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Commentary: In cardiac surgery, you are only as old as you feel

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There is broad consensus among experts that frailty is associated with worse outcomes after cardiac surgery. In the last year alone, there have been numerous studies devoted to the subject, providing evidence that frailty predicts greater mortality, greater resource use, and lower functional outcomes and even dictates the nature and location of discharge from the hospital.¹⁻⁵ As a result, not only are select markers of frailty now incorporated into the Society of Thoracic Surgeons database, but groups are calling for more comprehensive preoperative frailty screening as a means to identify and triage patients at greatest risk.⁶ The challenge, of course, is there are either no universally accepted criteria for defining frailty, and established means involve cumbersome, time-consuming exercises or require specialized training and equipment.⁷

In addition, despite the fact that most literature classifies patients into categories, including pre-frail and frail designations,⁵ it is increasingly accepted that frailty is more accurately described along a spectrum, with varying degrees of severity. It is in this context that Sarkar and colleagues⁷ may provide additional clarity, having retrospectively evaluated patients undergoing cardiac surgery to develop a 20-point frailty score that incorporates binary risk variables across a host of patient-specific domains. Although these multifaceted rubrics are not necessarily novel⁸—evidenced by the fact that the authors embellished upon a deficit-based model provided by others⁹—the method offered by Sarkar and colleagues⁷ is particularly compelling because their results suggest that it is (1)

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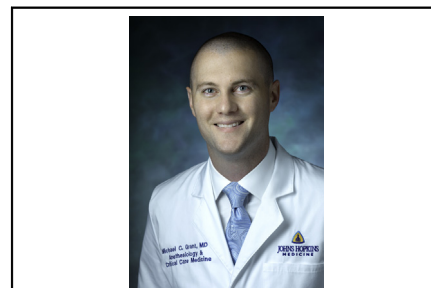
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CENTRAL MESSAGE

Frailty is potentially an age-independent predictor of outcomes. Care of the frail patient requires consensus regarding frailty diagnosis and establishment of goals for preoperative optimization.

age-independent, which casts the first stone against the basic tenet that age is inextricably linked to frailty, highlighting that age alone is a poor surrogate for surgical outcome; and (2) computed from data readily available through existing electronic health records, akin to widely used cardiac risk scores (ie, Society of Thoracic Surgeons and European System for Cardiac Operative Risk Evaluation), which suggests it has greater practical application compared with more labor-intensive assessment strategies.

As with all medical inquiry, the 2 steps forward offered by this study are accompanied by a cautious step back. In analytics, any model such as the one put forward by Sarkar and colleagues⁷ is strengthened with additional data, allowing for improved internal validation and codification. However, as the authors admit, the model still requires prospective external validation through not only its application to separate patient cohorts, but also through comparison with existing frailty-assessment modalities. Further, any exercise that identifies a vulnerable population in advance of cardiac surgery should be coupled with targeted interventions to mitigate risk. To that end, fledgling examples of preoperative optimization (or “prehabilitation”) have been focused on addressing individual modifiable risk factors, including preoperative anemia, sarcopenia, and exercise tolerance.^{6,10-12} However, in much the same fashion that preoperative risk assessment has expanded to acknowledge the many

interrelated domains that contribute to the frailty diagnosis, preoperative optimization should be equally multifaceted, with protocols developed to comprehensively address highlighted deficits. Time will tell if more automated risk stratification can inform better care for our most vulnerable patients, but our growing understanding of frailty suggests that the old saying is true: age is only a number.

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