The Importance of Incorporating Frailty Screening Into Surgical Clinical Workflow

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Regardless of the measure, frailty has been shown to be an independent risk factor of adverse outcomes across surgical specialties,1,3 and the Memorial Sloan Kettering—Frailty Index (MSK-FI), developed by Shahrokni et al4 is no different. A hallmark of an accurate frailty measurement is the inclusion of more than age and comorbidities, as frailty is multidimensional and encompasses additional domains, including the social, nutritional, cognitive, and functional.5 Preoperative risk assessment tools that incorporate more domains, such as the geriatric assessment (GA) and the Risk Analysis Index (RAI), outperform those that do not in predicting long-term mortality.3 Shahrokni et al6 describe how they crafted a novel retrospective frailty index based on the deficit-accumulation model and cross-walked from the modified Frailty Index (mFI) to include points for 10 comorbidities and 1 point for impaired functional status, resulting in an 11-point scale, similar to the mFI.6

Shahrokni et al4 then compared the MSK-FI with the formal GA, which is routinely administered preoperatively to surgical oncology patients 75 years and older in their Geriatrics Service. The MSK-FI was moderately correlated with the number of GA impairments (ρ = 0.52; 95% CI, 0.47-0.56). Despite the MSK-FI only including comorbidities and functional status, the authors did find higher MSK-FI scores among patients who would be considered frail in other domains (ie, experienced a fall in the past year, had poor Karnofsky performance status scores, had slower gait speed, had limited social activity, and were taking ≥5 medications). In the study by Shahrokni et al4 which included 1137 individuals undergoing surgery in 10 different specialties, patients with higher MSK-FI scores were more likely to experience longer lengths of stay, increased postoperative ICU admissions, and decreased overall 1-year survival rates. However, Shahrokni et al4 did not find an association of MSK-FI score with complications after surgery or 30-day readmissions, which is in contrast with prior work.3 Shahrokni et al4 concluded that future research should address the potential role of the MSK-FI in postoperative care processes and decision making surrounding adjuvant treatment in oncology patients.

We would advocate for applying frailty screening in the care of surgical patients a step further, or rather, earlier. Rapid frailty assessment tools, such as the RAI, have been shown to have excellent negative predictive values,7 ie, if patients are determined not to be frail, then there is a very high probability that the adverse outcome will not happen. In limited-resource settings, an advantage of tools such as the RAI and the proposed MSK-FI is to screen for frailty and rule out those who might not need the full GA.3 This precludes situations where typically high-value care becomes low-value care when delivered to robust patients who are unlikely to need extra attention and geriatric services, thereby allowing focus and resources to be directed toward high-risk surgical candidates based on an objective measure.

Another advantage of frailty screening tools is their ability to be integrated into the routine clinical workflow of surgeons as a supplement to the subjective assessment of patient fitness, or the so-called eyeball test. Leveraging the versatility of electronic medical record systems, frailty can be routinely assessed and documented in minutes to direct the next steps in preoperative management. From a practical standpoint, frailty screening can assist surgeons in identifying high-risk patients who might benefit from perioperative interventions, such as prehabilitation or nutritional consults, and can facilitate early discharge planning and preempt the need for postoperative rehabilitation.8 Moreover, preoperative frailty screening enhances the shared decision-making process by providing a structured opportunity to elicit patient preferences and incorporate quality-of-life considerations into the treatment plan, discussions central to patient-centered care.

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An unexplored use of frailty measures is to track longitudinal changes in patients. By recording frailty screening scores in electronic medical records, frailty can be used as a dynamic measure over time, monitoring patients’ past responses to physiological stressors and providing some estimate of how they might respond to future challenges. However, some frailty domains may vary more than others. For instance, in the case of comorbidity-based frailty indices, such as the mFI and the MSK-FI, a lone measurement of functional status that lacks granularity may not change over time. In contrast, tools that capture granular information on function and include measures within social, cognitive, and nutritional domains that can vary over time, such as the RAI, provide a unique opportunity to track frailty across a patient’s life span.

A number of retrospective and prospective frailty screening tools have been developed during the past decade, and much work has been done to convince clinicians that patient frailty is predictive of adverse perioperative outcomes. The next frontier of frailty research lies within the realm of implementation science, as we endeavor to incorporate frailty screening into routine clinical practice and electronic medical records. Until we make it easy for surgeons and ancillary health care professionals to adopt frailty screening into their clinical workflow, meaningful change in the care of high-risk patients will be hard to accomplish. We encourage future research to include real-world applications of preoperative frailty screening so that we might learn how to best implement these important tools.

**REFERENCES**


