The positive impact of early frailty levels on outcomes of Transcatheter Aortic Valve Replacement.

Data from a multidisciplinary pathway according frailty-based management of aortic stenosis in elderly

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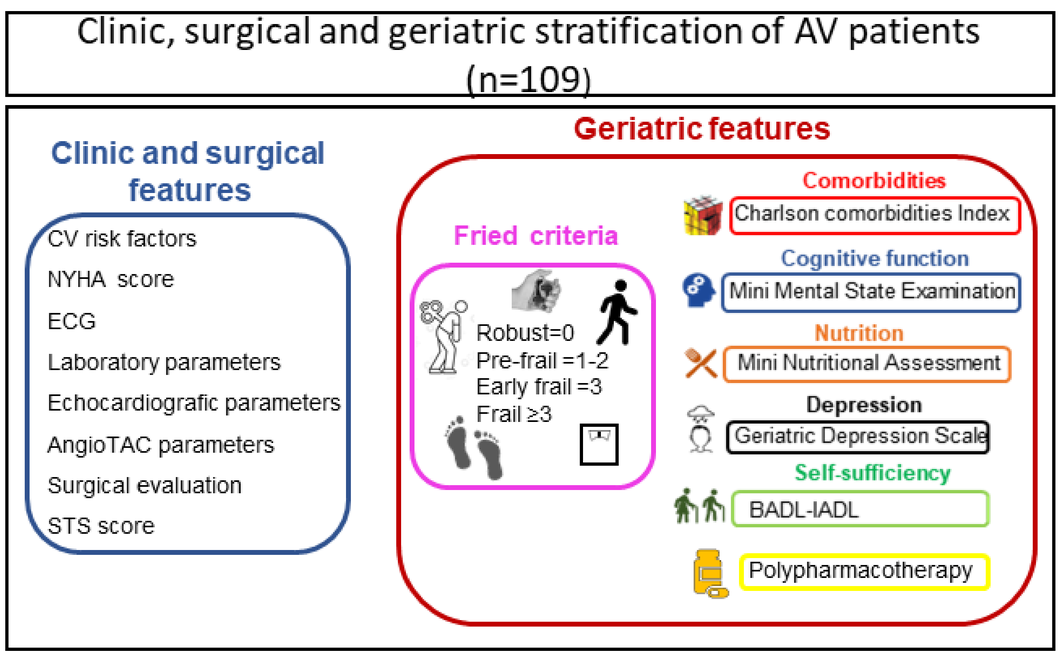
Background: Frailty among older pts undergoing transcatheter aortic valve replacement (TAVR) is high and associated with poor outcomes and mortality. Elderly pts selection who can benefit from TAVR is challenging

Objective: To evaluate outcomes in older severe aortic valve stenosis (AS) patients (pts), selected by an outdoor multidisciplinary pathway for surgical, clinical, and geriatric risk and referred to a tailored treatment, according to frailty-based management.

Methods: 109 pts (83±5 years, females 68%) with AS were classified according to Fried's score in pre-frail, early frail, and frail and referred to tailored treatment (SAVR/TAVR, balloon aortic valvuloplasty, medical therapy). Comprehensive geriatric assessment, clinical and surgical features were evaluated. Periprocedural complications were detected after interventional treatments; global and CV mortality were our outcomes at 20 months of follow-up.



Variable	All patients (n=109)	Pre-Frail (n=43)	Early Frail (n=28)	Frail (n=38)	p Value
Age (yrs)	83.3±5.5	83.3±4.7	84±4.9	83±6.6	0.72
Female	74(68)	26(60)	17(61)	31(81)	0.08
Comorbidities					
CHF	44(40)	17(39.5)	15(53.5)	12(31.5)	<0.0001
CLASSE NYHA I-II IIb-III-IV	70(64.2) 39(35.8)	35(81.4) 8(18.6)	18(64.2) 10(35.7)	17(44.7) 21(55.2)	0.002
PAP	46.7±11.3	43.5±9.4	45±9.5	51.7±12.9	0.003
EF, %	57.4±8.6	61±6	58±6.7	53.8±10	0.0001
MVR	46 (42.2)	12(28)	17(60.7)	17(44.7)	0.03
STS score	4.45 (2.7-6.1)	4 (2.5-4.6)	4.6 (4 -5.5)	5.4 (2.3-9.8)	0.02

Variable	All patients (n=109)	Pre-Frail (n=43)	Early Frail (n=28)	Frail (n=38)	p Value
Total number drugs	6.7 ±2.5	6.3 ±2	7.2±3.3	7.3±2	0.07
Depressive symptoms, GDS pts	3.7 [1-5]	2 [1-3]	3.5 [1-5.5]	4 [2-9]	0.023
Depressive symptoms (≥5 pts), n (%)	24(22)	4(9)	7(25)	13(34)	
Charlson Comorbidity Index, CCI	4.3±2.2	3.3±1.8	4.6±2.4	5.2±2.2	0.0005
Comorbidities number >2, n (%)	87 (80.6)	27 (62.7)	23 (82)	37 (97)	
Nutrition status, MNA pts	10.5 ± 2.3	11.8±2.2	10.6 ±2.2	8.6 ±2.6	<0.0001
Malnutrition (≤8 pts), n (%)	19 (17)	1 (2)	3 (11)	15 (39)	
Cognitive status, MMSE pts	24.5(23-28)	27 (26-29)	25 (24-27)	21 (14-27)	<0.0001
Impaired cognition (≤ 18 pts), n (%)	15 (13.8)	10 (23)	14 (50)	23 (60)	
Sarcopenia	54(49)	7(16)	13(46)	34 (89)	<0.0001
Disability					
Basic activity of day living: BADL	5.1±1.48	5.7±0.96	5.4±0.9	4.3±1.9	<0.0001
Instrumental activities of day living: IADL	6.1±2.3	7.4±1.3	6.6±1.6	4.3±2.4	<0.0001

Results: Increasing frailty was associated with worst clinical, surgical, and geriatric pictures. Frail pts had higher NYHA III-IV (p=0.002) PAPs (p=0.003) creatinine (p<0.0001) STS score (p=0.016); cognitive impairment (p<0.0001), depression (p<0.0001) malnutrition (p<0.001), disability (p<0.001) and comorbidity (p=0.0005). According to Fried criteria, the patients underwent tailored treatment for AS. Patients who underwent SAVR were 19%, all included in the pre-frail group; to TAVR were 81% in the pre-frail, 75% in the early, and only 8% in the frail group, undergoing to interventional treatment of aortic stenosis for a surgical neoplastic disease. Patients treated with BAV the were 25% in the early and 55% in the frail group, and with MT were 37% in the frail group (Fig 1). The global mortality resulted significantly increased with increasing frailty levels (pre-: 9.3%; early: 10.7%; frail: 50 %, p <0.0001). Cardiovascular death, was the first cause of death (76%), due to heart failure (HF) (65%), acute myocardial infarction (29%) and ictus (6%), followed by oncological disease (24%). Kaplan-Meier analysis showed that survival was higher both in the prefrail and TAVR groups (p< 0.001) (Fig 2) . Cox regression model indicated that frailty (p=0.004), heart failure (p=0.007), EF% (p=0.043), and albumin (p=0.018) were independently associated with 20-months-all-cause mortality (Fig 3).

Conclusions: Despite tailored management according to frailty, elderly AS pre-frailty pts appear as ideal candidates for TAVR/SAVR for their positive outcomes. Advanced frailty would make each treatment futile or palliative. The entry door into the frailty continuum process may be the key to the safety and efficacy of TAVR/SAVR

Fig 1

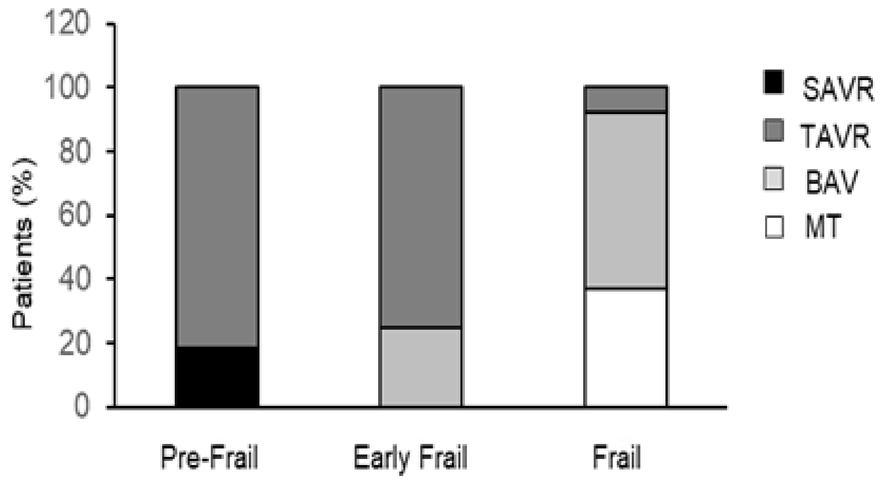
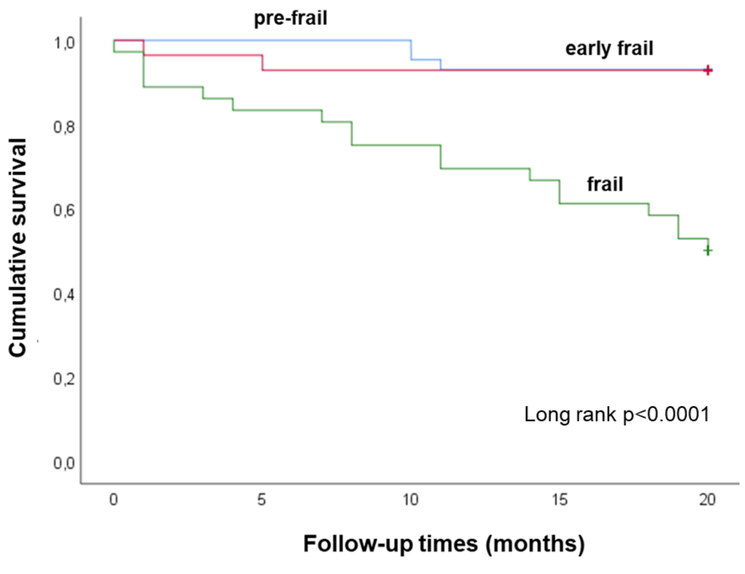


Fig 2



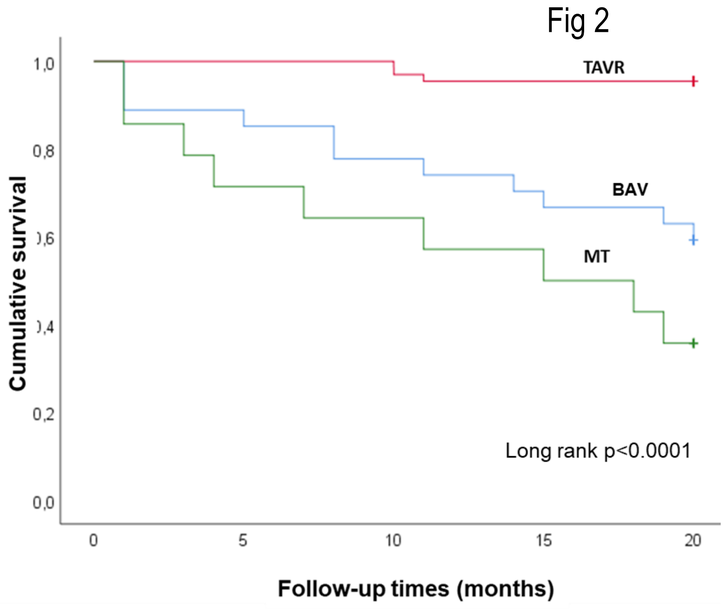


Fig 3