate for decreasing cardiopulmonary reserve or a controlling variable of and by itself. For colorectal procedures, the contribution was significant (a 9.6% increased risk for complication per year), but for cardiac procedures, the effect was not significant (a 1.5% increased risk for complication per year). Could the latter finding actually reflect preexisting cardiac pathology that required surgical care in the first place?

The limitations of this study are clearly defined by the authors and include the limited types of procedures analyzed as well as the disproportionate representation of men typical of US Department of Veterans Affairs study populations. Nevertheless, there are numerous areas about which these findings should stimulate extensive thought.

First is a working concept of the burden of frailty and its relationship to outcome. Although the assessment mechanism used to compute this frailty score is an amalgamation of other specific scoring systems, taken together, the composite is nothing more than what any surgeon would consider a complete surgical history. The components are simply summed to produce a composite number. If such a system can define risk, then good patient counseling would mandate documentation and discussion of this risk. Similarly, from an overall outcomes perspective, this same risk, compiled over a patient cohort, becomes a population risk adjuster for performance assessment.

In addition, this report should raise 2 other questions that will clearly need to be addressed, especially as the population of elderly patients continues to increase. As noted, there were some differences between colorectal and cardiac procedures. What other common procedures have similar relationships of frailty and outcome? One or more complications occurred in 32% of this population undergoing nonemergent operative intervention. When a prospective operative candidate is identified as “prefrail,” or even “frail,” can an intensive period of preoperative preparation improve this state and thereby lower risk? Because the outcomes variables for this study were the incidence of complications, length of hospital stay, and readmission rate, definition of a “target frailty score” would benefit all of society, 1 patient at a time.