

Atrial fibrillation and clinical frailty are associated in older patients with severe aortic stenosis selected for TAVR.



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BACKGROUND

- ✓ Atrial Fibrillation (AF) is associated to higher mortality post Transcatheter Aortic Valve Replacement (TAVR)
- ✓ Higher mortality post TAVR in patients with AF has been related to poor cardiovascular health.

AIM

- ✓ To find clinical variables associated to AF in patients with severe aortic stenosis undergoing TAVR.

STUDY DESIGN

- ✓ Monocentric retrospective cohort study
- ✓ ≥ 75 years
- ✓ Severe aortic stenosis
- ✓ Comprehensive cardiac and geriatric assessment (CGA)
- ✓ TAVR between 2012 and 2019

METHODS

Data were collected to allow the calculation of CHADS₂ (used as proxy for cardiovascular comorbidity), MNA-SF and clinical frailty scale (CFS). Survival was studied using Kaplan Meier. Associations between AF pre-existing to TAVR, cardiovascular comorbidity and frailty (CFS ≥ 5) were addressed using uni- and multivariable logistic regression analyses.

Table 1. Variables associated with Atrial Fibrillation (Univariate analysis)

	OR ¹	95% CI ¹	p-value
2-year mortality	1.85	1.13, 3.02	0.014
Age (per year)	0.96	0.92, 1.01	0.2
Weight (per kg)	1.01	1.00, 1.03	0.2
BMI	1.03	0.98, 1.08	0.3
Euroscore 2	1.06	1.01, 1.12	0.015
CHADS ₂	1.46	1.17, 1.82	<0.001
Peak gradient (per mmHg)	0.98	0.97, 0.99	<0.001
Previous aortic valve surgery	2.95	1.15, 8.13	0.024
Pacemaker	2.49	1.44, 4.36	0.001
Pulmonary hypertension	3.49	2.04, 6.08	<0.001
Congestive heart failure	2.17	1.33, 3.54	0.002
Previous stroke	1.92	1.05, 3.56	0.036
CFS	1.34	1.08, 1.67	0.007
Albumin level (per mg/dL)	0.91	0.85, 0.97	0.004
Lawton	0.87	0.77, 0.99	0.033
Katz	1.15	1.03, 1.30	0.011
Dementia	0.42	0.15, 1.01	0.054
MNA-sf	0.93	0.86, 1.02	0.12
Number of drugs	1.14	1.06, 1.24	<0.001

¹OR = Odds Ratio, CI = Confidence Interval, CFS=Clinical Frailty Scale, BMI = Body mass index, MNA-sf = Mini Nutritional Assessment short form

RESULTS

Of the 345 patients (mean age 86±4.4 years, 54% women), 129 presented with AF (37%) during the pre-TAVI assessment. Patients with AF died more frequently within two years after TAVR (OR:1.85, p=0.014; Log-rang p=0.017) (Figure 1.). In univariate analyses, AF showed a strong statistical association (p<0.01) with pulmonary hypertension, pacemaker, congestive heart failure, CHADS₂ score, ≥ 5 daily drugs, frailty, and albuminemia (Table 1). In multivariate analysis, AF was significantly associated (p<0.05) with CHADS₂ score (OR 1.39, per unit) and clinical frailty (OR 1.78) (Table 2).

Figure 1. Kaplan-Meier of 2-year survival of patients with and without AF undergoing TAVR.

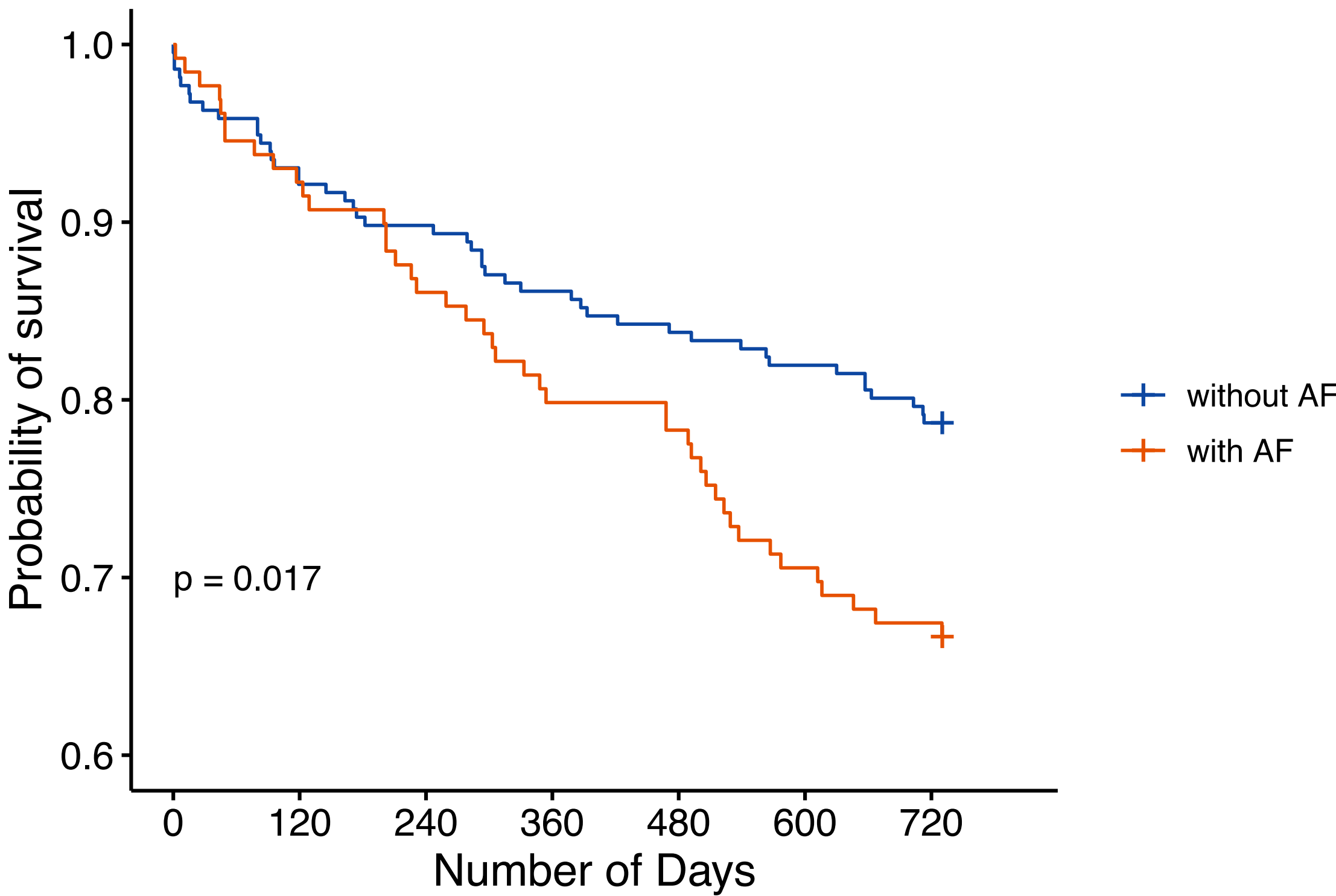


Table 2. Cardiovascular co-morbidities and frailty as strong independent clinical variables associated with AF (multivariate analysis).

	OR ¹	95% CI ¹	p-value
CFS			
1-4	—	—	
≥ 5	1.78	1.06, 3.02	0.041
CHADS ₂	1.39	1.12, 1.75	0.001

¹OR = Odds Ratio, CI = Confidence Interval, CFS=Clinical Frailty Scale

CONCLUSION

AF and clinical frailty are associated in older patients with severe aortic valve stenosis selected for TAVR independently of main cardiovascular co-morbidities. Cumulative effect of cardiovascular morbidity and frailty in patients with AF may participate in explaining the association between AF and increased mortality following TAVR.