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## PAPER OF THE MONTH • JULY 2017



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# JACC

JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY

## Frailty in Older Adults Undergoing Aortic Valve Replacement

### The FRAILTY-AVR Study

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**BACKGROUND** Frailty is a geriatric syndrome that diminishes the potential for functional recovery after a transcatheter aortic valve replacement (TAVR) or surgical aortic valve replacement (SAVR) procedure; however, its integration in clinical practice has been limited by a lack of consensus on how to measure it.

**OBJECTIVES** This study sought to compare the incremental predictive value of 7 different frailty scales to predict poor outcomes following TAVR or SAVR.

**METHODS** A prospective cohort of older adults undergoing TAVR or SAVR was assembled at 14 centers in 3 countries from 2012 to 2016. The following frailty scales were compared: Fried, Fried+, Rockwood, Short Physical Performance Battery, Bern, Columbia, and the Essential Frailty Toolset (EFT). Outcomes of interest were all-cause mortality and disability 1 year after the procedure.

**RESULTS** The cohort was composed of 1,020 patients with a median age of 82 years. Depending on the scale used, the prevalence of frailty ranged from 26% to 68%. Frailty as measured by the EFT was the strongest predictor of death at 1 year (adjusted odds ratio [OR]: 3.72; 95% confidence interval [CI]: 2.54 to 5.45) with a C-statistic improvement of 0.071 ( $p < 0.001$ ) and integrated discrimination improvement of 0.067 ( $p < 0.001$ ). Moreover, the EFT was the strongest predictor of worsening disability at 1 year (adjusted OR: 2.13; 95% CI: 1.57 to 2.87) and death at 30 days (adjusted OR: 3.29; 95% CI: 1.73 to 6.26).

**CONCLUSIONS** Frailty is a risk factor for death and disability following TAVR and SAVR. A brief 4-item scale encompassing lower-extremity weakness, cognitive impairment, anemia, and hypoalbuminemia outperformed other frailty scales and is recommended for use in this setting.