Association Between Beta Blocker Use and Incidence of New Atrial Fibrillation and Flutter Post-Septal Myectomy for Obstructive Hypertrophic Cardiomyopathy

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BACKGROUND

- Atrial fibrillation/flutter (AF/AFL) are common arrhythmias in hypertrophic cardiomyopathy (HCM)
- Septal myectomy (SM) is frequently performed in drug-refractory obstructive HCM (oHCM)
- Beta blockers (BB) are frequently continued or prescribed post-SM but their impact on the incidence of new AF/AFL is unknown

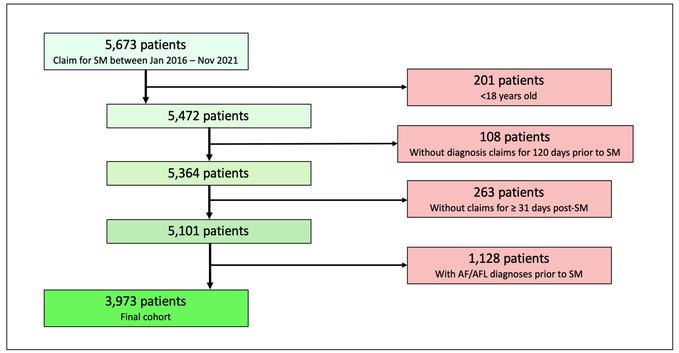
OBJECTIVE

To assess for differences in the incidence of new AF/AFL in oHCM patients who underwent septal myectomy by BB use.

METHODS

- Database: Deidentified healthcare claims from the Symphony Health Claims
- Inclusion: 3,973 patients with oHCM who underwent SM between Jan '15 and Nov '21 with no known history of AF/AFL prior to the procedure
- Primary outcome: new AF/AFL after 30 days post-SM
- Exposure: Time-varying BB use was assessed in consecutive 30-day periods using medication fill claims
  - BB use: Presence of a claim within a 30-day period
  - Discontinuation: Absence of a claim for two or more 30-day periods after BB use
  - No BB use: complete absence of a BB claim during follow-up
- Covariates identified prior to SM include age; sex; insurance (commercial/other), tobacco use; obesity, hypertension, hyperlipidemia, diabetes, peripheral artery disease, peripheral vascular disease, coronary artery disease, sleep apnea, and chronic kidney disease; antihypertensive medications use; statin use; history of stroke/TIA, CABG, MI, and heart valve surgery.
- Extended Cox models were used to evaluate the association of BB use with AF/AFL
  - Described covariates adjusted for *a priori* in the multivariable model

Figure 1. Flow diagram for patient selection



RESULTS

Figure 2. Kaplan-Meier curve for time to new AF/AFL

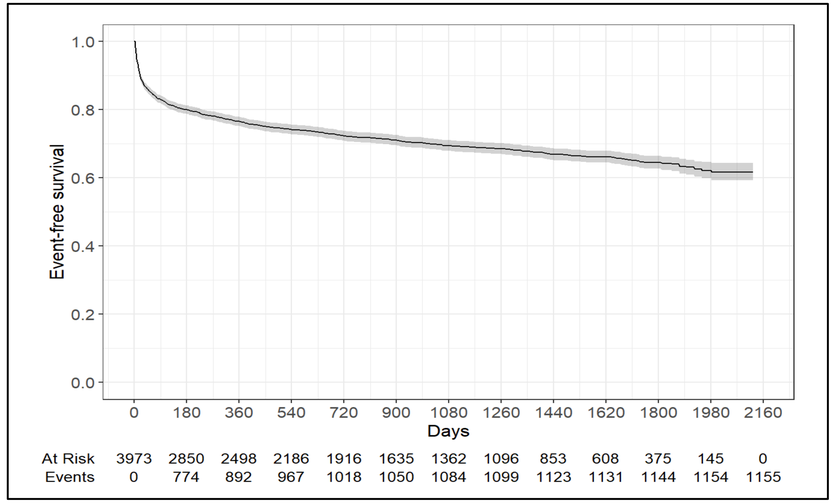


Figure 3. Survival curves for time to new AF/AFL by BB use

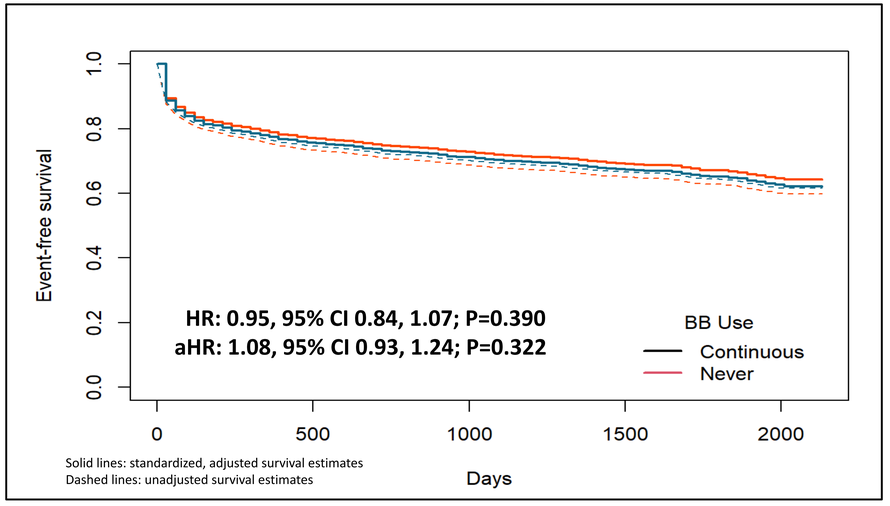


Table 1. Baseline characteristics of patients stratified by development of new AF/AFL*

	New AF/FL During Follow-up		
Characteristic	**No AF/AFL** (n = 2,818)	**New AF/AFL** (n = 1,155)	**p-value**
Age at baseline, years, median (IQR) [min, max]	59 (49, 68) [18, 80]	65 (56, 72) [18, 80]	<0.001
Female	1,528 (54.2)	615 (53.2)	0.575
Hypertension	1,667 (59.2)	790 (68.4)	<0.001
Hyperlipidemia	868 (30.8)	445 (38.5)	<0.001
Diabetes	496 (17.6)	242 (21.0)	0.014
Peripheral artery disease	164 (5.8)	106 (9.2)	<0.001
Stroke/TIA	168 (5.7)	37 (6.1)	0.727
Coronary artery disease	1,105 (39.2)	558 (48.3)	<0.001
Myocardial infarction	283 (10.0)	160 (13.9)	<0.001
Chronic kidney disease	228 (8.1)	127 (11.0)	0.004

*Data are n (%) unless otherwise indicated.

Table 2. Baseline characteristics of patients stratified by BB use*

	Any Beta Blocker Use During Follow-up		
Characteristic	**No Use** (n = 946)	**Any Use** (n = 3,027)	**p-value**
Age at baseline, years, median (IQR) [min, max]	63 (52, 71) [18, 80]	61 (51, 69) [18, 80]	<0.001
Female	504 (53.3)	1,639 (54.1)	0.640
Hypertension	596 (63.0)	1,861 (61.5)	0.400
Hyperlipidemia	313 (33.1)	1,000 (33.0)	0.977
Diabetes	182 (19.2)	556 (18.4)	0.548
Peripheral artery disease	79 (8.4)	191 (6.3)	0.029
Stroke/TIA	73 (7.7)	167 (5.5)	0.013
Coronary artery disease	410 (43.3)	1,253 (41.4)	0.290
Myocardial infarction	109 (11.5)	334 (11.0)	0.677
Chronic kidney disease	104 (11.0)	251 (8.3)	0.011

*Data are n (%) unless otherwise indicated.

Table 3. Results from Cox Proportional Hazards Models*

	Crude Model			Multivariable Model		
Exposure	**HR**	**(95% CI)**	**p-value**	**aHR**	**(95% CI)**	**p-value**
BB Use	0.95	(0.84, 1.07)	0.3904	1.08	(0.93, 1.24)	0.3216
BB Discontinuation	0.83	(0.66, 1.04)	0.0966	0.92	(0.73, 1.17)	0.4720

Abbreviations: BB = beta blocker, HR = Hazards Ratio, CI = Confidence Interval, aHR = adjusted Hazards Ratio.
*Confidence intervals estimated with 1,000 bootstrap samples.

CONCLUSIONS

- In oHCM patients who underwent SM, there is no evidence of an association between BB use and development of new AF/AFL.
- The risks/benefits of routine BB use in post-septal myectomy oHCM patients require further investigation.

DISCLOSURES

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