

THROMBOEMBOLIC COMPLICATIONS FROM ATRIAL TACHYCARDIA IN PEDIATRICS AND YOUNG ADULTS: A MULTICENTER STUDY

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Objective: To report the incidence and diagnosis of thrombotic complications and anticoagulation practices in a multicenter cohort of young atrial tachycardia (AT) patients

Methods: Multicenter, retrospective cohort of patients aged <25 year who presented with atrial flutter (AFL) or atrial fibrillation (AF) between 2000-2020. Episodes occurring within 30 days of an invasive cardiac procedure were excluded.

Results: There were 324 episodes of AT included for analysis among 219 patients with a mean age of 16 years (IQR (13, 19)). 126 patients (58%) had structural heart disease (SHD), 26 (12%) had a primary cardiomyopathy and 7 (3%) a channelopathy. Of the SHD group, 56 episodes were associated with single ventricle physiology. 45 AT episodes occurred in the setting of moderate or severe ventricular dysfunction prior to presentation. 12 (4%) AT episodes in 12 patients were associated with a thrombus (Table 1). 8 of the patients had SHD. 9 (5%) episodes of AFL were associated with clot and 3 (2%) with AF. The CHADSVASc score was 0-1 at presentation for 9 patients. Estimated duration of AT varied from 1 to 30 days based on symptoms at presentation. 4 thrombus patients were taking Aspirin alone and 1 patient was on warfarin though had a documented, subtherapeutic INR within the preceding 30 days of presentation, the remainder were on no anticoagulation. Cardioversion was deferred for these patients. After cardioversion, 134 (38%) patients were discharged on aspirin, 3 on Plavix and 102 (29%) on anticoagulation with warfarin, a DOAC or lovenox. 3 patients had a new thromboembolic event noted at 30 days follow up after successful cardioversion. 2 of these patients were on warfarin, 1 was on Aspirin only at follow up w.

Conclusions: Thromboembolic complications of AT are uncommon in pediatrics and young adults. The majority are associated with SHD, cardiomyopathy and/or ventricular dysfunction. CHADSVASc score had limited utility in this cohort. Use of symptoms as a proxy for duration of tachycardia was not always reliable since several episodes associated with clot had symptoms of AT for less than 48 hours. Thromboembolic complications at follow up after cardioversion are rare and anticoagulation strategies at discharge varied.

Patient	Gender	Structural I	Cardiomyo	Age (years	Type of atr	CHADSVAS	Duration o	Anticoagul
1	Female	AVSD, Sub-	No	14	Atrial flutte	3	N/A	No
2	Female	Coarctatio	No	15	Atrial flutte	2		7 ASA
3	Male	ASD s/p sui	No	17	Atrial flutte	0	N/A	No
4	Female	DILV	No	20	Atrial flutte	1	N/A	ASA
5	Male	Congenital	No	21	AF	0		30 No
6	Male	PA / IVS	No	19	AF	1	N/A	ASA
7	Male	None	No	4	Atrial flutte	0		1 No
8	Male	None	Yes	17	AF	1		2 No
9	Male	Pulmonary	No	15	Atrial flutte	0		7 No
10	Female	None	No	12	Atrial flutte	1	N/A	No
11	Female	Congenital	No	15	Atrial flutte	1	N/A	ASA
12	Female	DCM s/p M	Yes	15	Atrial flutte	2	N/A	Warfarin*

*Documented subtherapeutic INR in the Previous 30 days