

## Oral anticoagulation in adults with congenital heart disease and atrial arrhythmias - insights from the Swiss Congenital Heart Disease Registry (SACHER)

Notz L, Zurek M, Greutmann, M, Bonassin, F, Santos Lopes B, Schwerzmann, M, Wustmann K, Schwitz F, Bouchardy J, Rutz T, Engel R, Attenhofer Jost Ch, Tobler D

**Introduction:** Atrial arrhythmias (AA) are the most frequent cardiac complications in adults with congenital heart disease (ACHD). We report the prevalence of different types of AA, the clinical spectrum and the mode of oral anticoagulation (oAc) derived from the Swiss ACHD Registry (SACHER).

**Methods:** For this study we identified all patients enrolled in SACHER with a history of AA. Patients with AA were divided into 4 groups: 1) atrial fibrillation (Afib), 2) atrial flutter/intra-atrial re-entrant tachycardia (IART), 3) other supraventricular tachycardia (SVT) such as AV-nodal or AV re-entrant tachycardia, 4) combinations of group 1-3. CHA2DS2-VASC score and HAS-BLED score were calculated for patients with a history of AA and the type of anticoagulation was recorded (none, vitamin K antagonists, NOACs, anti-platelet agents). We compared baseline characteristics of patients with or without AA and between patients with different types of AA. The type of anticoagulation was compared within different AA types.

**Results:** Overall, 2602 patients were included. Of those, 13% (n=344) had an AA history. Patients with AA were older ( $43\pm 16y$  vs  $31\pm 13y$ ), more often had prior surgery (85% vs 68%) and more often re-operations (62% vs 29%), p-value <0.001 for all comparisons. Of those with AA, 29% (n=99) were documented with Afib, 25% (n=87) with atrial flutter/IART, 22% (n=76) with other SVT, and 24% (n=82) had a combination of AA. Patients with atrial flutter/IART were more likely to have had prior cardiac surgery (92% vs 79%, p>0.001) and re-operations (74% vs 50%, p<0.001) compared to patients with Afib. Afib patients were older compared to patients with atrial flutter/IART ( $51\pm 16y$  vs  $38\pm 13y$ , p<0.001). Of patients with Afib or atrial flutter/IART (n=241), 137 (57%) had oAc ; of those 41 (31%) were treated with a NOAC. A substantial part of patients with Afib or atrial flutter/IART and a CHA2DS2-VASc score>1 were on no oAc (18% and 50%, Table 1).

**Conclusions:** In ACHD, AA are associated with age and previous cardiac surgery. A substantial proportion of patients with Afib or atrial flutter/IART and a CHA2DS2-VASc Score>1 are not anticoagulated. Whether these patients are at increased risk of thromboembolic complications requires careful further observational studies.

Table 1. Oral anticoagulation in ACHD patients with atrial arrhythmia						
	All AA (n=314)	Afib (n=85)	Aflutter (n=82)	SVT (n=73)	Both Arrhythmia or more (n=74)	p
OAK	144(46%)	57 (67%)	34 (41%)	7 (10%)	46 (63%)	P<0.001
- Marcoumar	101(32%)	36 (42%)	24 (30%)	6 (8%)	35 (47%)	
- NOAK	43 (14%)	21 (25%)	10 (11%)	1 (2%)	11 (15%)	
ASS	41 (13%)	17 (20%)	9 (11%)	5 (7%)	10 (13%)	0.07
HAS-BLED-Score						
- 0	196(63%)	42 (49%)	58 (71%)	54 (74%)	42 (57%)	0.003
- 1	94 (30%)	32 (38%)	18 (22%)	17 (23%)	27 (36%)	0.05
- >1	23 (7%)	11 (13%)	5 (6%)	2 (3%)	5 (8%)	0.09
<b>Treatment with oAc</b>						
CHA2DS2-VASc-Score						
- 0 or female	49 (30%)	13 (48%)	17 (33%)	4 (8%)	15 (44%)	P<0.001
- 1	41 (54%)	13 (65%)	10 (59%)	1 (6%)	17 (77%)	P<0.001
- >1	54 (76%)	31 (82%)	7 (50%)	2 (33%)	14 (78%)	P<0.001