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COMMENTARY

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Doing procedures for patients rather than to patients

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"*Optima dies … prima fugit*." "The best days are the first to flee." – *Georgics*, Book III, Virgil

As lifespans increase and populations age in developed countries, the cohort of patients presenting for medical care grows increasingly elderly and complex. A substantial literature has developed around the concept of patient selection, a term denoting the methodology for identifying patients likely to benefit and unlikely to suffer harm as a result of medical procedures.

The prevalence of aortic stenosis increases with age, from 0.2% at ages 50–59 years, to 1.3% at ages 60–69, 3.9% at ages 70–79 years, and 9.8% at ages 80–89 years.[1] In aging populations, more patients present for care for aortic stenosis. However, as the body ages and medical conditions accumulate, the body's ability to withstand stressors decreases, a multifactorial condition dubbed frailty.[2] Thus, in the population of elderly patients with aortic stenosis, assessment of frailty must guide consideration of invasive procedures. Specifically, while the advent of transcatheter aortic valve replacement (TAVR) has made treatment theoretically possible for patients ineligible for surgical AVR (SAVR), frailty testing must be utilized to identify patients likely to achieve favorable outcomes with TAVR.

Patient selection for TAVR requires a multidisciplinary team approach including interventional cardiologists, cardiac surgeons, anesthesiologists, and imaging specialists to study valvular and vascular anatomy as well as physiology.[3] Furthermore, to delineate risk profiles more holistically, input from geriatricians, neurologists, rheumatologists, orthopedists, and others may help to assess patients' ability to tolerate and recover from procedures. The importance of this frailty assessment has been evident since the dawn of the TAVR age: two of five patients in the PARTNER (Placement of AoRTic TraNscathetER Valve Trial) and CoreValve Pivotal trials experienced poor health-related quality of life or death within 1 year of TAVR.[4]

To optimize, standardize, and study frailty assessment, numerous quantitative scales have been developed. These scales must balance the competing goals of predictive accuracy and ease of use. In the present issue of *Catheterization and Cardiovascular Interventions*, Dautzenberg and colleagues report a retrospective cohort study of TAVR candidates undergoing perioperative evaluation at an outpatient geriatrics clinic. Frailty status was assessed using the Groningen Frailty Indicator (GFI), with 155 of the 431 patients (36%) identified as frail. Frailty was associated with an elevated risk for a composite outcome of postoperative complications, 30-day mortality, 3-month mortality, and 1-year mortality.[5] As shown in Table 1, these findings parallel the mortality outcomes seen with other frailty assessment scales.

Clearly, frailty assessment is a critical component of TAVR workup. For an institution's valve program to maximize patient benefit and minimize harm, the TAVR team must recognize that invasive therapy is not appropriate for every patient with severe aortic stenosis. Indeed, comprehensive valve programs must offer not only TAVR and SAVR but also guideline-directed medical therapy, palliative care, and end-of-life counseling to serve the needs of the full spectrum of aortic stenosis patients.

TAVR has made aortic valve replacement minimally invasive, exceedingly efficient, safe, durable, and widely available. However, remaining cognizant of when not to perform a procedure is just as important as when to pursue one, especially in the contemporary era of TAVR. This principle ensures that we do procedures *for* our patients, rather than *to* them.

TABLE 1 Odds of 1-year mortality post-TAVR according to binary frailty assessment

Frailty assessment tool	Frailty definition cutoff	Unadjusted OR for 1-year mortality post-TAVR (95% CI)
Fried	≥3/5	2.05 (1.36, 3.09)
Fried+	≥3/7	2.94 (1.80, 4.83)
SPPB	≤ 8/12	3.31 (1.80, 6.06)
Rockwood	≥5/9	2.83 (1.89, 4.25)
Bern	≥3/7	3.16 (1.96, 5.11)
Columbia	≥6/12	3.46 (2.13, 5.63)
EFT	≥ 3/5	3.77 (2.49, 5.72)
GFI[a]	≥ 4/15	2.41 (1.23, 4.69)

Note: The "+" indicates an additional parameter included in the scale.

Abbreviations: EFT, essential frailty toolset; GFI, Groningen frailty indicator; OR, odds ratio; SPPB, short physical performance battery; TAVR, transcatheter aortic valve replacement.

[a]Studied by Dautzenberg et al. in the present issue of this journal.

Source: Adapted from Afilalo (2017).

CONFLICT OF INTEREST

Dr. Goldsweig reports consulting fees from Inari Medical. The remaining author declares no conflict of interest.

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