Update Rhythmologie

Neues und Relevantes für die Praxis

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1

Disclosure Statement

- Consultant and / or speaker fees over the last 3 years: Bayer, Berlin-Chemie, Biotronik, Boehringer-Ingelheim, Daiichi Sankyo, Medscape, Menarini, Pfizer, Saja, and WebMD.
- Ownership: Swiss EP, CorXL

2

Rhythmusstörungen

	Bradykard	Tachykard	
"Supra-hissär"	• Sinusbradykardie • AV Block I° • AV Block II° (Typ I)	• Vorhofflimmern • Vorhofflattern • Atriale Tachykardie • AVNRT • AVRT / WPW	**"Supra-ventrikulär"**
"Infra-hissär"	• AV Block II° (Typ II) • AV Block III°	• Ventrikuläre Tachykardie • Kammerflimmern	**Ventrikulär**

3

Rhythmusstörungen

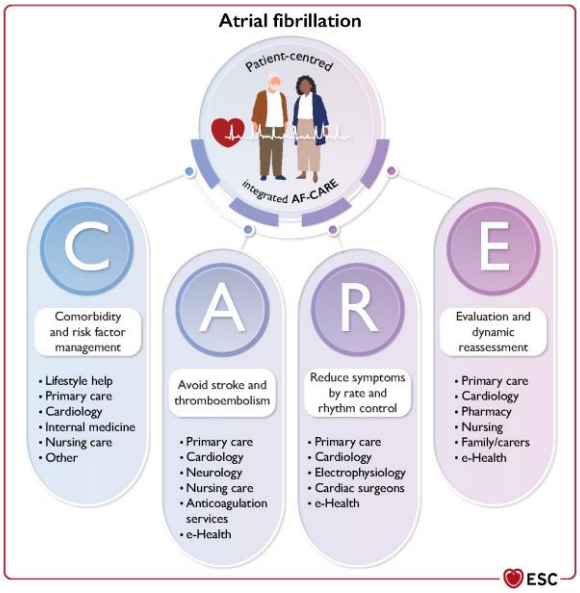
	Bradykard	Tachykard		
"Supra-hissär"	• Sinusbradykardie • AV Block I° • AV Block II° (Typ I)	• Vorhofflimmern • Vorhofflattern • Atriale Tachykardie • AVNRT • AVRT / WPW	90%* >90% >80% >95% >90%	**"Supra-ventrikulär"**
"Infra-hissär"	• AV Block II° (Typ II) • AV Block III°	• Ventrikuläre Tachykardie • Kammerflimmern		**Ventrikulär**

*Substantielle Reduktion des VHF Burdens

4

Figure 2

Multidisciplinary approach to atrial fibrillation management



2024 ESC Guidelines for the management of atrial fibrillation
(European Heart Journal; 2024 – doi: 10.1093/eurheartj/ehae176)

5

Recommendations for Catheter Ablation (2023 AHA ACC HRS AF Guidelines)

COR	LOE	RECOMMENDATIONS
1	A	1. In patients with symptomatic AF in whom antiarrhythmic drugs have been ineffective, contraindicated, not tolerated or not preferred, and continued rhythm control is desired, catheter ablation is useful to improve symptoms.[1-10]
1	A	2. In selected patients (generally younger with few comorbidities) with symptomatic paroxysmal AF in whom rhythm control is desired, catheter ablation is useful as first-line therapy to improve symptoms and reduce progression to persistent AF.[11-16]
1	A	3. In patients with symptomatic or clinically significant AFL, catheter ablation is useful for improving symptoms.[17-19]
2a	B-NR	4. In patients who are undergoing ablation for AF, ablation of additional clinically significant supraventricular arrhythmias can be useful to reduce the likelihood of future arrhythmia.[17,18,20-27]
2a	B-R	5. In patients (other than younger with few comorbidities) with symptomatic paroxysmal or persistent AF who are being managed with a rhythm-control strategy, catheter ablation as first-line therapy can be useful to improve symptoms.[11-13,28]
2b	B-NR	7. In selected* patients with asymptomatic or minimally symptomatic AF catheter ablation may be useful for reducing progression of AF and its associated complications.[31-39]

2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation

6

Impact of ablation benefit

Trial / population	Randomized comparison	Clinically relevant result
ATTEST **Paroxysmal AF**	RF ablation vs AAD	Persistent AF/AT at 3 y 2.4% vs 17.5% HR 0.107 **Progression ↓**
PROGRESSIVE-AF **First-line paroxysmal AF**	Cryoballoon vs AAD	Persistent AF at 3 y 1.9% vs 7.4% HR 0.25 **Progression ↓**
CASTLE-AF **AF + HFrEF + ICD/CRT-D**	Ablation vs medical therapy	Death or HF admission 28.5% vs 44.6% HR 0.62 **Tod / Herzinsuffizienz ↓**

Schlaganfall ↓ ??

ATTEST • PROGRESSIVE-AF • CASTLE-AF • CABANA

7

Mechanismen der Schlaganfallreduktion durch VHF-Ablation

1. Reduktion der VHF-Last

- Sinusrhythmus-Erhalt vermindert thrombogene Stase im linken Vorhof (LAA)
- Verringerung asymptomatischer (stiller) VHF-Episoden

2. Reverses atrial Remodeling

- Verbesserung der linksatrialen Funktion und Morphologie
- Reduktion des LA-Volumens und der atrialen Fibrose (Atrial Cardiomyopathy)

3. Hämodynamische Verbesserungen

- Verbesserung der linksventrikulären Funktion (EF-Anstieg insb. bei Tachymyopathie)
- Senkung von NT-proBNP und entzündlichen Markern

Aber:

- Non-kardioembole Schlaganfälle profitieren nicht von der VHF-Ablation
- Persistierende atriale Kardiomyopathie unabhängig vom Rhythmus bleibt ein Risikofaktor

Stroke 2020; JACC EP 2021

8

JAMA | Original Investigation

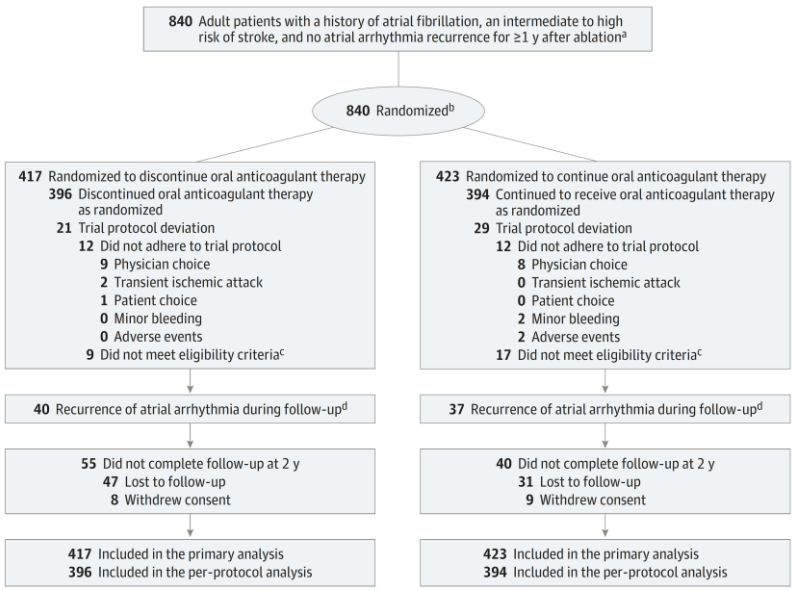
Long-Term Anticoagulation Discontinuation After Catheter Ablation for Atrial Fibrillation

The ALONE-AF Randomized Clinical Trial

Daehoon Kim, MD; Jaemin Shim, MD; Eue-Keun Choi, MD; Il-Young Oh, MD; Jun Kim, MD; Young Soo Lee, MD; Junbeom Park, MD; Jum-Suk Ko, MD; Kyoung-Min Park, MD; Jung-Hoon Sung, MD; Hyung Wook Park, MD; Hyung-Seob Park, MD; Jong-Youn Kim, MD; Ki-Woon Kang, MD; Dongmin Kim, MD; Jin-Kyu Park, MD; Dae-Hyeok Kim, MD; Jin-Bae Kim, MD; Hee Tae Yu, MD; Tae-Hoon Kim, MD; Jae-Sun Uhm, MD; Hui-Nam Pak, MD; Boyoung Joung, MD; for the ALONE-AF Investigators

9

ALONE-AF – Study population



Kim et al., JAMA 20025

10

ALONE-AF – baseline characteristics

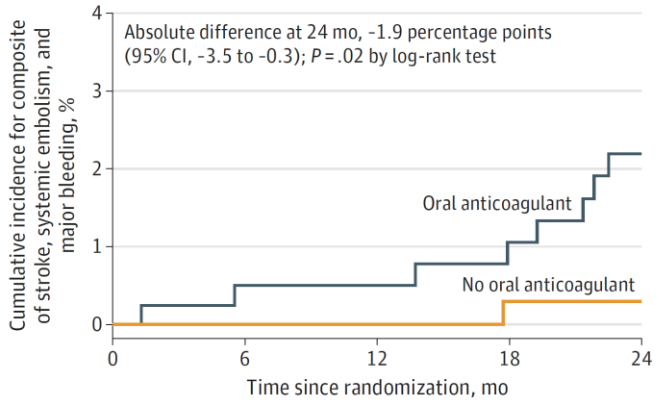
	Oral anticoagulant therapy status	
	Discontinued (n = 417)	Continued (n = 423)
Age, mean (SD), y	63 (8)	65 (8)
Sex, No. (%)[a]		
Male	321 (77.0)	310 (73.3)
Female	96 (23.0)	113 (26.7)
Type of atrial fibrillation, No. (%)[a]		
Paroxysmal	276 (66.2)	292 (69.0)
Persistent	141 (33.8)	131 (31.0)
Time from catheter ablation for atrial fibrillation to randomization, median (IQR), y	2.5 (1.4-5.2)	2.3 (1.2-4.5)
Medical history, No. (%)[a]		
Hypertension	293 (70.3)	291 (68.8)
Dyslipidemia	102 (24.5)	125 (29.6)
Diabetes	68 (16.3)	90 (21.3)
Heart failure	66 (15.8)	62 (14.7)
Stroke or transient ischemic attack	23 (5.5)	24 (5.7)
Chronic kidney disease	10 (2.4)	3 (0.7)

Kim et al., JAMA 20025

11

ALONE-AF (1° and 2° endpoints)

A Cumulative incidence for composite of stroke, systemic embolism, and major bleeding (primary outcome)



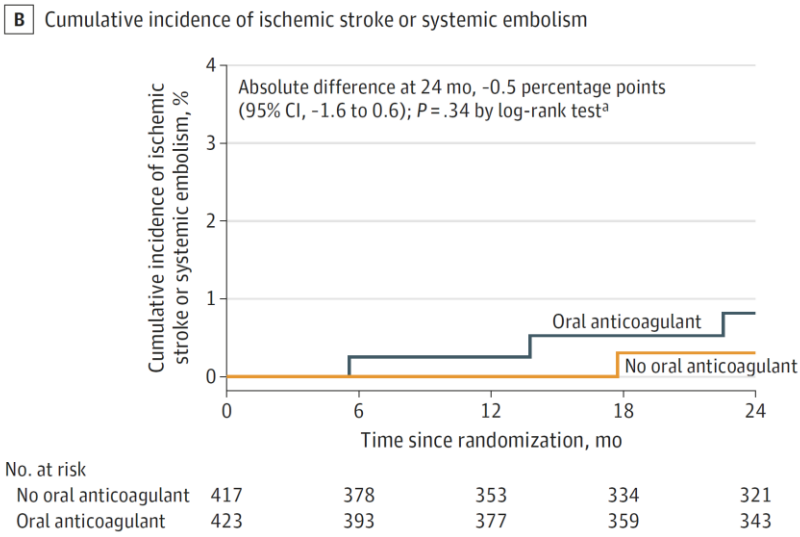
No. at risk

No oral anticoagulant	417	378	353	334	321
Oral anticoagulant	423	392	376	357	338

Kim et al., JAMA 20025

12

ALONE-AF (1° and 2° endpoints)



Kim et al., JAMA 20025

13

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Antithrombotic Therapy after Successful Catheter Ablation for Atrial Fibrillation

Atul Verma, M.D.,[1] David H. Birnie, M.D.,[2] Chenyang Jiang, M.D., Ph.D.,[3] Hein Heidbüchel, M.D.,[4] Gerhard Hindricks, M.D.,[5] Paulus Kirchhof, M.D., D.Sc.,[6,7] Jeff S. Healey, M.D.,[8] Yunhe Wang, M.D.,[3] Nikolaos Dagres, M.D.,[5] Marc W. Deyell, M.D.,[9] Prashanthan Sanders, M.B., B.S., Ph.D.,[10] Rajeev K. Pathak, M.B., B.S., Ph.D.,[11] Pieter Koopman, M.D.,[12] Dieter Nuyens, M.D.,[13] Paul Novak, M.D.,[14] Guy Amit, M.D.,[8] Charles Dussault, M.D.,[15] Bhavanesh Makanjee, M.D.,[16] F. Russell Quinn, M.D.,[17] Umjeet Jolly, M.D.,[18] Leon Iden, M.D.,[19] Malte Kuniss, M.D.,[20] Mukul Sharma, M.D.,[8] Andrew Ha, M.D.,[21] Vidal Essebag, M.D., Ph.D.,[1] Jean Champagne, M.D.,[22] Michael D. Hill, M.D.,[23] Eric E. Smith, M.D., M.P.H.,[23] and George A. Wells, Ph.D.,[2] for the OCEAN Investigators*

14

OCEAN Trial – Baseline Characteristics

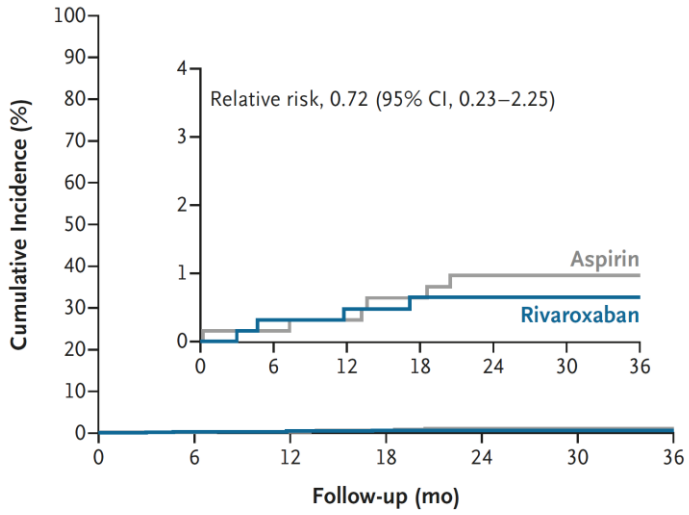
Table 1. Demographic and Clinical Characteristics of the Patients at Baseline.*

Characteristic	Rivaroxaban (N = 641)	Aspirin (N = 643)
Demographics		
Age — yr	66.3±7.1	66.3±7.6
Male sex — no. (%)	458 (71.5)	459 (71.4)
Atrial fibrillation history		
Median time since first atrial fibrillation ablation (IQR) — mo	19.3 (13.9–35.7)	19.3 (14.2–31.3)
Median time since most recent atrial fibrillation ablation (IQR) — mo	16.4 (13.4–25.2)	16.5 (13.6–25.2)
Total no. of ablations for atrial fibrillation or atrial tachyarrhythmia — no. (%)		
1	484 (75.5)	504 (78.4)
2	133 (20.7)	105 (16.3)
≥3	24 (3.7)	34 (5.3)
Type of atrial fibrillation — no. (%)		
Paroxysmal	431 (67.2)	421 (65.5)
Persistent	204 (31.8)	212 (33.0)
Long-standing persistent	6 (0.9)	10 (1.6)
Total HAS-BLED score†	1.4±0.9	1.3±0.8

Verma et al., NEJM 2025

15

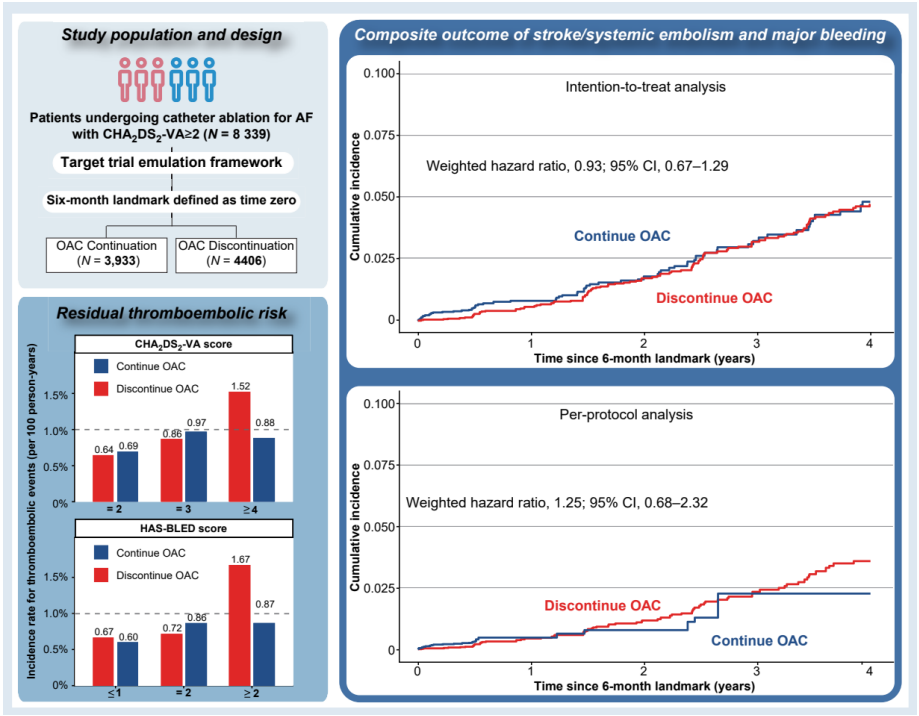
OCEAN Trial – Stroke & Systemic embolism over 3 years



No. at Risk							
Aspirin	643	629	615	605	592	580	346
Rivaroxaban	641	622	610	596	588	571	334

Verma et al., NEJM 2025

16



Peng et al., Europace 2026

17

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ACC SCIENTIFIC STATEMENT

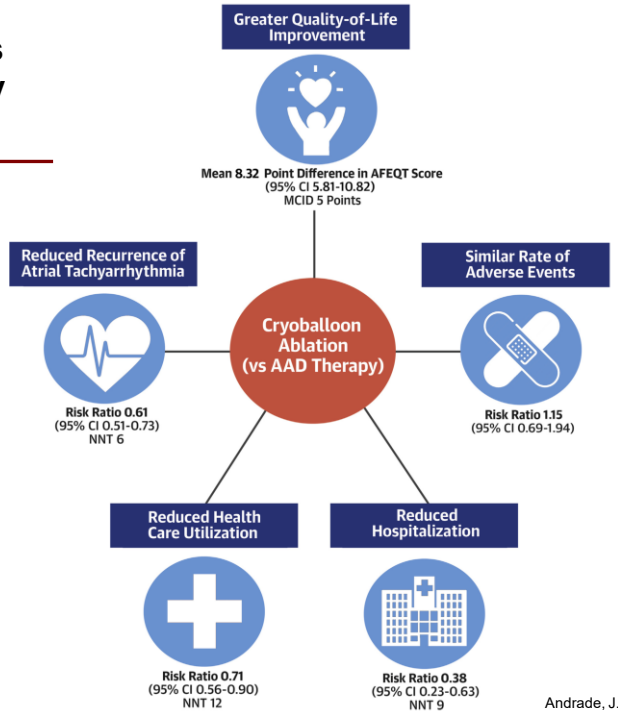
Direct Oral Anticoagulants in Primary and Secondary Prevention of Thrombotic Events: 2026 ACC Scientific Statement

A Report of the American College of Cardiology

- For individuals with low to intermediate risk for stroke (CHA_2DS_2-VASc score ≤3), who maintain sinus rhythm after catheter ablation of AF, discontinuation of OAC 1-year post-AF ablation is a reasonable approach in the absence of other high-risk conditions warranting continued OAC use.

18

Cryo ablation as first-line therapy in AF



Andrade, J.G. et al. J Am Coll Cardiol. 2021;78(9):914–930.

19

VHF Ablationen (Okt 2021 – Sep 2026; n = 1797)

Perikarderguss	5 (0.28%)
Leistenkomplikation	13 (0.72%)
Dekompensation	2 (0.11%)
Phrenikusparese (transient)	15 (0.83%)
Schlaganfall	0 (0%)

20

Take Home Messages

- AVNRT, AVRT / WPW, Vorhofflattern, (atriale Tachykardie): Heilung durch Ablation möglich
- Vorhofflimmern Ablation: Therapie der Wahl zur Rhythmuskontrolle
  - Je eher, desto besser
  - Hinweise für prognostischen Benefit
- Patienten können 1 Jahr nach erfolgreicher VHF Ablation (klinisch / Holter) und einem CHADS-VA Score von 2-3 ggf. die OAK absetzen (informed consent!)
- Cave: Zeitkomponente / Dynamik der Risikofaktoren

21

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22