

Addition of Frailty and Disability to Cardiac Surgery Risk Scores Identifies Elderly Patients at High Risk of Mortality or Major Morbidity

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Background—Cardiac surgery risk scores perform poorly in elderly patients, in part because they do not take into account frailty and disability which are critical determinants of health status with advanced age. There is an unmet need to combine established cardiac surgery risk scores with measures of frailty and disability to provide a more complete model for risk prediction in elderly patients undergoing cardiac surgery.

Methods and Results—This was a prospective, multicenter cohort study of elderly patients (≥ 70 years) undergoing coronary artery bypass and/or valve surgery in the United States and Canada. Four different frailty scales, 3 disability scales, and 5 cardiac surgery risk scores were measured in all patients. The primary outcome was the STS composite end point of in-hospital postoperative mortality or major morbidity. A total of 152 patients were enrolled, with a mean age of 75.9 ± 4.4 years and 34% women. Depending on the scale used, 20–46% of patients were found to be frail, and 5–76% were found to have at least 1 disability. The most predictive scale in each domain was: 5-meter gait speed ≥ 6 seconds as a measure of frailty (odds ratio [OR], 2.63; 95% confidence interval [CI], 1.17–5.90), ≥ 3 impairments in the Nagi scale as a measure of disability (OR, 2.98; 95% CI, 1.35–6.56) and either the Parsonnet score (OR, 1.08; 95% CI, 1.04–1.13) or Society of Thoracic Surgeons Predicted Risk of Mortality or Major Morbidity (STS-PROMM) (OR, 1.05; 95% CI, 1.01–1.09) as a cardiac surgery risk score. Compared with the Parsonnet score or STS-PROMM alone, (area under the curve, 0.68–0.72), addition of frailty and disability provided incremental value and improved model discrimination (area under the curve, 0.73–0.76).

Conclusions—Clinicians should use an integrative approach combining frailty, disability, and risk scores to better characterize elderly patients referred for cardiac surgery and identify those that are at increased risk. (*Circ Cardiovasc Qual Outcomes*. 2012;5:222–228.)

Key Words: cardiac surgery ■ outcomes ■ aging ■ frailty ■ disability ■ elderly ■ heart valve surgery

The elderly represent the fastest growing group of patients referred for cardiac surgery, with the proportion of patients aged 75 years or older steadily rising from 16% in 1990 to 25% in most recent estimates.¹ Advanced age is frequently accompanied by a larger burden of comorbid conditions and greater illness severity. In the setting of cardiac surgery, elderly patients are more likely to have extensive coronary artery disease and concomitant valvular disease and are more likely to require urgent or emergent surgery.^{2,3} Nevertheless, elderly patients

have consistently been shown to derive sizeable benefits from cardiac surgery.^{4,5} This risk-benefit dichotomy renders the process of selecting appropriate elderly patients particularly challenging for the cardiac surgeon. Numerous cardiac surgery risk scores which incorporate clinical and demographic variables have been developed to predict operative risk and help guide patient selection in cardiac surgery.^{6–15} Some of these models, such as EuroSCORE, have been reported to perform less well in the elderly in which the predicted risks overestimate mortality

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and do not correlate well with postoperative morbidity.^{16,17} Risk scores do not contain all relevant factors associated with increased risk in the elderly population, in particular, frailty and disability.

Frailty is defined as a geriatric syndrome of impaired resiliency to stressors (such as cardiac surgery) that has been delineated in the geriatric literature¹⁸ and more recently in the cardiovascular literature.¹⁹ Disability is defined as an impaired ability to carry out functional tasks. Various scales exist to measure frailty and disability, some based on physical performance tests and others on questionnaires. Although there is significant overlap between frailty, disability, and comorbidity, it is generally agreed on that these represent distinct domains^{20–22} (Figure 1). We hypothesized that the additional domains of frailty and disability would contribute to the risk of cardiac surgery when considered with comorbidity-centered risk scores. Therefore, we sought to compare the prognostic value of various frailty, disability, and cardiac surgery risk scales and to identify the optimal combination of these scales for a comprehensive approach to predict risk in elderly patients undergoing cardiac surgery.

WHAT IS KNOWN

- Prediction of operative risk using available risk scores is less accurate in elderly patients referred for cardiac surgery.
- Elderly patients often present with a heavy burden of comorbidity, disability, and perceived frailty.
- Multiple scales exist to measure surgical risk as well as frailty and disability, yet the optimal combination of scales remains unknown.

WHAT THE STUDY ADDS

- Frailty and disability provide incremental prognostic value above surgical risk scores for predicting mortality or major morbidity.
- The optimal combination of scales consists of the Parsonnet surgical risk score, 5-meter gait speed as a measure of frailty, and the Nagi scale as a measure of disability.

Methods

Study Design

A prospective cohort of consecutive elderly patients undergoing cardiac surgery was assembled at 4 hospitals in the United States and Canada between 2008–2010. Before planned cardiac surgery, study researchers enrolled patients and administered a questionnaire, 5-meter gait speed test, and handgrip strength test. The evaluation included measures of frailty, disability, comorbid conditions, and traditional risk factors for adverse surgical outcomes. Treating physicians were unaware of the results of these tests. The primary outcome was a composite of postoperative mortality or major morbidity (defined according to the Society of Thoracic Surgeons²³ as stroke, renal failure, prolonged ventilation, need for reoperation, or deep sternal wound infection) occurring during the index hospitalization. Outcomes were abstracted from medical records by blinded observers. The study was carried out in accordance with the

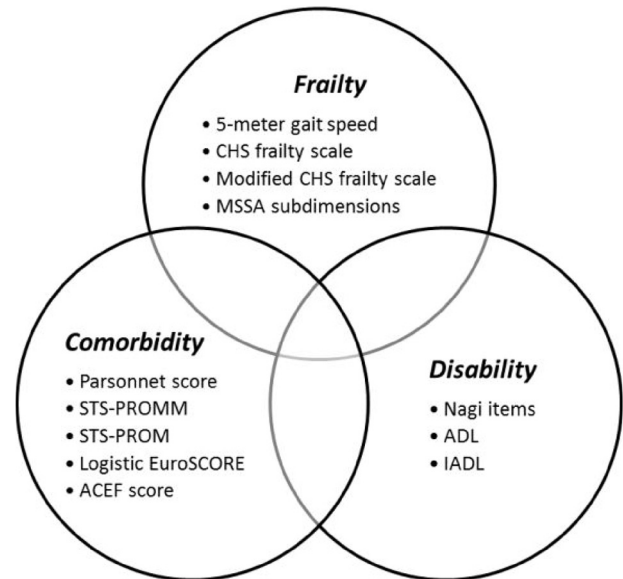


Figure 1. Various scales to measure frailty, disability, and comorbidity/cardiac surgery risk. CHS indicates Cardiovascular Health Study; MSSA, MacArthur Study of Successful Aging; STS-PROMM, Society of Thoracic Surgeons Predicted Risk of Mortality or Major Morbidity; STS-PROM, Society of Thoracic Surgeons Predicted Risk of Mortality; ACEF, Age Creatinine Ejection Fraction; ADL, Activities of Daily Living; and IADL, Instrumental Activities of Daily Living.

Strengthening of Reporting of Observational Studies in Epidemiology (STROBE) Statement.²⁴

Setting

The participating hospitals were university-affiliated tertiary care centers with high-volume cardiac surgery programs. The hospitals were: SMBD–Jewish General Hospital (McGill University, Montreal, Quebec, Canada), Hôtel-Dieu de Montréal (University of Montreal, Montreal, Quebec, Canada), Montreal Heart Institute (University of Montreal), and Duke University Medical Center (Duke University, Durham, NC). Patients were enrolled in both the outpatient and inpatient facilities. Ethics approval was obtained from the institutional review board at each of the participating hospitals. Patients were required to sign an informed consent to participate.

Participants

Inclusion criteria were (1) age ≥ 70 years and (2) scheduled cardiac surgery, defined as coronary artery bypass and/or valve replacement or repair via a standard sternotomy approach. Patients scheduled to undergo cardiac surgery who were recruited into the study but then subsequently had their surgery cancelled were removed from the cohort and not considered in the primary analysis ($n=9$). Exclusion criteria were (1) emergent surgery, defined as a surgery for which there should be no delay due to ongoing refractory cardiac compromise, (2) clinical instability, defined as active coronary ischemia, decompensated heart failure not yet stabilized, or any acute process causing significant symptoms or abnormal vital signs, and (3) severe neuropsychiatric condition causing inability to cooperate with the study procedures.

Measurements

The study questionnaire and physical performance tests measured frailty, disabilities, and sociodemographic characteristics. The medical record was used to capture comorbid conditions and illness severity and in turn to calculate cardiac surgery risk scores. These risk scores are widely used to predict outcomes in patients undergoing cardiac surgery.

Table 1. Five-Meter Gait Speed Test

Instruct to "Walk at your comfortable pace" until a few steps past the 5-meter mark (should not start to slow down before)
Begin each trial on the word "Go"
Start the timer with the first footfall after the 0-meter line
Stop the timer with the first footfall after the 5-meter line
Repeat 3 times and record average, allowing sufficient time for recuperation between trials
Frailty is defined as an average time taken to walk the 5-meter course ≥ 6 seconds

Frailty Scales

A number of scales exist to measure frailty, including the 4 examined in this study: (1) the 5-item Cardiovascular Health Study (CHS) frailty scale [gait speed, handgrip strength, inactivity, exhaustion, weight loss]²⁵; (2) the 7-item expanded CHS frailty scale [CHS scale+cognitive impairment and depressed mood]^{26,27}; (3) the 4-item MacArthur Study of Successful Aging (MSSA) frailty scale subdimensions [gait speed, handgrip strength, inactivity, cognitive impairment]²⁸; and (4) gait speed alone—with frailty defined as ≥ 6 seconds required to walk 5 meters (Table 1 for a detailed description of the gait speed test).

Disability Scales

The 3 disability scales examined in this study were, in ascending order of basic functional tasks to high-level functional tasks: (1) the 6-item Katz Activities of Daily Living (ADL) scale [going to the toilet, bathing, dressing, eating, moving around, controlling bladder/bowel],²⁹ (2) the 7-item Older Americans Research and Services Instrumental Activities of Daily Living (IADL) scale [doing housework, going shopping, preparing meals, handling money, taking medicine, using telephone, getting to places],³⁰ and (3) the 7-item Nagi scale³¹ (Table 2 for a detailed description of the Nagi scale).

Risk Scores

A number of cardiac surgery risk scores exist to predict mortality and to a lesser extent morbidity. These risk scores are centered on comorbid conditions and variables relating to illness severity. The 5 risk scores used in this study were (1) the Society of Thoracic Surgeons Predicted Risk of Mortality (STS-PROM),¹⁰ (2) the Society of Thoracic Surgeons Predicted Risk of Mortality or Major Morbidity (STS-PROMM),¹⁰ (3) the logistic EuroSCORE,⁸ (4) the revised Parsonnet score,⁹ and the (5) Age-Creatinine-Ejection Fraction (ACEF) score.³²

Statistical Methods

The association between the measured scales and postoperative mortality or major morbidity was evaluated using the Wilcoxon rank-sum test and logistic regression. Using univariate logistic regression, unadjusted odds ratios and metrics of model performance were calculated for each scale. The selected metrics of model performance were area under the receiver operating characteristic

curve (AUC, a measure of discrimination), the Akaike Information Criterion (AIC, a measure of global model fit), and integrated discrimination improvement (IDI, a measure of reclassification representing the average increase in model sensitivity assuming no decrease in model specificity).³³ By comparing these metrics of model performance, the highest performing frailty, disability, and risk scales were identified. All of the scales in each domain were then entered in a series of multivariable models combining 1 frailty scale, 1 disability scale, and 1 risk scale (60 different combinations). The sample size calculation has been explained in a prior publication.³⁴ In brief, 136 patients were required to demonstrate a 2-fold increase in mortality or major morbidity between frail and nonfrail patients (as well as patients with and without disability) assuming a 2-tailed α of 0.05 and a β of 0.20 (80% power). All analyses were performed with the STATA 11 statistical software package (College Station, TX).

Results

Of 389 eligible patients, 152 patients were enrolled and followed prospectively (Figure 2). There were no systematic differences between enrolled and nonenrolled patients. No patients were lost to follow-up. The mean age was 75.9 ± 4.4 years, with 34% women. Patient characteristics are summarized in Table 3. The proportion of patients categorized as being frail varied depending on the scale used, ranging from 20% using the CHS frailty scale to 46% using the single measure of 5-meter gait speed. Similarly, the proportion of patients categorized as having any disability varied depending on the scale used; ranging from 5% using the ADL scale, to 32% using the IADL scale, and 76% using the Nagi scale.

In all frailty scales evaluated, the mean frailty scores were higher in the group of patients that had a major morbidity or mortality after surgery as opposed to the group of patients that did not (Table 4). However, only the 5-meter gait speed was found to be statistically significant. Slow gait speed, defined as a time taken to walk 5 meters of ≥ 6 seconds, was associated with an increase in mortality or major morbidity (odds ratio [OR], 2.63; 95% confidence interval [CI], 1.17–5.90) and demonstrated superior predictive ability (AUC=0.64, AIC=154.1) compared with other frailty scales.

Among disability scales, the number of ADL impairments was not different in patients who had and did not have an adverse postoperative event, in part due to the fact that ADL impairments were exceedingly rare (5% of patients) (Table 4). Therefore, basic disability could not be considered as a contributing factor in this population. Instrumental disability as assessed by the IADL and Nagi scales did demonstrate discrimination. The number of IADL and Nagi impairments were higher in patients who had an adverse postoperative event, although only the Nagi scale was statistically significant, conferring a 28% increase in risk per impairment (OR, 1.28; 95% CI, 1.06–1.54) and demonstrating fair predictive ability (AUC=0.65, AIC=161.1).

For all risk scores evaluated, the mean risk scores were higher in patients who had a major morbidity or mortality after surgery. Overall, the mean risk scores were greatest with the Parsonnet score (20.9 points), followed by STS-PROMM (19.2%), logistic EuroSCORE (10.4%), ACEF score (4.9%), and STS-PROM (3.3%) (Table 4). The STS-PROMM, STS-PROM, logistic EuroSCORE, and Parsonnet score were significant predictors of mortality or major morbidity, whereas the ACEF score was not (Table 4). There was trend

Table 2. Nagi Scale

Significant disability is defined as any difficulty performing 3 or more of these items
1. Pulling or pushing a large object like a living room chair
2. Bending over, crouching, or kneeling
3. Raising your arms over your head
4. Picking up or handling small objects with your fingers
5. Lifting something that weights >10 pounds (5 kilos)
6. Walking up or down a flight of stairs
7. Walking 1 mile (1.5 km)

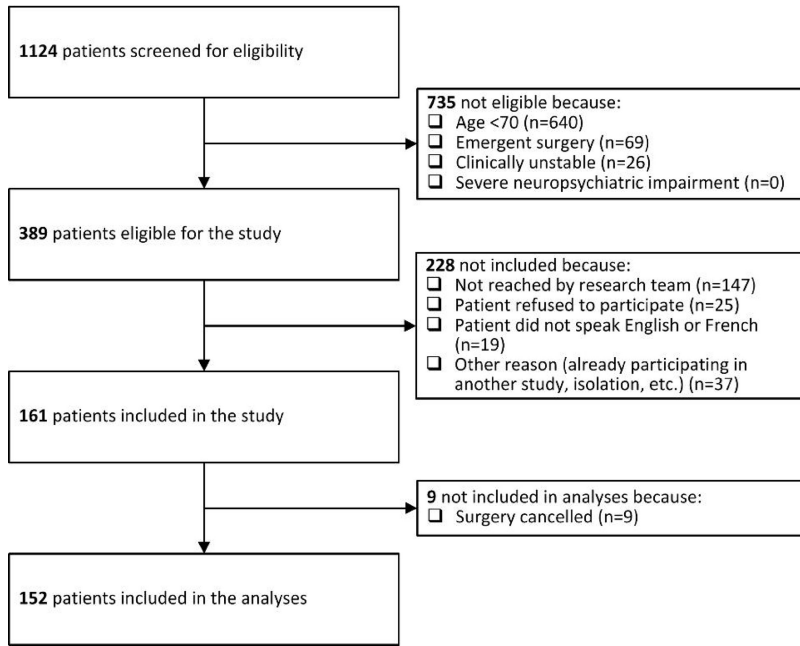


Figure 2. Flow diagram.

to suggest that the Parsonnet score (AUC=0.72, AIC=155.3) and STS-PROMM (AUC=0.68, AIC=166.5) had the best predictive ability.

When the different combinations of scales were explored, the multivariable model combining slow 5-meter gait speed, Parsonnet score, and Nagi scale yielded the greatest AUC of 0.76 (compared with 0.72 with the Parsonnet score alone),

suggesting that this was the optimal model to predict mortality or major morbidity in this cohort. The integrated discrimination improvement, a measure of reclassification reflecting the increase in model sensitivity assuming no change in specificity, was 2% (95% CI, 0–5%). The multivariable model combining 5-meter gait speed, STS-PROMM, and Nagi scale yielding an AUC of 0.73 (compared with 0.68 with the STS-PROMM alone). The lowest AUC of 0.65 was obtained by combining the MSSA frailty scale, the ACEF risk score, and the OARS IADL disability scale. For a given level of predicted risk, 5-meter gait speed ≥ 6 seconds was an incremental predictor of mortality or major morbidity (OR, 2.53; 95% CI, 1.15–5.52, and OR, 2.28; 95% CI, 1.02–5.21 adjusted for STS-PROMM and Parsonnet, respectively) as were ≥ 3 impairments in Nagi scale (OR, 2.66; 95% CI, 1.18–5.96, and OR, 2.17; 95% CI, 0.93–5.04 adjusted for STS-PROMM and Parsonnet, respectively).

In sensitivity analyses, the odds ratios and metrics of model performance remained similar after adding individual sociodemographic and operative covariates in multivariable models. Moreover, there appeared to be an interaction between frailty and disability whereby the bulk of the predictive yield was derived for frailty when disability was not present (the odds ratio for slow gait speed was 1.39 in patients with disability versus 3.13 in patients without disability). This supports the notion that the effect of frailty is less substantial in patients who have progressed to the more advanced stage of accruing disabilities.

Discussion

To our knowledge, this multicenter study is the first to compare various scales and demonstrate that the integration of frailty and disability with cardiac surgery risk scores adds incremental value in predicting mortality or major morbidity after cardiac surgery. The presence of frailty, defined by a 5-meter gait time of ≥ 6 seconds, was associated with a 2-fold

Table 3. Patient Characteristics

	Total (n=152) n (%)
Age, y, mean (SD)	75.9 (4.4)
Age ≥ 80 y	35 (23)
Female	52 (34)
Myocardial infarction	64 (42)
Congestive heart failure	44 (29)
Obesity	33 (22)
Hypertension	112 (74)
Dyslipidemia	101 (66)
Diabetes	57 (38)
Chronic kidney disease	28 (18)
COPD	41 (27)
Peripheral artery disease	15 (10)
Stroke	16 (11)
Prior cardiac surgery	9 (6)
Urgent surgery	83 (55)
Off-pump surgery	14 (14)
Type of surgery	
Isolated CABG	91 (60)
Valve replacement/repair	27 (18)
Valve + CABG	34 (22)

COPD indicates chronic obstructive pulmonary disease; CABG, coronary artery bypass graft surgery.

Table 4. Comparison of Risk Scores, Frailty, and Disability Scales to Predict Mortality or Major Morbidity

	Mortality or Major Morbidity		Odds Ratio (95% CI)	Area Under Curve (95% CI)	AIC
	Yes (n=37) Mean±SD	No (n=115) Mean±SD			
Frailty scales					
CHS scale, /5	1.8±1.1	1.4±1.1	1.36 (0.97–1.90)	0.60 (0.49–0.70)	169
Modified CHS scale, /7	2.6±1.5	2.1±1.4	1.26 (0.97–1.63)	0.58 (0.48–0.68)	170
MSSA subdimensions, /4	1.9±1.2	1.6±1.1	1.24 (0.90–1.70)	0.56 (0.46–0.67)	171
Gait speed alone	7.0±2.6*	6.3±2.9*	2.63 (1.17–5.90)	0.64 (0.53–0.75)	154
Risk scores					
STS-PROMM, %	22.8±9.4*	18.1±9.5*	1.05 (1.01–1.09)	0.68 (0.58–0.77)	167
STS-PROM, %	4.1±2.8*	3.0±2.5*	1.15 (1.004–1.31)	0.67 (0.58–0.76)	169
Logistic EuroSCORE, %	14.6±13.8*	9.0±7.3*	1.06 (1.02–1.10)	0.65 (0.55–0.75)	164
Parsonnet score, points	27.0±10.5*	19.0±9.4*	1.08 (1.04–1.13)	0.72 (0.63–0.81)	155
ACEF score, %	5.9±10.0	4.5±7.6	1.02 (0.98–1.06)	0.54 (0.43–0.65)	172
Disability scales					
ADL, /6	0.1±0.3	0.1±0.6	0.98 (0.47–2.02)	0.48 (0.43–0.53)	168
IADL, /7	0.9±1.6	0.6±1.1	1.19 (0.90–1.57)	0.54 (0.44–0.63)	167
Nagi, /7	3.3±2.0*	2.2±2.0*	1.28 (1.06–1.54)	0.65 (0.55–0.75)	161

CI indicates confidence interval; AIC, Aikaikes Information Criterion (lower value indicates superior model fit); CHS, Cardiovascular Health Study; MSSA, MacArthur Study of Successful Aging; STS-PROMM, Society of Thoracic Surgeons Predicted Risk of Mortality or Major Morbidity; STS-PROM, Society of Thoracic Surgeons Predicted Risk of Mortality; ACEF, Age Creatinine Ejection Fraction; ADL, Activities of Daily Living; and IADL, Instrumental ADL.

*Denotes *P* value for comparison <0.05.

increase in mortality or major morbidity after adjusting for risk. Similarly, the presence of high-level disability, defined by at least 3 impairments in Nagi's scale, was associated with a significant increase in adjusted risk. Among the risk scores evaluated, the Parsonnet score and STS-PROMM demonstrated the best discriminative ability for mortality or major morbidity in elderly patients.

Three recent studies have shed light on the importance of frailty in elderly patients undergoing cardiac surgery. A report from the first 131 patients enrolled in this cohort showed that slow gait speed was an independent predictor of mortality or major morbidity and discharge to convalescence or rehabilitation facilities after adjusting for STS-PROMM and for prespecified core risk factors.³⁴ In this initial report, frailty was classified based on slow gait speed alone and did not take into account the various frailty scales which were evaluated and compared in the current analyses. Thus, although the utility of frailty had been highlighted, the optimal method to measure frailty (as well as disability and cardiac surgery risk) had not been addressed and represented an important void in the published literature. Data from the Heart Center Leipzig study showed that frailty, defined by the CHS scale as well as impairments in IADLs and other parameters, was associated with higher rates of postoperative mortality.³⁵ Data from the Maritime Heart Center Cardiac Surgery Registry showed that impairments in ambulation and ADLs, albeit rare in the setting of cardiac surgery, were predictive of postoperative mortality.³⁶

The scales used to measure frailty varied widely in the aforementioned studies, both in terms of complexity (from 1–10 items) and reported prevalence of frailty (4–46%).

Moreover, some studies incorporated measures of disability within their frailty scales, making it difficult to distinguish the two. In this study, 4 commonly used frailty scales were measured in the same patients enabling a direct comparison of the prevalence and prognostic impact of frailty with each scale. Moreover, 3 commonly used disability scales were measured enabling a separate assessment of the contribution of disability to postoperative outcomes.

Frailty Scales

The single measure of 5-meter gait speed was superior to other frailty scales in predicting postoperative mortality or major morbidity. This finding is consistent with previous studies which have similarly shown gait speed to outperform other more complex frailty scales.^{26,37,38} Among 309 elderly patients admitted to a coronary care unit with severe coronary artery disease, gait speed outperformed the CHS frailty scale, the Rockwood frailty scale, handgrip strength, and balance testing in predicting 6-month mortality.³⁸ One reason for this finding may be the simple and reliable nature of the measurement from both the patient's and observer's perspective,³⁹ including hospitalized patients and those with cognitive impairments.⁴⁰ Another reason may be the lack of a questionnaire-based component that tends to be more subjective and susceptible to error.

Disability Scales

The Nagi scale was superior to the ADL and IADL scales. The ADL and IADL scales reflect impairments in low-level functional tasks such as getting dressed or using the telephone without help. This study is consistent with previous studies in showing that ADL and IADL impairments are rare in patients

referred for cardiac surgery,^{36,41} in part because patients with these advanced disabilities are often not referred for invasive procedures such as cardiac surgery. The presence of ADL and IADL impairments is likely an adverse risk factor; however, the yield of routinely measuring these scales is low given their rarity. In contrast, the Nagi scale reflects impairments in higher-level tasks such as handling small objects or walking up a flight of stairs. These types of impairments are much more prevalent and provide a greater sensitivity and higher overall yield.^{42,43}

Risk Scores

Among various cardiac surgery risk scores, there was evidence suggesting that the Parsonnet score and STS-PROMM were superior. The STS-PROMM has the inherent advantage of being intended to predict mortality and major morbidity, whereas the other risk scores were designed to predict mortality. Applicability of mortality risk scores to predict morbidity has not been well validated and appears to be roughly correlated at best.^{44–46} Parsimonious risk scores that contain a select number of comorbidities such as the EuroSCORE (contains 4 comorbid conditions) and ACEF (reflects 2 comorbid conditions) were found to be the least predictive of morbidity. Although parsimonious risk scores may perform well to predict mortality in younger patients, this study showed that a more comprehensive portfolio of risk factors is desirable to predict morbidity in heterogeneous elderly patients.

A number of limitations merit consideration. First, to limit the number of hypotheses tested, the number of frailty and disability scales was restricted to the 3–5 most established scales, causing certain potentially interesting parameters to be omitted. It is possible that other scales or combinations of scales may be important in predicting risk. Second, cardiac surgery risk scores were entered as global scores rather than their individual component variables. This technique has the advantage of maintaining parsimonious models but the disadvantage of potentially overlooking a confounded effect between frailty or disability and one of the individual covariates. Although sensitivity analyses did not show signs of residual confounding, this remains a possibility which we cannot entirely rule out. Third, because disability may act as an intermediate factor between frailty and adverse outcomes, frailty and disability were not entered together in multivariable models as this results in overadjustment and model instability.⁴⁷ Instead, separate models containing the risk scores and either frailty or disability were evaluated. Fourth, certain frailty scales and all disability scales were based on questionnaires which are inherently susceptible to errors of recall. To minimize this risk, patients were interviewed with their family members and caretakers whenever possible. Last, the absolute magnitude of the effect of the various scales should be interpreted cautiously in light of the width of the confidence intervals.

In conclusion, frailty and disability were found to be complementary and additive to existing risk scores for predicting mortality or morbidity in elderly patients undergoing cardiac surgery. Particularly, 5-meter gait speed ≥ 6 seconds and the presence of 3 or more impairments on Nagi scale

were each predictive of an increase in risk of in-hospital morbidity and mortality after cardiac surgery above that predicted by risk scores. With the growth of minimally invasive and transcatheter cardiac interventions, the expansion of risk prediction beyond traditional risk factors and risk scores has become a high priority. Clinicians may use this integrative approach of combining risk scores with frailty and disability to better characterize elderly patients referred for cardiac interventions and identify those that are vulnerable and at increased risk. A multidisciplinary team involving cardiac surgery, cardiology, geriatric medicine, physiotherapy, and occupational therapy may be well suited to address these diverse elements which contribute to postoperative risk.

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