



Catheter Ablation of Atrial Fibrillation Reduces the Risks of Dementia and Hospitalization During a Very Long-term Follow up



Yu-Cheng Hsieh, MD, PhD 謝育整 醫師

Taichung Veterans General Hospital

Taichung, Taiwan

台灣 台中榮民總醫院

Korean Heart Rhythm Society COI Disclosure

Yu-Cheng Hsieh, MD, PhD

**The authors have no financial conflicts of interest
to disclose concerning the presentation**



Dementia Definition

- **Multiple Cognitive Deficits:**
 - Memory dysfunction
 - especially new learning, a prominent early symptom
 - At least one additional cognitive deficit
 - aphasia, apraxia, agnosia, or executive dysfunction
- **Cognitive Disturbances:**
 - Sufficiently severe to cause impairment of occupational or social functioning and
 - Must represent a decline from a previous level of functioning

失語症 肌肉運動失調症 失認症

DEMENTIA

Umbrella term for loss of memory and other thinking abilities **severe enough to interfere with daily life.**

Alzheimer's:
60-80%

**Lewy Body
Dementia:**
5-10%

**Vascular
Dementia:**
5-10%

**Frontotemporal
Dementia:**
5-10%

**Others:
Parkinson's,
Huntington's**

Mixed dementia:
Dementia from more than one cause

AF and Cognitive Dysfunction

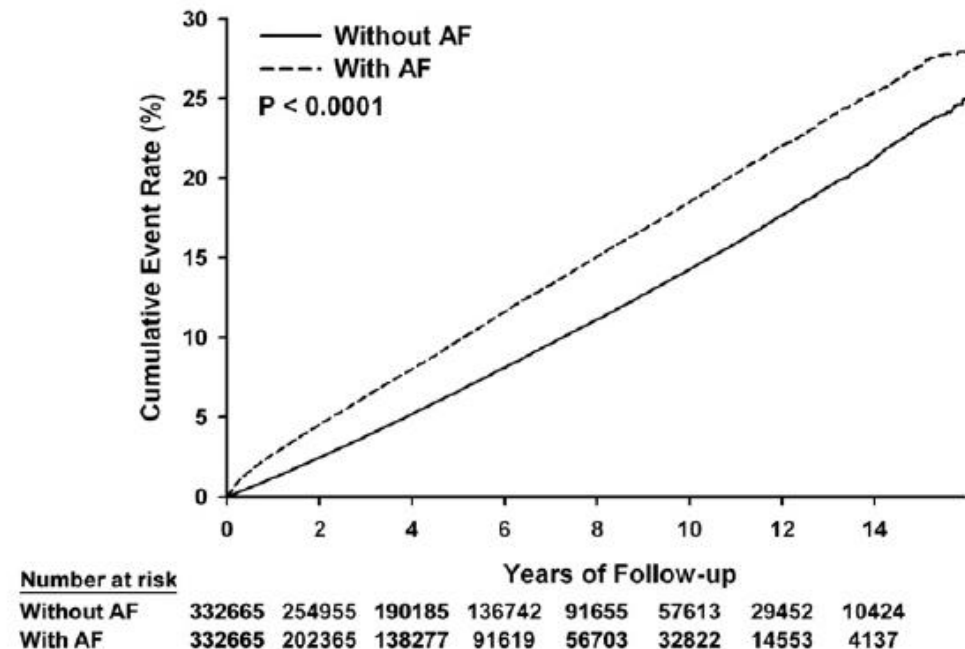
Risk and prediction of dementia in patients with atrial fibrillation — A nationwide population-based cohort study



Jo-Nan Liao ^{a,b,1}, Tze-Fan Chao ^{a,b,1}, Chia-Jen Liu ^{c,d}, Kang-Ling Wang ^{a,b}, Su-Jung Chen ^{d,e}, Ta-Chuan Tuan ^{a,b},
Yenn-Jiang Lin ^{a,b}, Shih-Lin Chang ^{a,b}, Li-Wei Lo ^{a,b}, Yu-Feng Hu ^{a,b}, Fa-Po Chung ^{a,b}, Hsuan-Ming Tsao ^{b,f,*},
Tzeng-Ji Chen ^g, Gregory Y.H. Lip ^{h,2}, Shih-Ann Chen ^{a,b,**,2}

**A total of 332,665 AF subjects without dementia were identified in the study.
For each study patient, one age- and sex-matched subject without AF and dementia was
selected as the control group.**

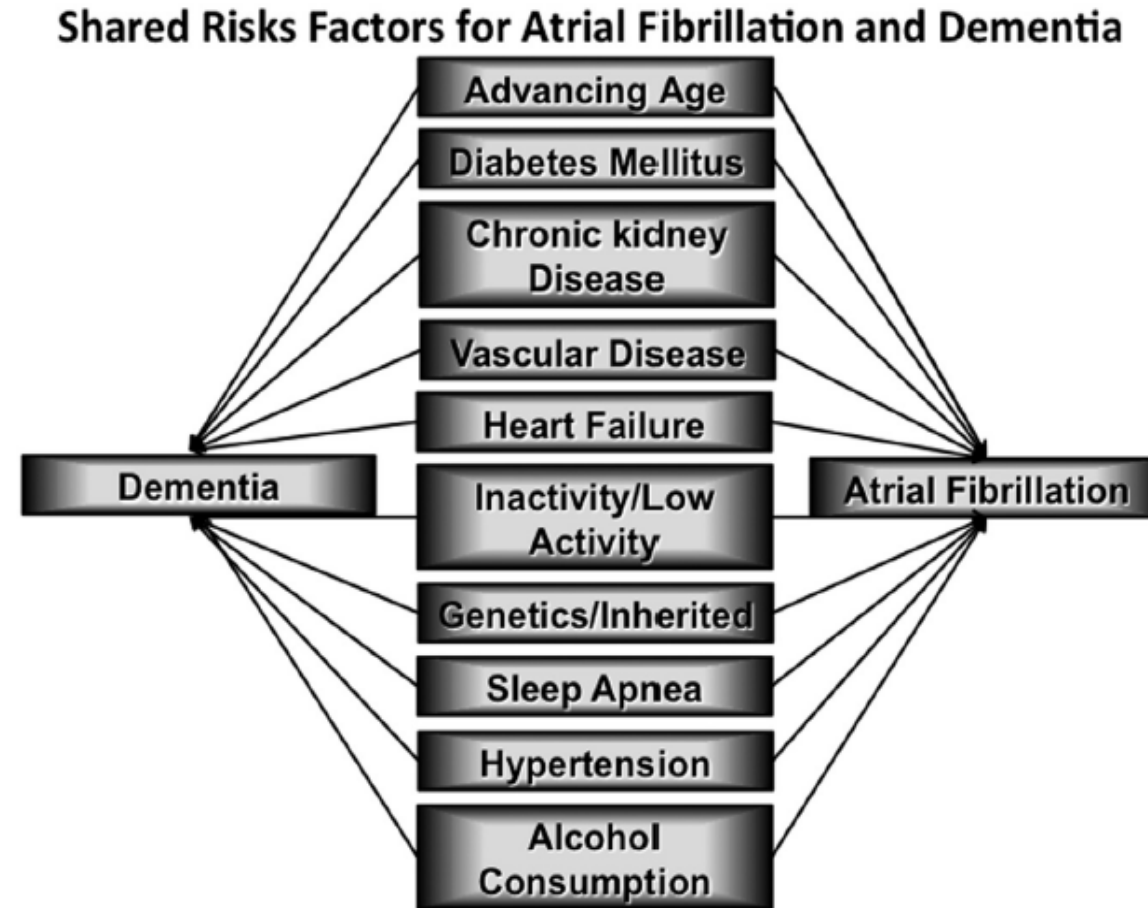
Groups	Number of events	Number of patients	Person-years	Incidence*
With AF	29,012	332,665	1,368,674	2.12
Without AF	27,889	332,665	1,864,040	1.50
Total	56,901	665,330	3,232,714	1.76



Atrial fibrillation and dementia

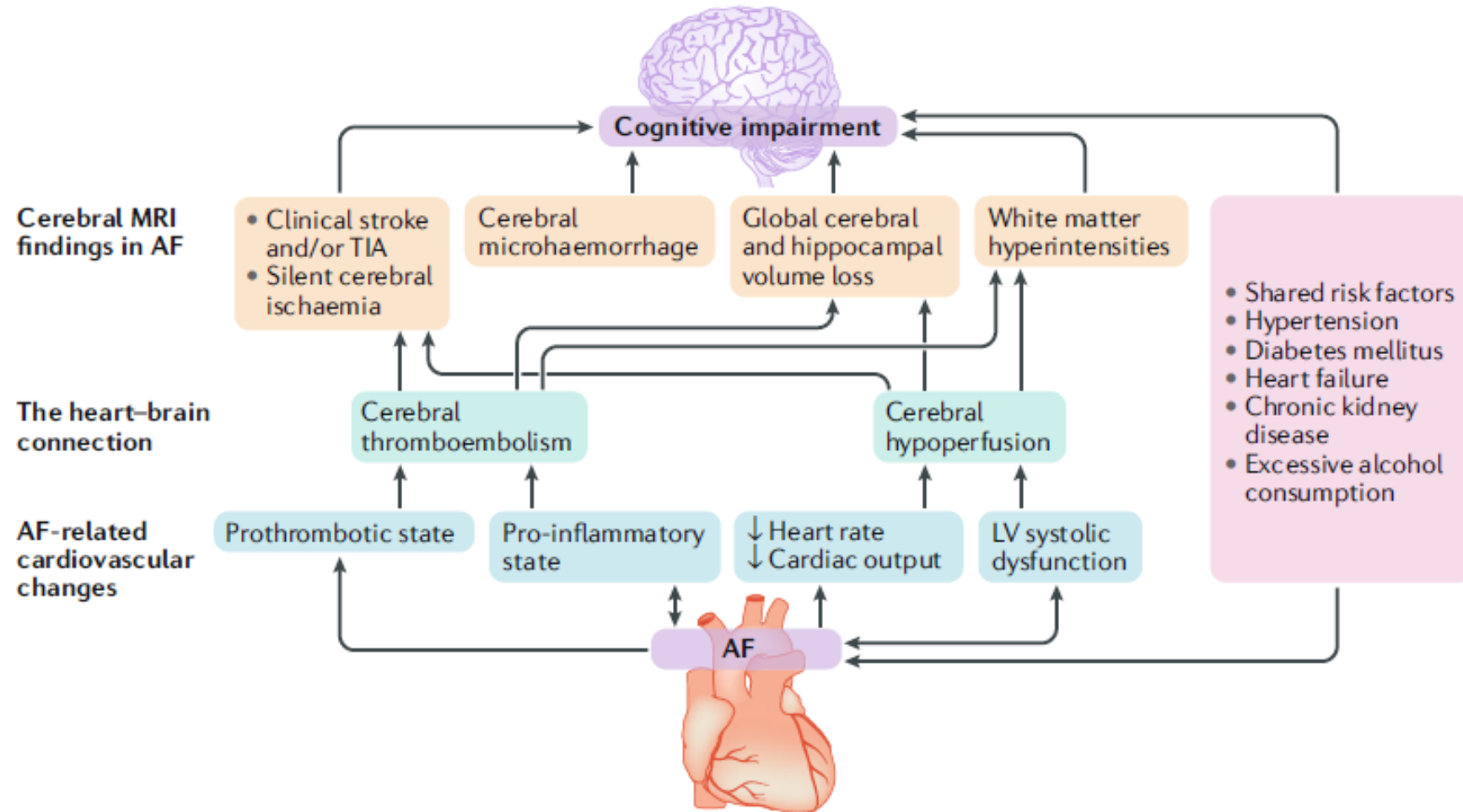
Victoria Jacobs, Michael J. Cutler, John D. Day, and T. Jared Bunch*

Intermountain Heart Institute, Intermountain Medical Center, Murray, UT



Cognitive dysfunction in atrial fibrillation

Malini Madhavan¹*, Jonathan Graff-Radford², Jonathan P. Piccini³ and Bernard J. Gersh¹

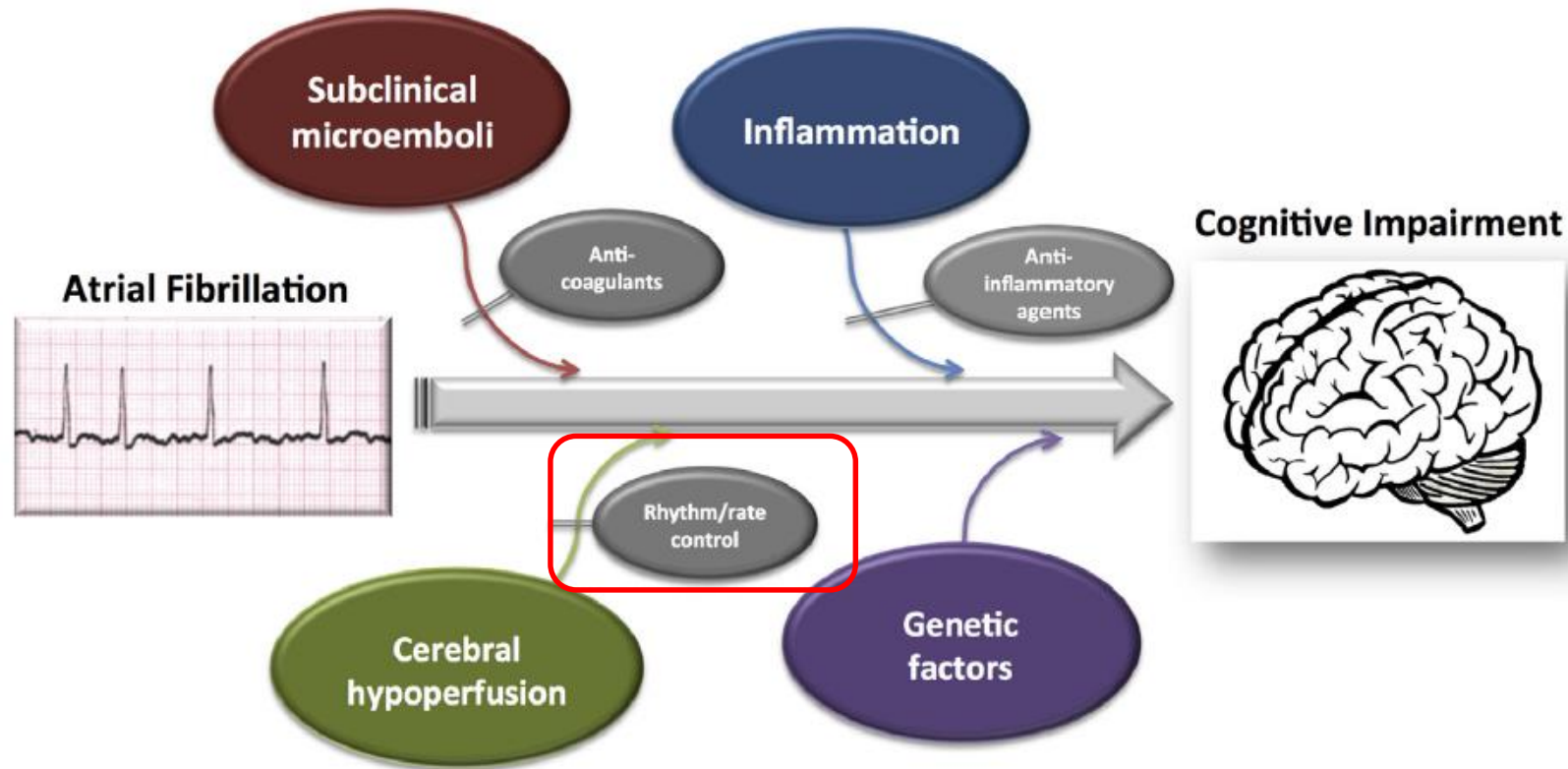


Review

Mechanisms, Clinical Significance, and Prevention of Cognitive Impairment in Patients With Atrial Fibrillation

Lena Rivard, MD, MSc, and Paul Khairy, MD, PhD

Department of Medicine, Montreal Heart Institute, Université de Montréal, Montréal, Québec, Canada



Rhythm Control of AF on Dementia

Pharmacological therapy

EAST AFNET-4 trial

The image shows the cover of The New England Journal of Medicine. The title is in red serif font. Below the title, it says 'ESTABLISHED IN 1812', 'OCTOBER 1, 2020', and 'VOL. 383 NO. 14'.

The NEW ENGLAND
JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

OCTOBER 1, 2020

VOL. 383 NO. 14

Early Rhythm-Control Therapy in Patients with Atrial Fibrillation

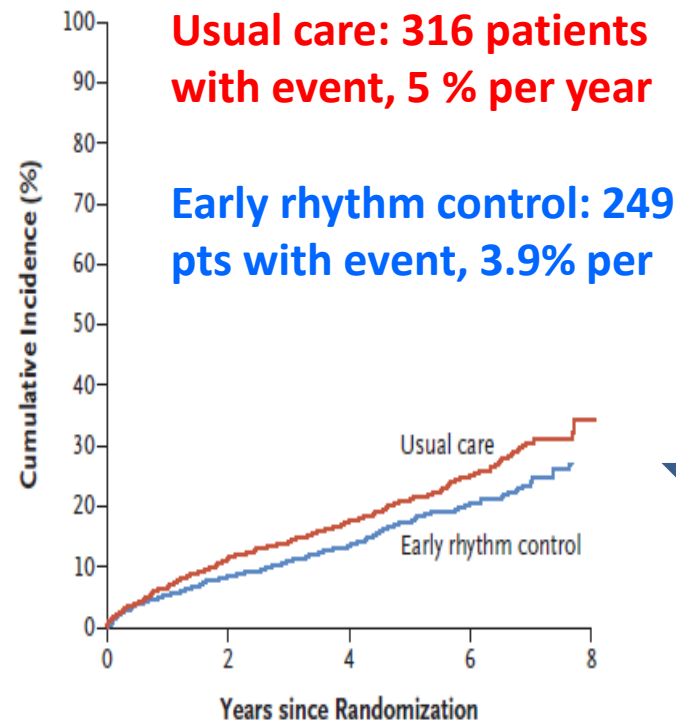
P. Kirchhof, A.J. Camm, A. Goette, A. Brandes, L. Eckardt, A. Elvan, T. Fetsch, I.C. van Gelder, D. Haase, L.M. Haegeli, F. Hamann, H. Heidbüchel, G. Hindricks, J. Kautzner, K.-H. Kuck, L. Mont, G.A. Ng, J. Rekosz, N. Schoen, U. Schotten, A. Suling, J. Taggeselle, S. Themistoclakis, E. Vettorazzi, P. Vardas, K. Wegscheider, S. Willems, H.J.G.M. Crijns, and G. Breithardt, for the EAST-AFNET 4 Trial Investigators*

We randomly assigned patients who had early AF (diagnosed ≤ 1 year before enrollment) and CV conditions to receive either **early rhythm control or **usual care**.**

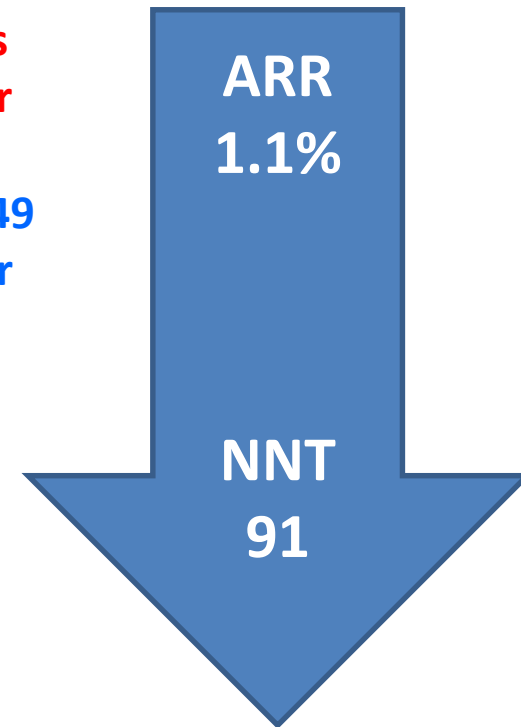
Result

- The study was stopped early for efficacy at the third interim analysis after a median 5.1 years follow up.

Death from CV causes, stroke, or hospitalization with worsening of HF or ACS



No. at Risk					
Usual care	1394	1169	888	405	34
Early rhythm control	1395	1193	913	404	26



Primary outcomes

Outcome	Early Rhythm Control	Usual Care	Treatment Effect
First primary outcome — events/person-yr (incidence/100 person-yr)	249/6399 (3.9)	316/6332 (5.0)	0.79 (0.66 to 0.94)†
Components of first primary outcome — events/person-yr (incidence/100 person-yr)			
Death from cardiovascular causes	67/6915 (1.0)	94/6988 (1.3)	0.72 (0.52 to 0.98)‡
Stroke	40/6813 (0.6)	62/6856 (0.9)	0.65 (0.44 to 0.97)‡
Hospitalization with worsening of heart failure	139/6620 (2.1)	169/6558 (2.6)	0.81 (0.65 to 1.02)‡
Hospitalization with acute coronary syndrome	53/6762 (0.8)	65/6816 (1.0)	0.83 (0.58 to 1.19)‡

Conclusion

- Early rhythm-control therapy was associated with a lower risk of **adverse cardiovascular outcomes** than usual care among patients with early AF and cardiovascular conditions.

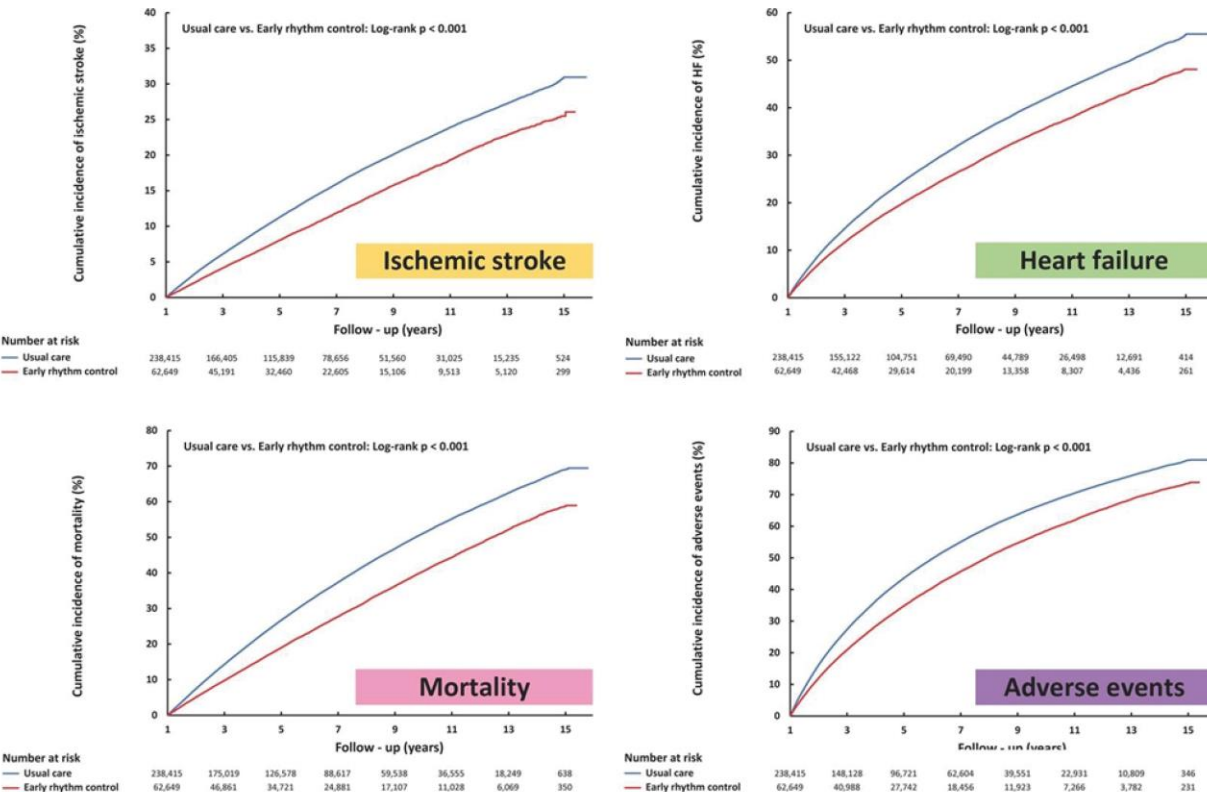
Early rhythm-control therapy in patients with atrial fibrillation: a nationwide cohort study

T. Chao¹, Y.H. Chan², G.Y.H. Lip³, S.A. Chen⁴

¹ Taipei Veterans General Hospital, Taipei, Taiwan; ² Chang Gung Memorial Hospital, Taoyuan, Taiwan; ³ University of Liverpool, Liverpool, United Kingdom; ⁴ Taichung Veterans General Hospital, Taichung, Taiwan

Funding Acknowledgement: Type of funding sources: None.

- Among these patients, 62,649 AF patients receiving antiarrhythmic drugs or catheter ablation **within 1 year** after AF being diagnosed (similar to the timing definition of the EAST-AFNET 4 trial) were categorized as the early rhythm control group, and the remaining 238,415 patients were defined as usual care group.



- Conclusions:** In this nationwide cohort study, early rhythm control therapy was associated with a lower risk of adverse events than usual care among patients with early AF.
- Outcomes were even better with earlier (<3 months) intervention.**

*ESC Congress 2021 – The Digital Experience
27–30 August 2021*

Association between early rhythm control and the risk of dementia in patients with atrial fibrillation and prior history of stroke: a nationwide population-based study

S.R. Lee¹, E.K. Choi¹, S.W. Lee², K.D. Han³, S. Oh¹, G.Y.H. Lip⁴

¹Seoul National University Hospital, Department of Internal Medicine, Division of Cardiology, Seoul, Korea (Republic of); ²The Catholic University of Korea, Seoul, Korea (Republic of); ³Soongsil University, Seoul, Korea (Republic of); ⁴University of Liverpool, Liverpool, United Kingdom

Funding Acknowledgement: Type of funding sources: None.

- Although early rhythm control (ERC) in patients with AF reduces the risk of stroke, there is a lack of evidence on whether ERC reduces the risk of developing dementia in patients with new-onset AF and **a history of prior stroke**.
- Patients who received rhythm control therapy, including AAD, direct current cardioversion, or AF catheter ablation, **within 1 year** after incident AF were defined as the ERC group, otherwise as the usual care group.
- The incidence of all dementia, Alzheimer dementia, and vascular dementia were evaluated during follow-up.

ESC Congress 2022 – Barcelona, Spain
26–29 August 2022

- A total of 41,370 patients were included (mean age, 70 ± 11 years; mean CHA2DS2-VASc score 5.3 ± 1.6 ; 43% female); 10,213 were in the early rhythm control group and 31,157 in the usual care group.

**2.7 years
follow up**

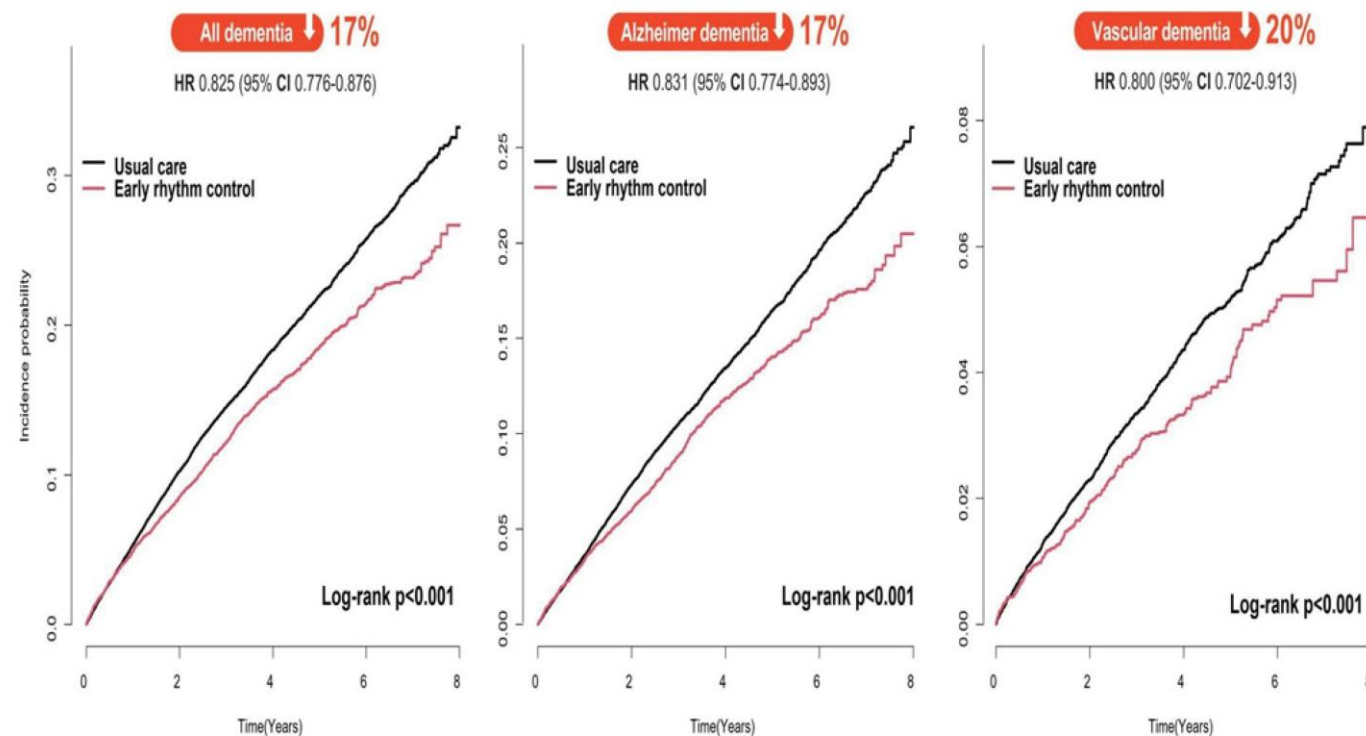


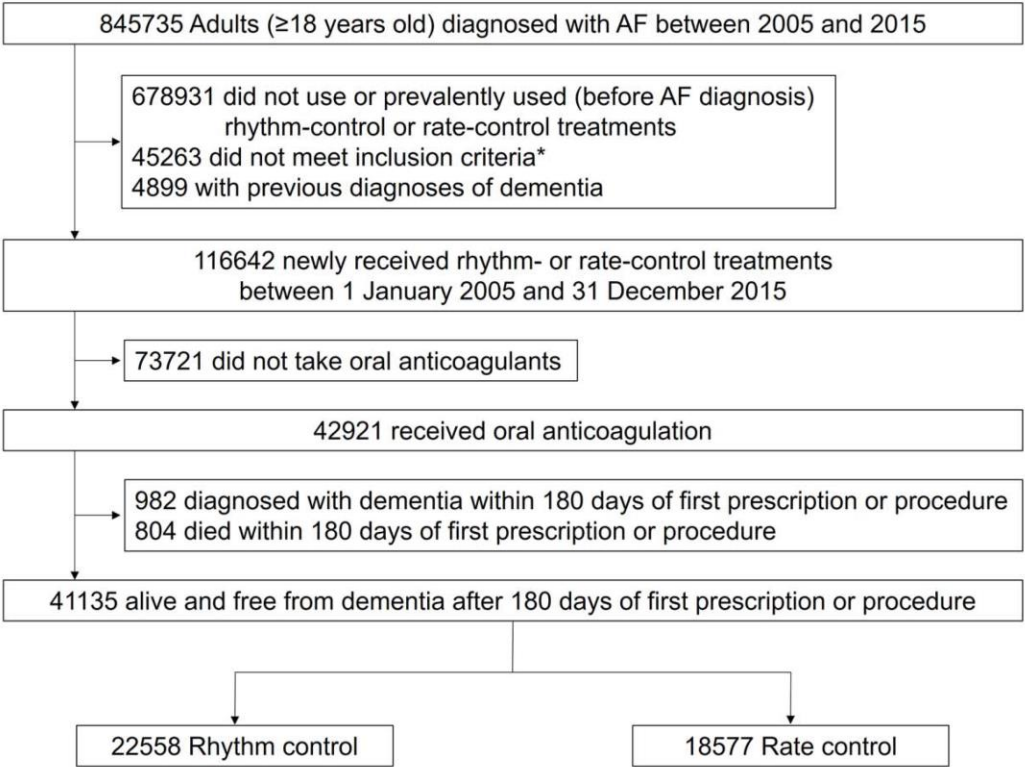
Figure 1. Weighted Kaplan-Meier curves

- ERC within 1 year after AF diagnosis might be beneficial to prevent dementia in patients with incident AF and a history of stroke.
- To prevent progression of further cognitive dysfunction, early rhythm control should be considered in these patients.

Association of rhythm control with incident dementia among patients with atrial fibrillation: a nationwide population-based cohort study

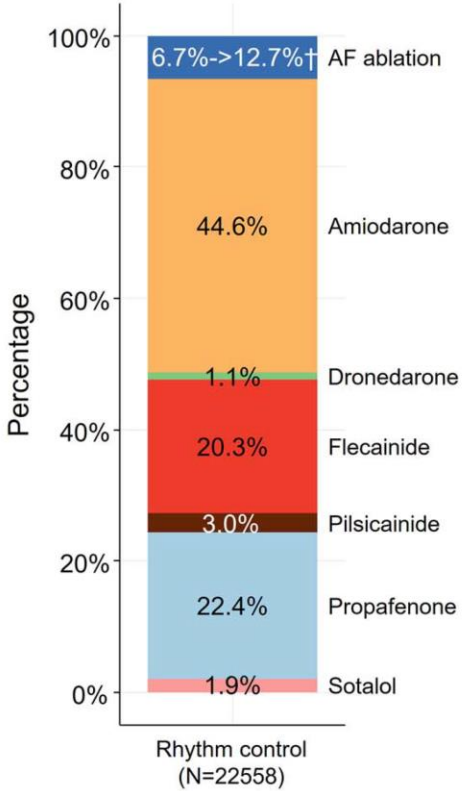
DAEHOON KIM^{1,†}, PIL-SUNG YANG^{2,†}, SENG CHAN YOU³, JUNG-HOON SUNG², EUNSUN JANG¹, HEE TAE YU¹, TAE-HOON KIM¹, HUI-NAM PAK¹, MOON-HYOUNG LEE¹, GREGORY Y.H. LIP^{4,‡}, BOYOUNG JOUNG^{1,‡}

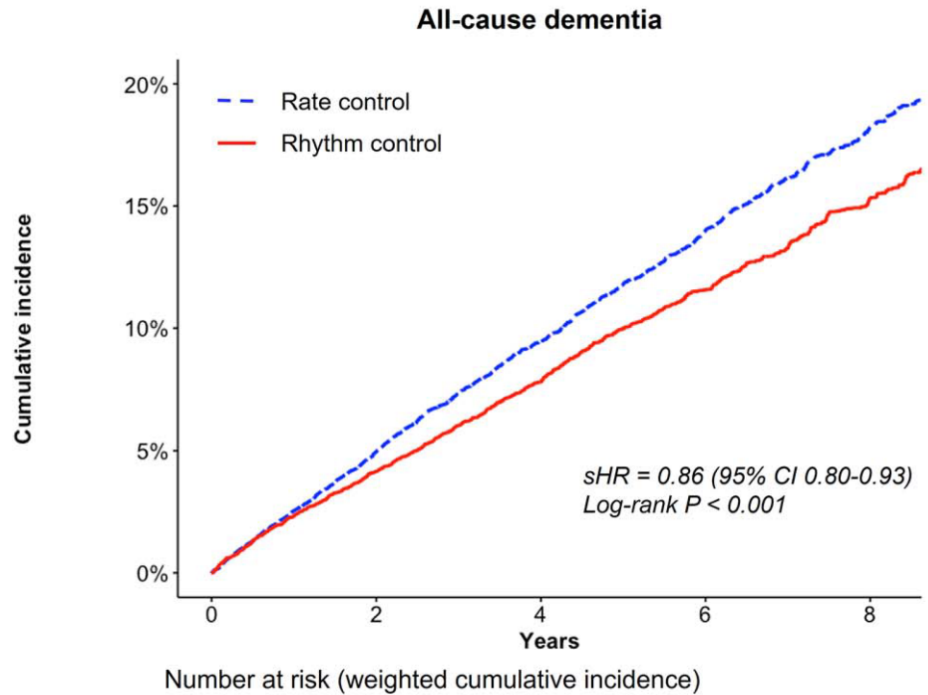
A



B

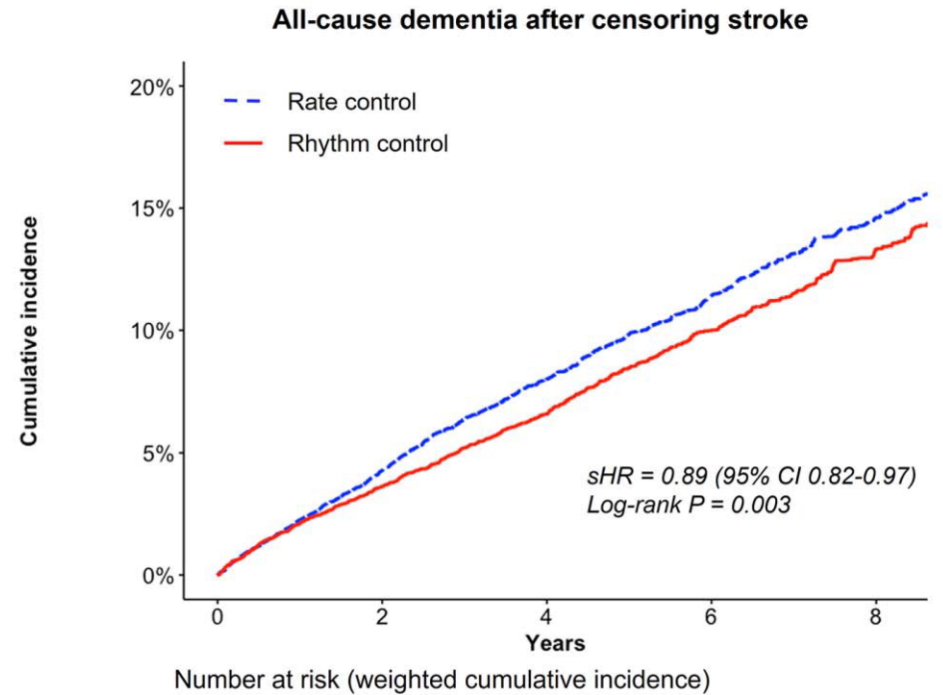
Initial Choice of Rhythm Control



A

Rate control 18577 (0%) 13140 (5.0%) 8831 (9.5%) 5799 (14.0%) 3531 (18.2%)

Rhythm control 22558 (0%) 15436 (4.2%) 9804 (7.8%) 5903 (11.6%) 3365 (15.3%)

B

Rate control 18577 (0%) 12489 (4.3%) 8136 (8.0%) 5211 (11.4%) 3109 (14.6%)

Rhythm control 22558 (0%) 14940 (3.6%) 9291 (6.6%) 5470 (10.0%) 3067 (13.3%)

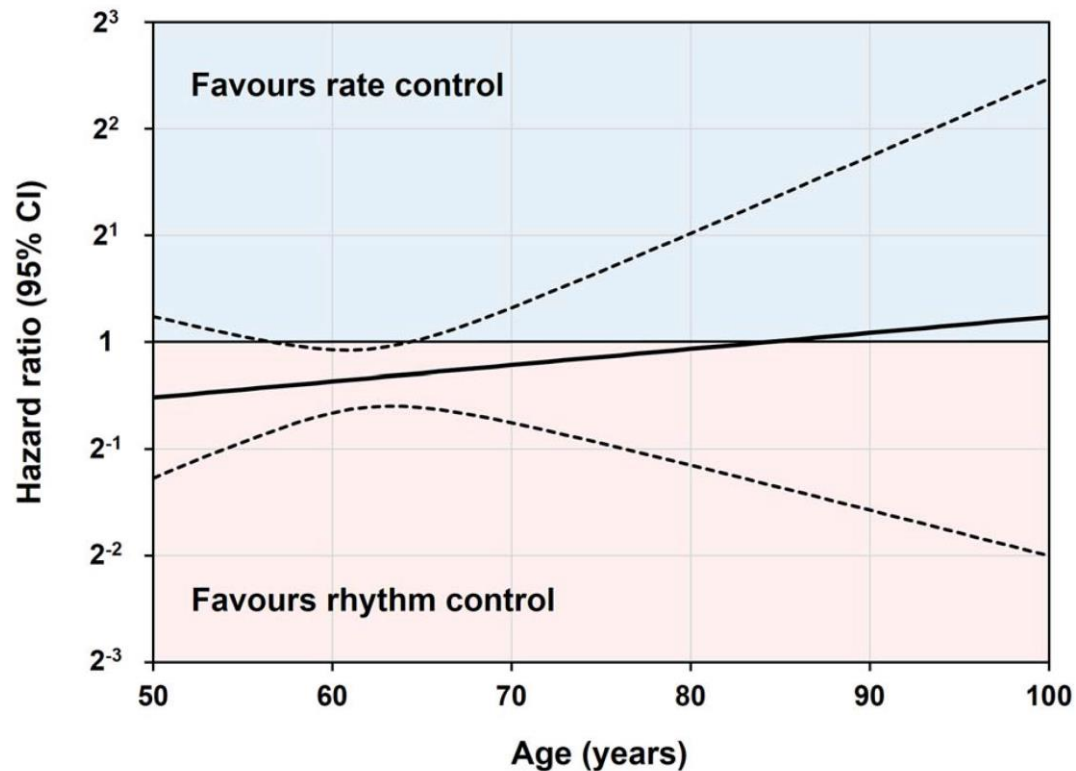
Figure 2. Weighted cumulative incidence curves for all-cause dementia in (A) overall and (B) after censoring stroke. CI, confidence interval; sHR, subdistribution hazard ratio.

Table 2. Dementia outcomes in weighted patients undergoing rhythm or rate control

Outcome	Number of events	Person-years	Event rate*	Number of events	Person-years	Event rate*	Absolute rate difference per 1,000 person-years* (95% CI)	Subdistribution hazard ratio (95% CI)	<i>P</i> value
Rhythm versus Rate control	Rhythm control (<i>N</i> = 22,558)			Rate control (<i>N</i> = 18,577)					
Including stroke									
All-cause dementia	1718	93,631	21.2	2,321	83,397	25.2	−4.0 (−6.5 to −1.5)	0.86 (0.80–0.93)	<0.001
Alzheimer's disease	1,167	94,949	14.2	1,580	85,301	16.7	−2.6 (−4.6 to −0.5)	0.86 (0.79–0.95)	0.002
Vascular dementia	392	96,584	4.7	516	87,616	5.5	−0.8 (−1.9 to 0.4)	0.88 (0.75–1.04)	0.126
Censoring for stroke									
All-cause dementia	1,400	89,706	18.1	1788	78,055	20.6	−2.5 (−4.9 to −1.7)	0.89 (0.82–0.97)	0.007
Alzheimer's disease	998	90,499	12.8	1,297	79,101	14.7	−2.0 (−3.9 to 0.0)	0.88 (0.79–0.97)	0.013
Vascular dementia	263	91,947	3.3	322	80,981	3.7	−0.4 (−1.4 to 0.6)	0.91 (0.74–1.11)	0.340
Ablation versus Rate control	Ablation (<i>N</i> = 1,508)			Rate control (<i>N</i> = 18,577)					
Including stroke									
All-cause dementia	49	7,672	9.1	2,321	83,397	17.9	−7.8 (−14.6 to −1.0)	0.59 (0.35–1.01)	0.053
Alzheimer's disease	36	7,721	7.6	1,580	85,301	10.6	−3.1 (−8.7 to 2.5)	0.78 (0.42–1.45)	0.437
Vascular dementia	13	7,756	1.5	516	87,616	4.2	−2.7 (−5.9 to 0.4)	0.39 (0.11–1.33)	0.133
AAD versus Rate control	AAD (<i>N</i> = 21,050)			Rate control (<i>N</i> = 18,577)					
Including stroke									
All-cause dementia	1,669	85,959	21.5	2,321	83,397	25.4	−3.8 (−6.4 to −1.3)	0.86 (0.78–0.96)	0.009
Alzheimer's disease	1,131	87,228	14.4	1,580	85,301	16.9	−2.5 (−4.6 to −0.4)	0.87 (0.76–0.99)	0.036
Vascular dementia	379	88,828	4.81	516	87,616	5.51	−0.7 (−1.9 to 0.5)	0.89 (0.71–1.12)	0.318

*Weighted incidence rate (per 1,000 person-years) comparing rhythm- and rate-controlled patients after overlap weighting was applied. AAD, anti-arrhythmic drug; CI, confidence interval.

All-cause dementia



The associations between rhythm control and decreased dementia risk were observed even after censoring for incident stroke (sHR 0.89, 95% CI 0.82-0.97) and were more pronounced in **relatively younger patients** and those with **lower CHA₂DS₂-VASc scores**.

Among dementia subtypes, rhythm control was associated with a lower risk of **Alzheimer's disease** (sHR 0.86, 95% CI 0.79-0.95).

Conclusions:

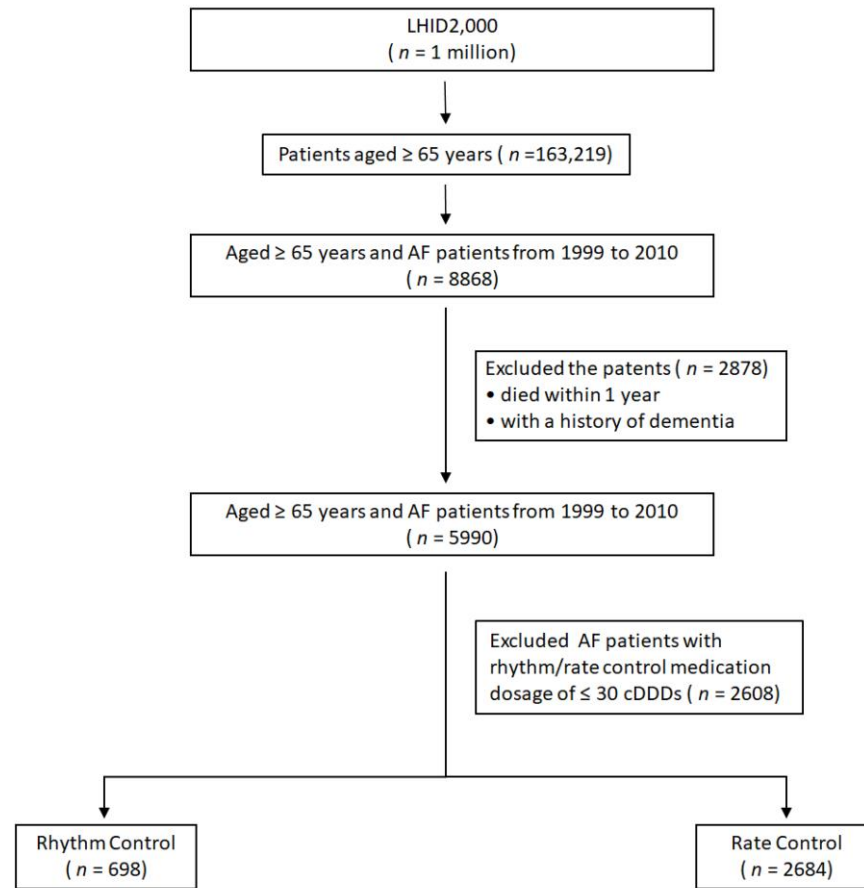
Among anticoagulated patients with AF, rhythm control was associated with a **lower risk of dementia**, compared with rate control.

Initiating rhythm control in AF patients **with fewer stroke risk factors** might help prevent subsequent dementia.

Age and Ageing 2022; 51: 1-9

Rhythm Control Better Prevents Dementia than Rate Control Strategies in Patients with Atrial Fibrillation—A Nationwide Cohort Study

Jiunn-Cherng Lin ^{1,2,3,4,5}, Cheng-Hung Li ^{1,2,4,5}, Yun-Yu Chen ^{6,7}, Chi-Jen Weng ^{1,2,4,5}, Yu-Shan Chien ^{1,2,3,4,5}, Shang-Ju Wu ^{1,2}, Chu-Pin Lo ⁴, Hui-Chun Tien ⁵, Ching-Heng Lin ^{8,9}, Jin-Long Huang ^{1,2,10}, Yenn-Jiang Lin ^{2,6}, Yu-Cheng Hsieh ^{1,2,4,5,10,*} and Shih-Ann Chen ^{1,2,6}



Rhythm Control Better Prevents Dementia than Rate Control Strategies in Patients with Atrial Fibrillation—A Nationwide Cohort Study

Jiunn-Cherng Lin ^{1,2,3,4,5}, Cheng-Hung Li ^{1,2,4,5}, Yun-Yu Chen ^{6,7}, Chi-Jen Weng ^{1,2,4,5}, Yu-Shan Chien ^{1,2,3,4,5}, Shang-Ju Wu ^{1,2}, Chu-Pin Lo ⁴, Hui-Chun Tien ⁵, Ching-Heng Lin ^{8,9}, Jin-Long Huang ^{1,2,10}, Yenn-Jiang Lin ^{2,6}, Yu-Cheng Hsieh ^{1,2,4,5,10,*} and Shih-Ann Chen ^{1,2,6}

Table 1. Baseline characteristics of the AF patients.

Variables	Rhythm Control N = 698	Rate Control N = 2684	p-Value
Age, mean (SD)	75.1 (6.2)	75.9 (6.7)	0.003 *
≥75 (%)	362 (51.9)	1489 (55.5)	0.09
Male (%)	398 (57.0)	1425 (53.1)	0.06
Co-morbidity (%)			
Hypertension	563 (80.7)	2303 (85.8)	0.0008
Diabetes	216 (30.9)	879 (32.7)	0.36
Heart failure	214 (30.7)	1186 (44.2)	<0.0001
Stroke	271 (38.8)	1095 (40.8)	0.34
VHD	165 (23.6)	663 (24.7)	0.56
CAD	478 (68.5)	1925 (71.7)	0.09
COPD	403 (57.7)	1581 (58.9)	0.58
Depression	49 (7.0)	173 (6.4)	0.59
** Propensity score	0.22 (0.05)	0.20 (0.05)	<0.001
Medications (%)			
ACEIs/ARBs	427 (61.2)	1812 (67.5)	0.0016
Alpha blockers	147 (21.1)	518 (19.3)	0.3
Diuretics	379 (54.3)	1831 (68.2)	<0.0001
Aspirin	479 (68.6)	1953 (72.8)	0.03
Clopidogrel	116 (16.6)	332 (12.4)	0.0032
Warfarin	108 (15.5)	526 (19.6)	0.01
Statins	131 (18.8)	394 (14.7)	0.0079
Fibrates	28 (4.01)	117 (4.36)	0.69
Catheter ablation for AF (%)	7 (0.26)	4 (0.57)	0.197
Electrical cardioversion (%)	9 (1.3)	20 (0.7)	0.165
Maze procedure (%)	0 (0%)	1 (0%)	-

Rhythm Control Better Prevents Dementia than Rate Control Strategies in Patients with Atrial Fibrillation—A Nationwide Cohort Study

Jiunn-Cherng Lin ^{1,2,3,4,5}, Cheng-Hung Li ^{1,2,4,5}, Yun-Yu Chen ^{6,7}, Chi-Jen Weng ^{1,2,4,5}, Yu-Shan Chien ^{1,2,3,4,5}, Shang-Ju Wu ^{1,2}, Chu-Pin Lo ⁴, Hui-Chun Tien ⁵, Ching-Heng Lin ^{8,9}, Jin-Long Huang ^{1,2,10}, Yenn-Jiang Lin ^{2,6}, Yu-Cheng Hsieh ^{1,2,4,5,10,*} and Shih-Ann Chen ^{1,2,6}

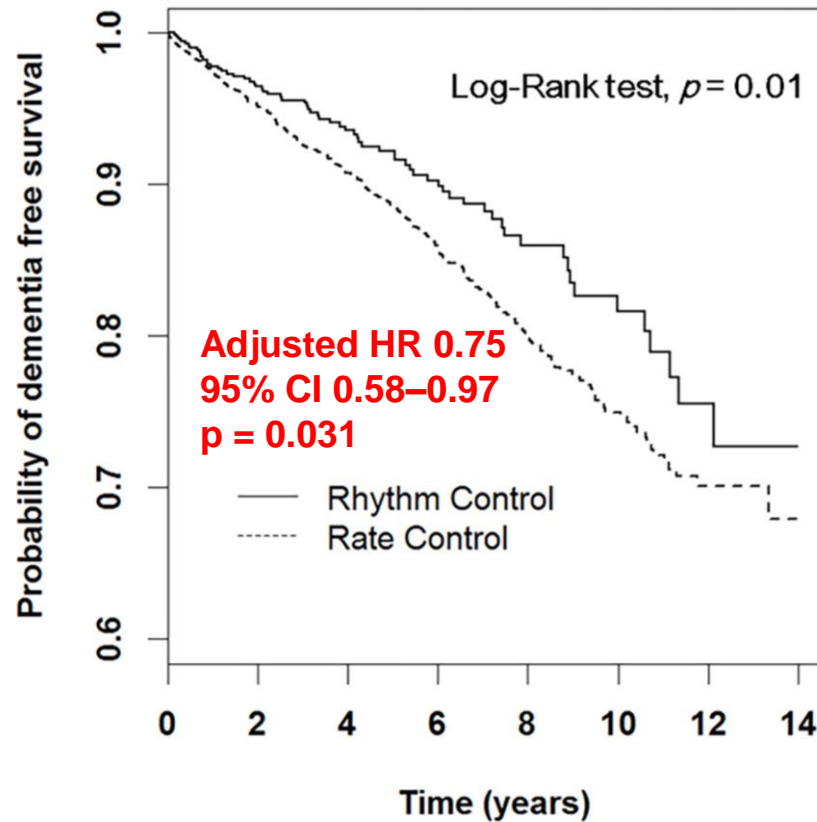
Table 2. Medications used for rate and rhythm control in AF patients.

Medications	Rhythm Control N = 698	Rate Control N = 2684	p-Value
Rate control (%)			
β-Blocker	299 (42.8)	1700 (63.3)	<0.0001
Diltiazem	145 (20.8)	1060 (39.5)	<0.0001
Verapamil	62 (8.9)	405 (15.1)	<0.0001
Digoxin	182 (26.1)	1860 (69.3)	<0.0001
Rhythm control (%)			
Quinidine	4 (0.57)		
Flecainide	4 (0.57)		
Propafenone	255 (36.5)		
Amiodarone	540 (77.4)		
Sotalol	6 (0.86)		

Rhythm Control Better Prevents Dementia than Rate Control Strategies in Patients with Atrial Fibrillation—A Nationwide Cohort Study

Jiunn-Cherng Lin^{1,2,3,4,5}, Cheng-Hung Li^{1,2,4,5}, Yun-Yu Chen^{6,7}, Chi-Jen Weng^{1,2,4,5}, Yu-Shan Chien^{1,2,3,4,5}, Shang-Ju Wu^{1,2}, Chu-Pin Lo⁴, Hui-Chun Tien⁵, Ching-Heng Lin^{8,9}, Jin-Long Huang^{1,2,10}, Yenn-Jiang Lin^{2,6}, Yu-Cheng Hsieh^{1,2,4,5,10,*} and Shih-Ann Chen^{1,2,6}

4.86 years follow up



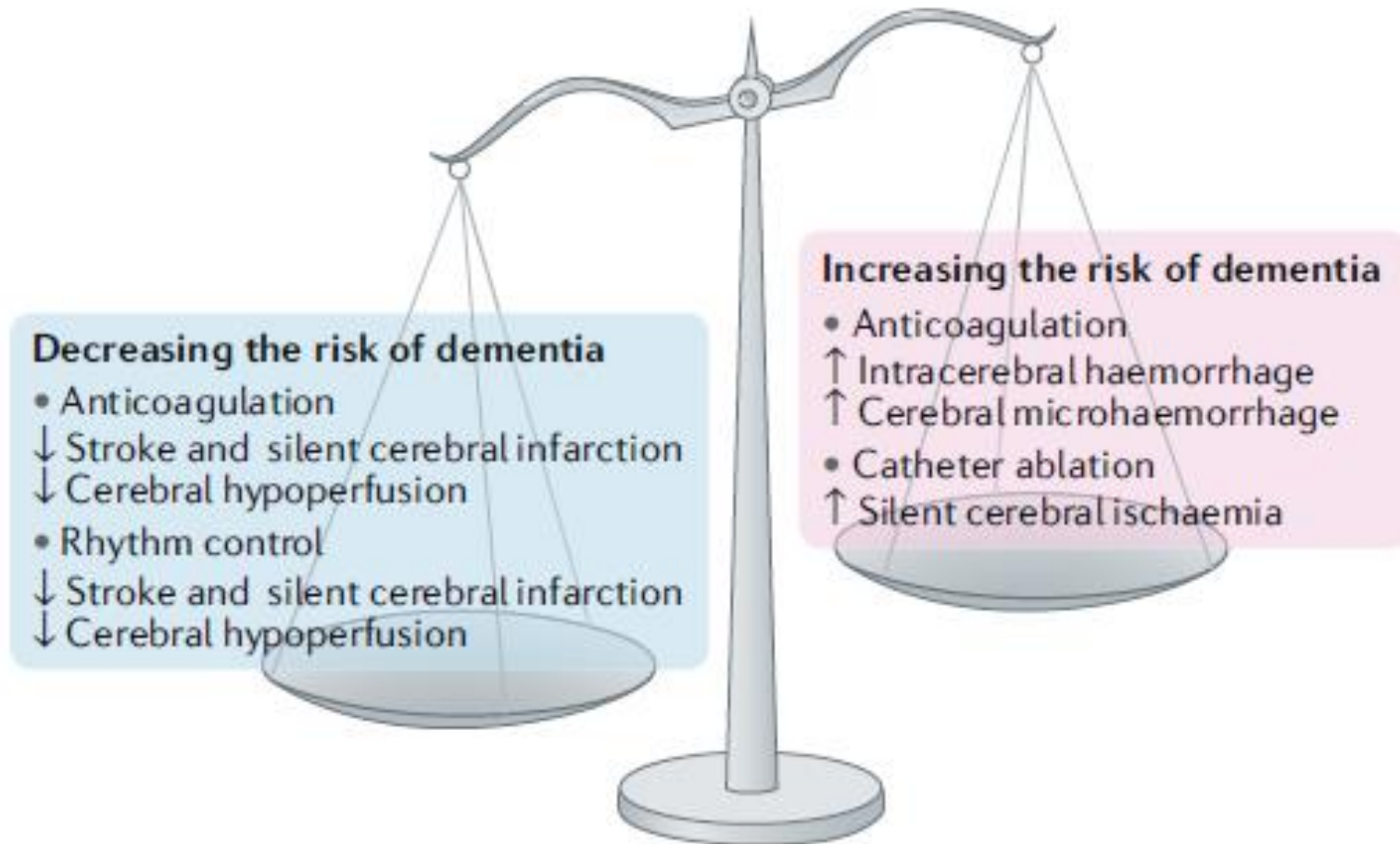
- The pharmacological rhythm control strategy was associated with a lower risk of dementia in elderly (aged >65 years) AF patients compared to the rate control strategy following a long-term follow-up.

Rhythm Control of AF on Dementia

Catheter Ablation

Cognitive dysfunction in atrial fibrillation

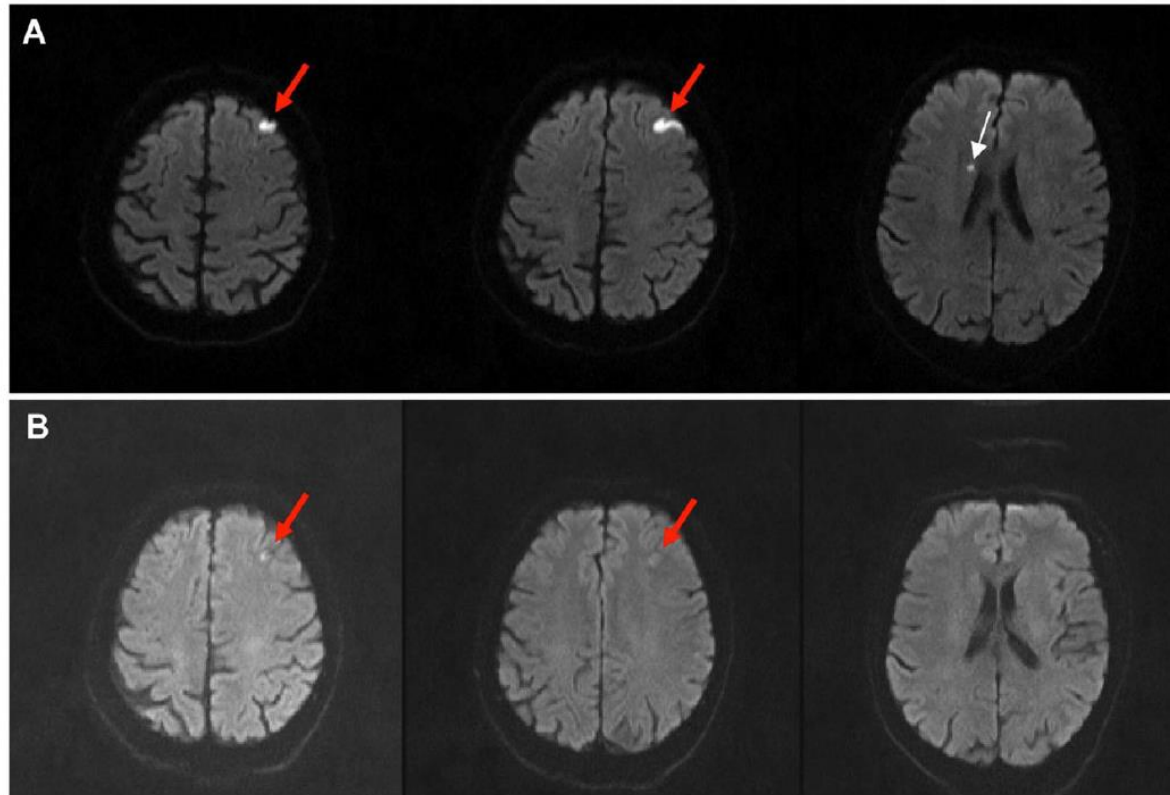
Malini Madhavan¹, Jonathan Graff-Radford², Jonathan P. Piccini³ and Bernard J. Gersh¹*



Catheter Ablation of Atrial Fibrillation and Risk of Asymptomatic Cerebral Embolism

FAISAL M. MERCHANT, M.D. and DAVID B. DELURGIO, M.D.

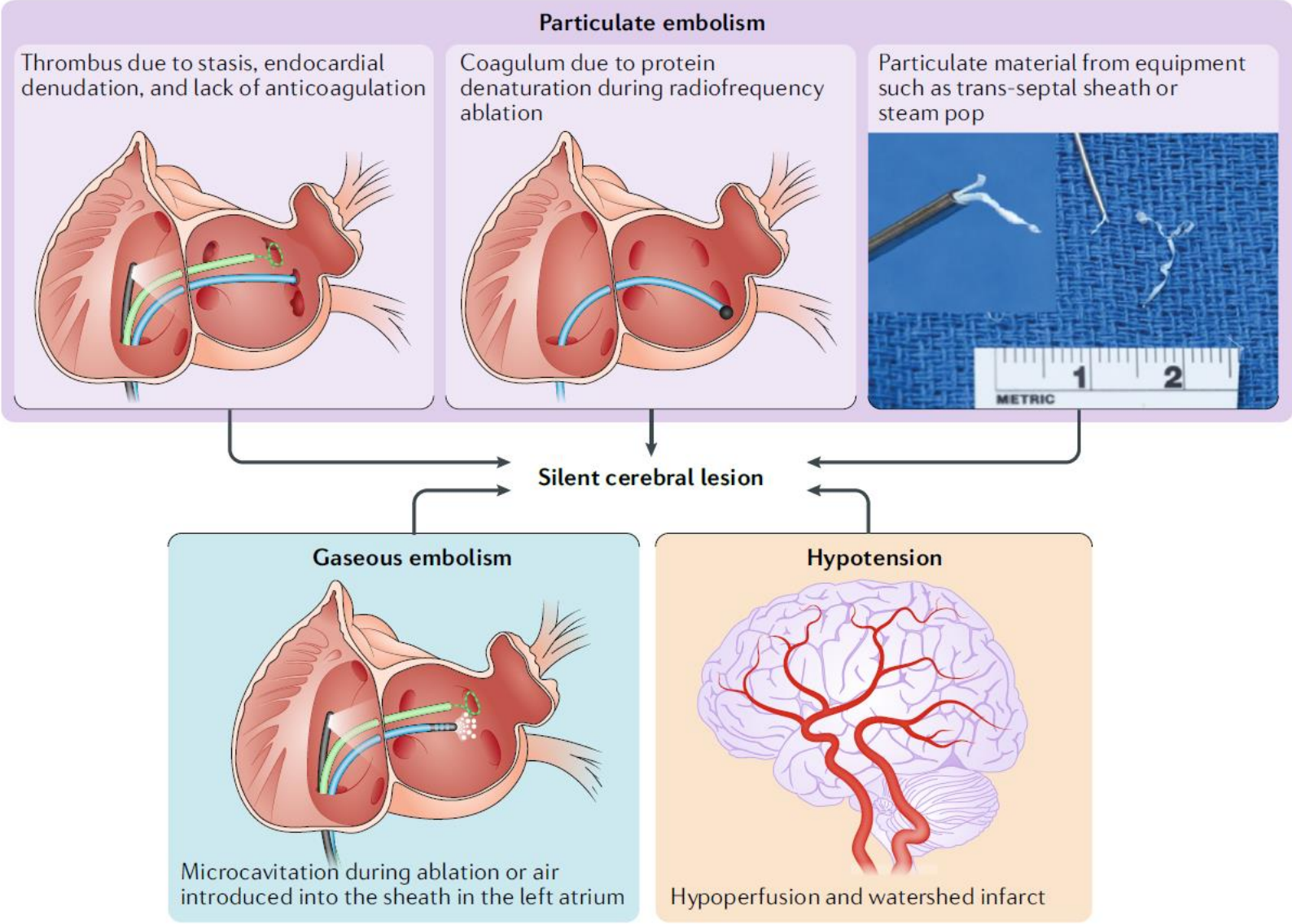
From the Department of Medicine, Division of Cardiology, Emory University School of Medicine, Atlanta, Georgia



Deneke et al. reported that 94% of the SCI lesions disappear with long-term follow-up.

Figure 2. Evolution of ACE lesions on postablation and follow-up MRI. Panel (A) demonstrates MRI findings from the day after ablation in a single patient with a large frontal lobe DWI-positive lesion (red arrow) and a smaller periventricular lesion (white arrow). At follow-up MRI performed 17 weeks following ablation (Panel B), a residual scar is seen corresponding to the large frontal lobe lesion (red arrow) whereas no residual evidence of the smaller periventricular lesion is seen. ACE = asymptomatic cerebral embolism; DWI = diffusion-weighted imaging; MRI = magnetic resonance imaging. Reproduced with permission from "Heart Rhythm."¹⁶

Etiology of silent cerebral lesions after CA of AF



Cognitive dysfunction in atrial fibrillation

Malini Madhavan^{1}, Jonathan Graff-Radford², Jonathan P. Piccini³ and Bernard J. Gersh¹*

Key points

- Atrial fibrillation is associated with increased risks of dementia and cognitive impairment, independent of history of stroke and other shared risk factors.
- Proposed mechanisms of cognitive impairment in atrial fibrillation include cerebral thromboembolism, cerebral hypoperfusion, and cerebral microbleeds.
- Anticoagulation might be protective against cognitive impairment in atrial fibrillation, but further prospective studies are needed.
- Catheter ablation of atrial fibrillation is associated with new silent cerebral lesions, but the effect on cognitive function is unknown.

Nature Review 2018

Catheter ablation of atrial fibrillation reduces the risk of dementia and hospitalization during a very long-term follow-up **9-years follow-up**



Yu-Cheng Hsieh ^{a,b,*}, Yun-Yu Chen ^{c,d}, Kuo-Liong Chien ^d, Fa-Po Chung ^{b,c}, Li-Wei Lo ^{b,c}, Shih-Lin Chang ^{b,c}, Tze-Fan Chao ^{b,c}, Yu-Feng Hu ^{b,c}, Chin-Yu Lin ^{b,c}, Ta-Chuan Tuan ^{b,c}, Jo-Nan Liao ^{b,c}, Yenn-Jiang Lin ^{b,c,**}, Shih-Ann Chen ^{b,c}

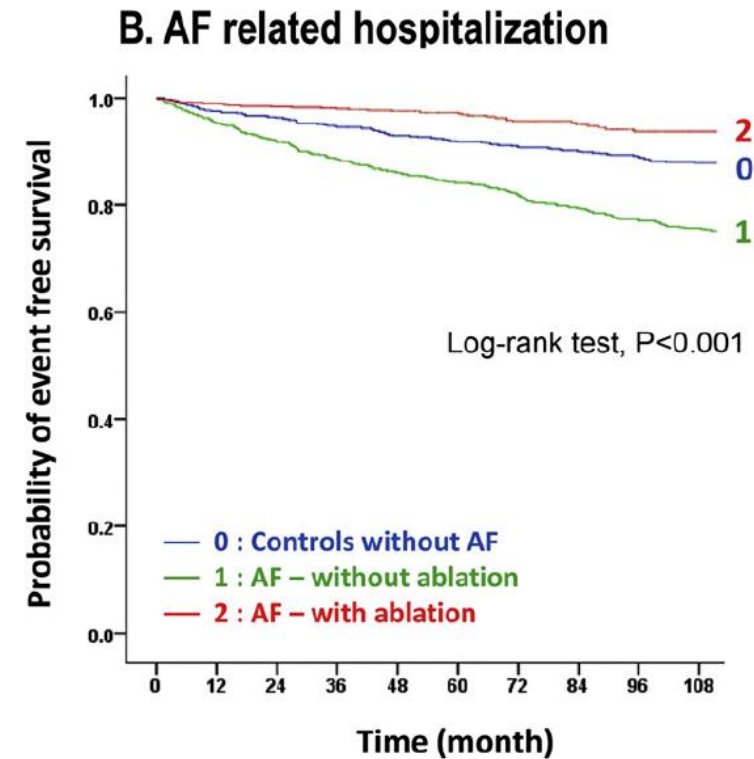
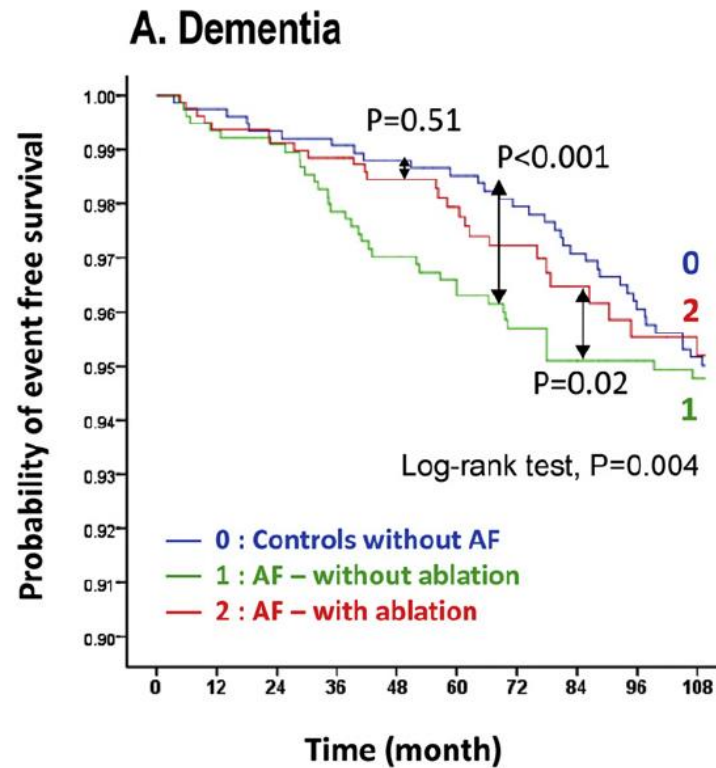
Table 1. Baseline characteristics of the study populations

	p-value for all groups	Controls (N=770)	AF without CA (N=787)	AF with CA (N=787)	p-value for AF patients
Male gender (%)	0.99	542 (70.4%)	551 (70%)	552 (70.1%)	0.96
Age (years)	0.17	53.1 ± 13.6	54.9 ± 11.6	54.1 ± 11.5	0.49
Underlying diseases					
Hypertension (%)	0.98	287 (37.3%)	290 (36.8%)	290 (36.8%)	>0.99
Chronic kidney disease (%)	0.83	3 (0.4%)	4 (0.5%)	10 (1.3%)	0.11
COPD (%)	0.06	19 (2.5%)	16 (2%)	31 (3.9%)	0.03
Diabetes mellitus (%)	0.02	82 (10.6%)	53 (6.7%)	63 (8%)	0.34
Congestive heart failure (%)	<0.001	18 (2.3%)	50 (6.4%)	51 (6.5%)	0.92
Coronary artery disease (%)	<0.001	1 (0.13%)	2 (2.1%)	38 (4.8%)	<0.001
Stroke/TIA	<0.001	35 (4.5%)	28 (3.6%)	66 (8.4%)	<0.001
Medication					
Anti-arrhythmic agents (%)	<0.001	65 (8.4%)	459 (58.3%)	759 (96.4%)	<0.001
Insulin (%)	<0.001	101 (13.1%)	114 (14.5%)	13 (1.7%)	<0.001
Statins (%)	<0.001	304 (39.5%)	334 (42.4%)	289 (36.7%)	<0.001
Angiotensin II receptor blockers (%)	<0.001	387 (50.3%)	547 (69.5%)	404 (51.3%)	<0.001
Anti-platelet agents* (%)	<0.001	424 (55.5%)	661 (84%)	761 (96.7%)	<0.001
Warfarin (%)	<0.001	36 (4.7%)	448 (56.9%)	291 (37%)	<0.001
CHA ₂ DS ₂ -VASc score (median, Q1-Q3)	0.15	0 (0-1)	0 (0-1)	1 (0-1)	0.10

Catheter ablation of atrial fibrillation reduces the risk of dementia and hospitalization during a very long-term follow-up **9-years follow-up**



Yu-Cheng Hsieh ^{a,b,*}, Yun-Yu Chen ^{c,d}, Kuo-Liong Chien ^d, Fa-Po Chung ^{b,c}, Li-Wei Lo ^{b,c}, Shih-Lin Chang ^{b,c}, Tze-Fan Chao ^{b,c}, Yu-Feng Hu ^{b,c}, Chin-Yu Lin ^{b,c}, Ta-Chuan Tuan ^{b,c}, Jo-Nan Liao ^{b,c}, Yenn-Jiang Lin ^{b,c,**}, Shih-Ann Chen ^{b,c}



Catheter ablation of atrial fibrillation reduces the risk of dementia and hospitalization during a very long-term follow-up **9-years follow-up**



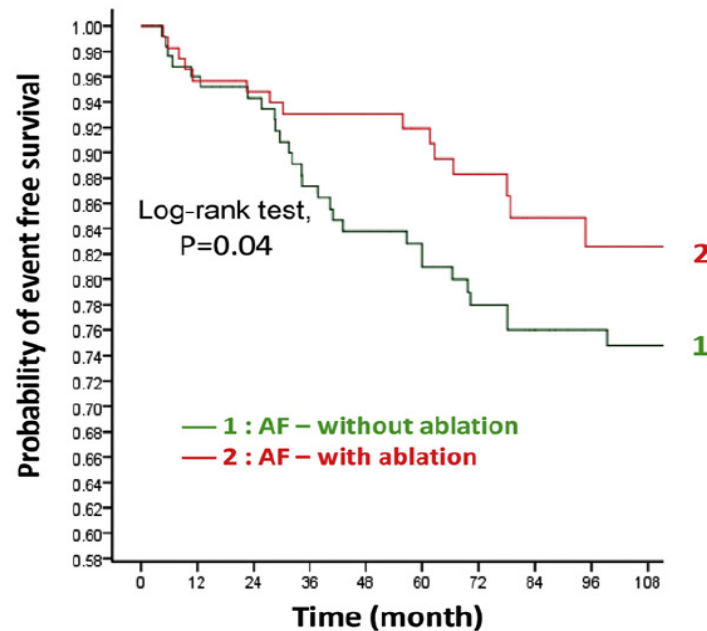
Yu-Cheng Hsieh ^{a,b,*}, Yun-Yu Chen ^{c,d}, Kuo-Liong Chien ^d, Fa-Po Chung ^{b,c}, Li-Wei Lo ^{b,c}, Shih-Lin Chang ^{b,c}, Tze-Fan Chao ^{b,c}, Yu-Feng Hu ^{b,c}, Chin-Yu Lin ^{b,c}, Ta-Chuan Tuan ^{b,c}, Jo-Nan Liao ^{b,c}, Yenn-Jiang Lin ^{b,c,**}, Shih-Ann Chen ^{b,c}

In a 9-year follow-up, we found that CA had reduced the risk of dementia and hospitalization in AF patients, compared with those without CA.

Such reduction in the risk of dementia was particularly clear in older AF patients (aged >65 yrs)

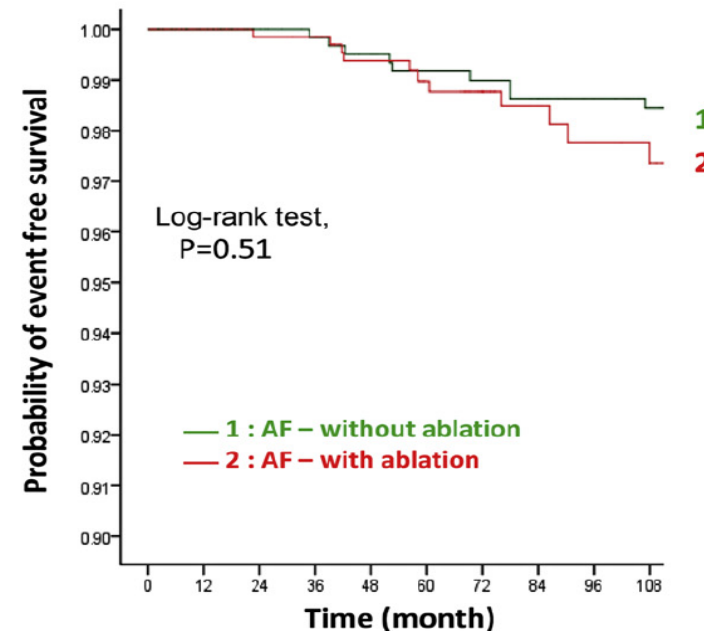
A. Dementia

Age > 65 years



B. Dementia

Age ≤ 65 years



Conclusions

- AF is associated with increased risks of dementia, independent of stroke history and shared risk factors.
- The mechanisms include cerebral thromboembolism, hypoperfusion, and microbleeds.
- AF ablation might lead to a high prevalence of SCI, which might affect cognition in the future.
- Rhythm control (pharmacological/ablation) reduces the risk of dementia in AF Patients.
- ERC also showed a lower risk of dementia in Korean AF patients with prior stroke.



Thank you !!