Post-Maze Sick Sinus Node Syndrome, Followed by AF Recurrence Cons. Pacemaker & Further Rhythm Control

KSC April 2016

Debate: Valvular AF

Jaemin Shim, MD, PhD

Arrhythmia Center,

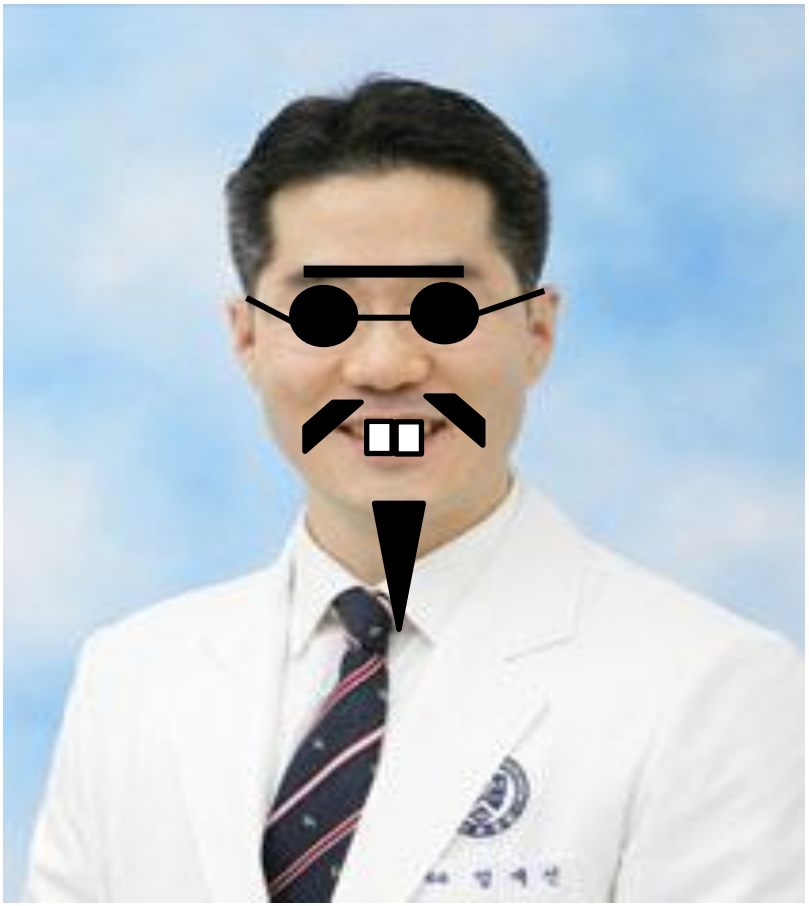
Korea University Anam Hospital, Seoul, Korea

5 years ago

Disclosures

- **Dr. Uhm and Shim have been trained in the same institution.**
- **Dr. Uhm and Shim are good friends.**
- **We've never had a debate on any issues.**

지못미



Basic Principles of AF Management

- **Development of AF generally confers a worse prognosis in most serious diseases.**
- **Therapy for underlying conditions should be optimal and guideline based.**
- **Stroke risk must be considered.**
- **Symptoms should drive decision making.**
- **Safety should determine the initial antiarrhythmic drug chosen for rhythm control.**

Circulation. 2012;125:945-957.

Basic Principles of AF Management

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- Therapy for underlying conditions should be
- **No one wants to be in AF!**
- Stroke risk must be considered.
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Circulation. 2012;125:945-957.

Potential Benefits of Rhythm Control

- Mortality
- Stroke
- Improvements in LV function
- AF symptoms
- Exercise tolerance
- Quality of life

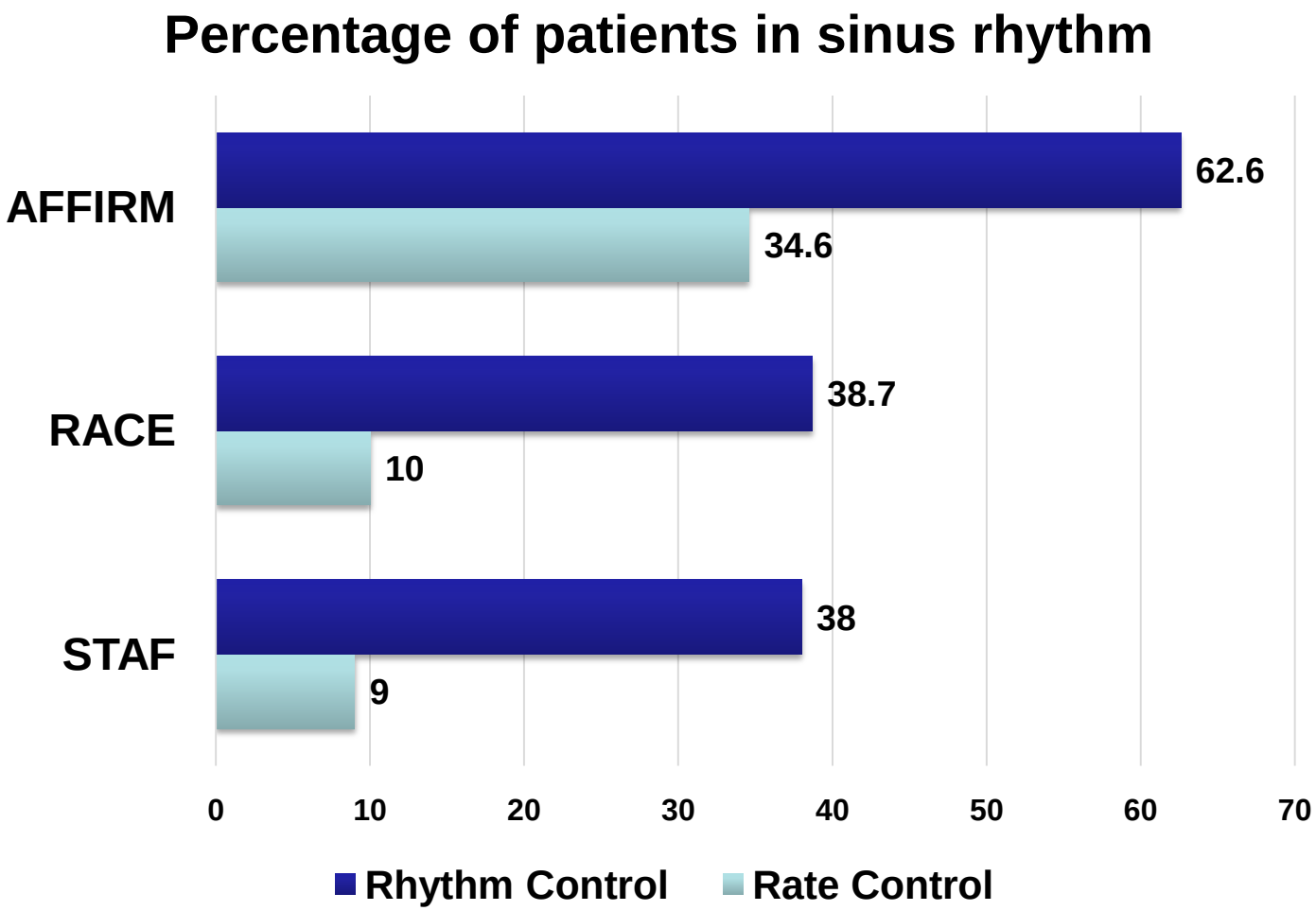
Well established

Pitfalls in Rate vs. Rhythm Control Trials

- **Rhythm intervention: AAD or cardioversion**
- **Rate control was compared with frequently inadequate rhythm control**
- **Survival benefits of sinus rhythm were offset by the risks of drug therapy.**

Verma A, Natale A. Circulation. 2005;112:1214-1231.

Pitfalls in Rate vs. Rhythm Control Trials



Verma A, Natale A. Circulation. 2005;112:1214-1231.

AFFIRM On-Treatment Analysis

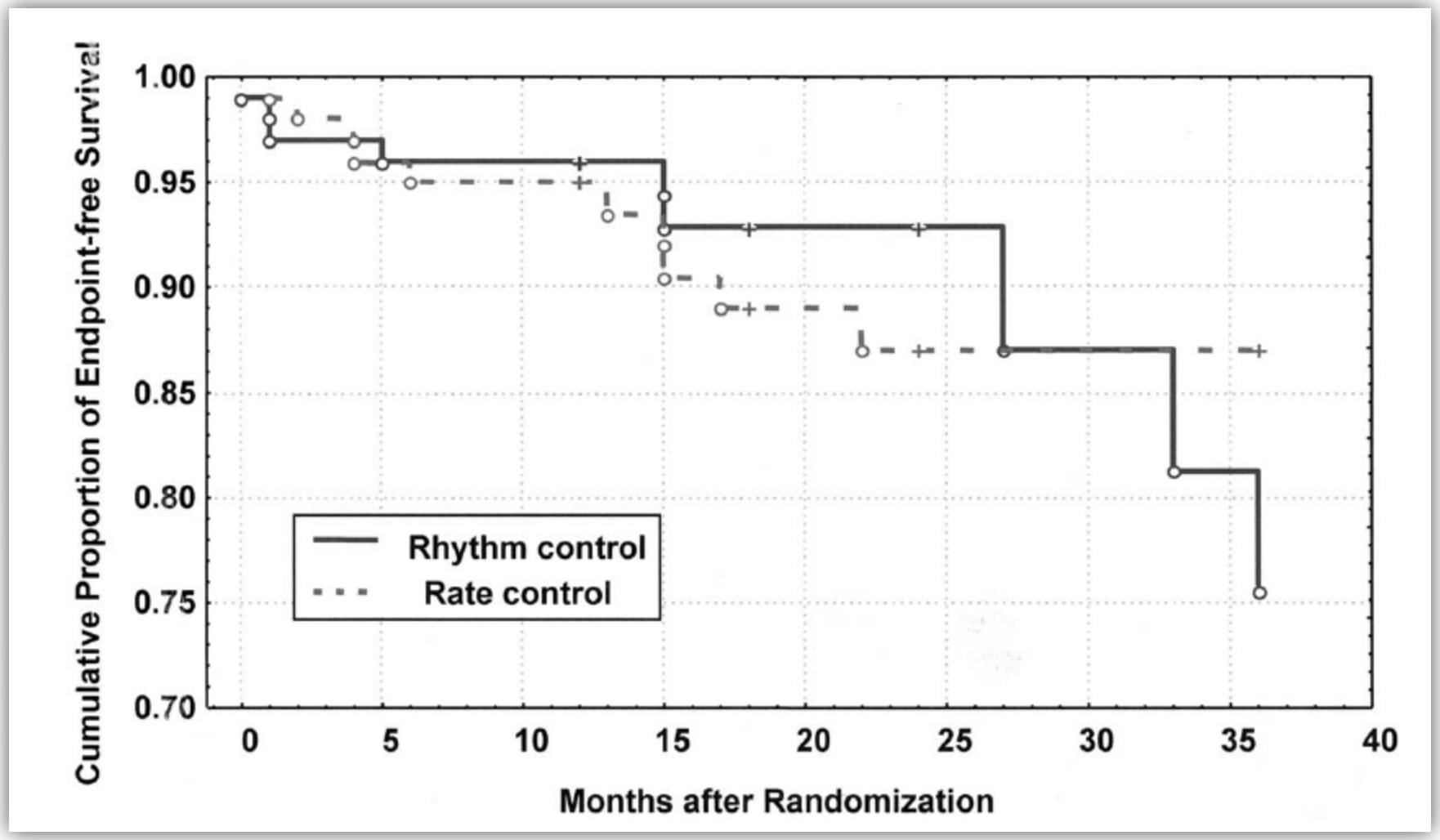
Covariates Significantly Associated With Survival

Covariate	P	HR	HR: 99% CI	
			Lower	Upper
Age at enrollment*	<0.0001	1.06	1.04	1.08
Coronary artery disease	<0.0001	1.65	1.31	2.07
Congestive heart failure	<0.0001	1.83	1.45	2.32
Diabetes	<0.0001	1.56	1.22	2.00
Stroke or TIA	<0.0001	1.54	1.17	2.05
Smoking	<0.0001	1.75	1.29	2.39
First episode of AFib	0.0067	1.27	1.01	1.58
Sinus rhythm	<0.0001	0.54	0.42	0.70
Warfarin use	<0.0001	0.47	0.36	0.61
Digoxin use	<0.0001	1.50	1.18	1.89
Rhythm-control drug use	0.0005	1.41	1.10	1.83

* per year of age

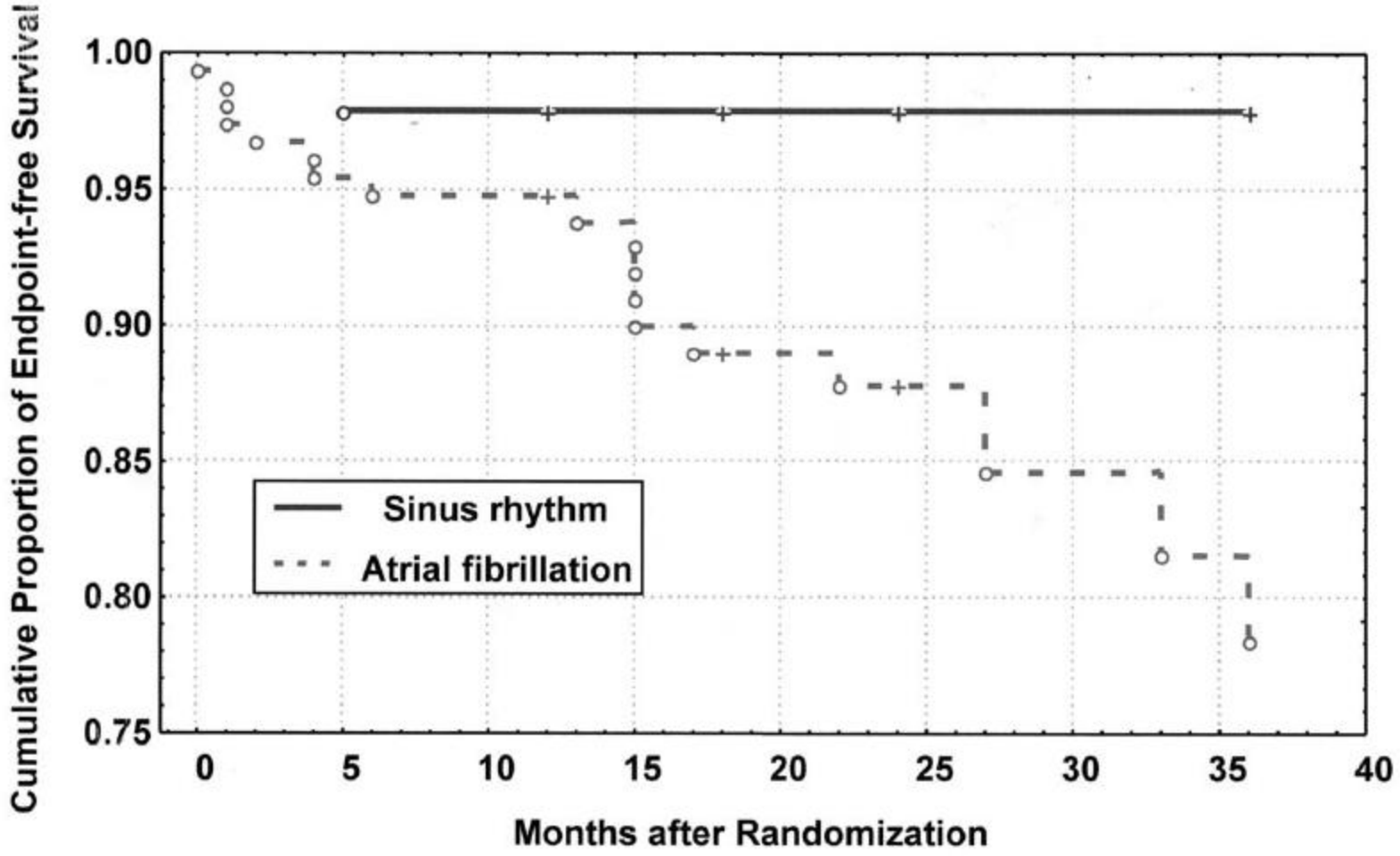
AFFIRM Investigators Circulation. 2004;109:1509-1513

STAF Trial



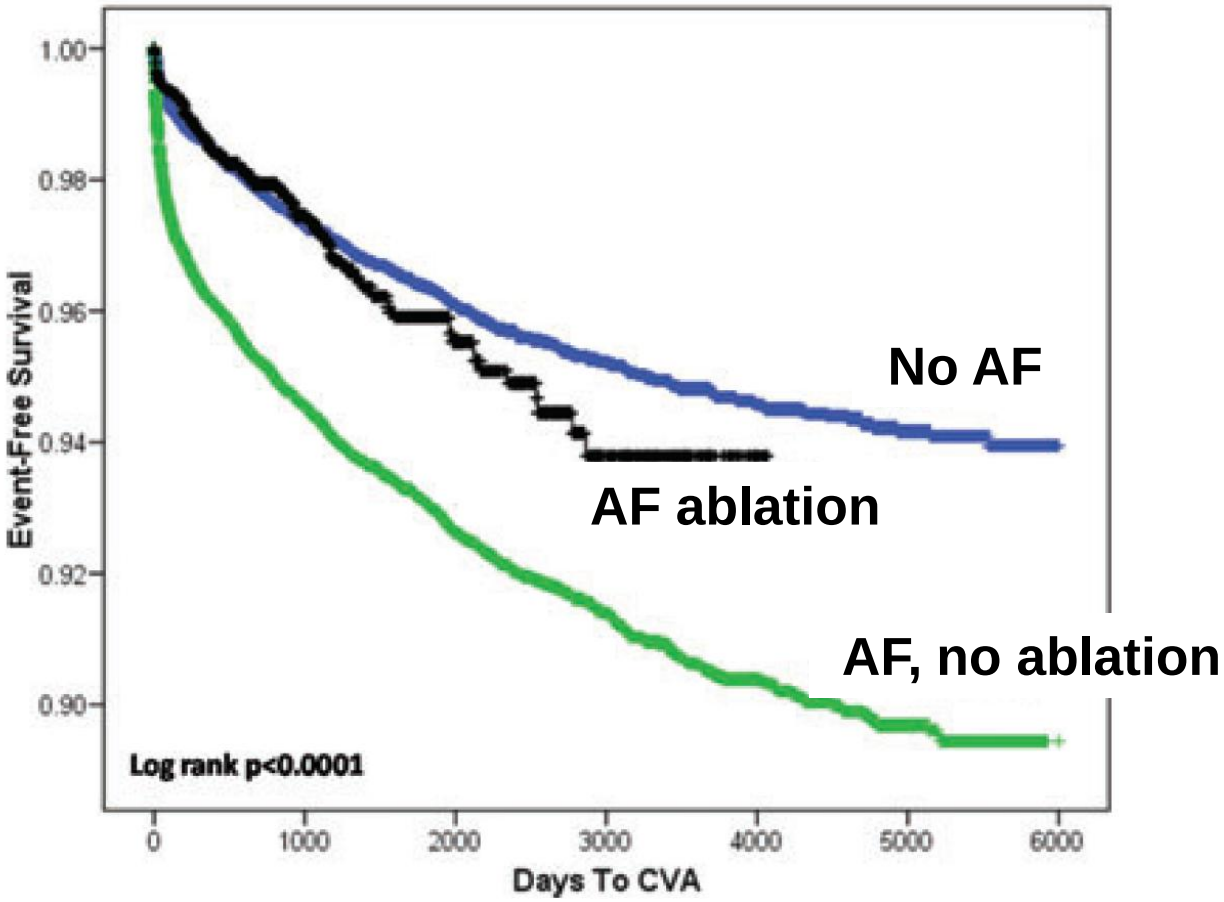
Carlsson J et al. J Am Coll Cardiol 2003;41:1690–6

STAF Trial



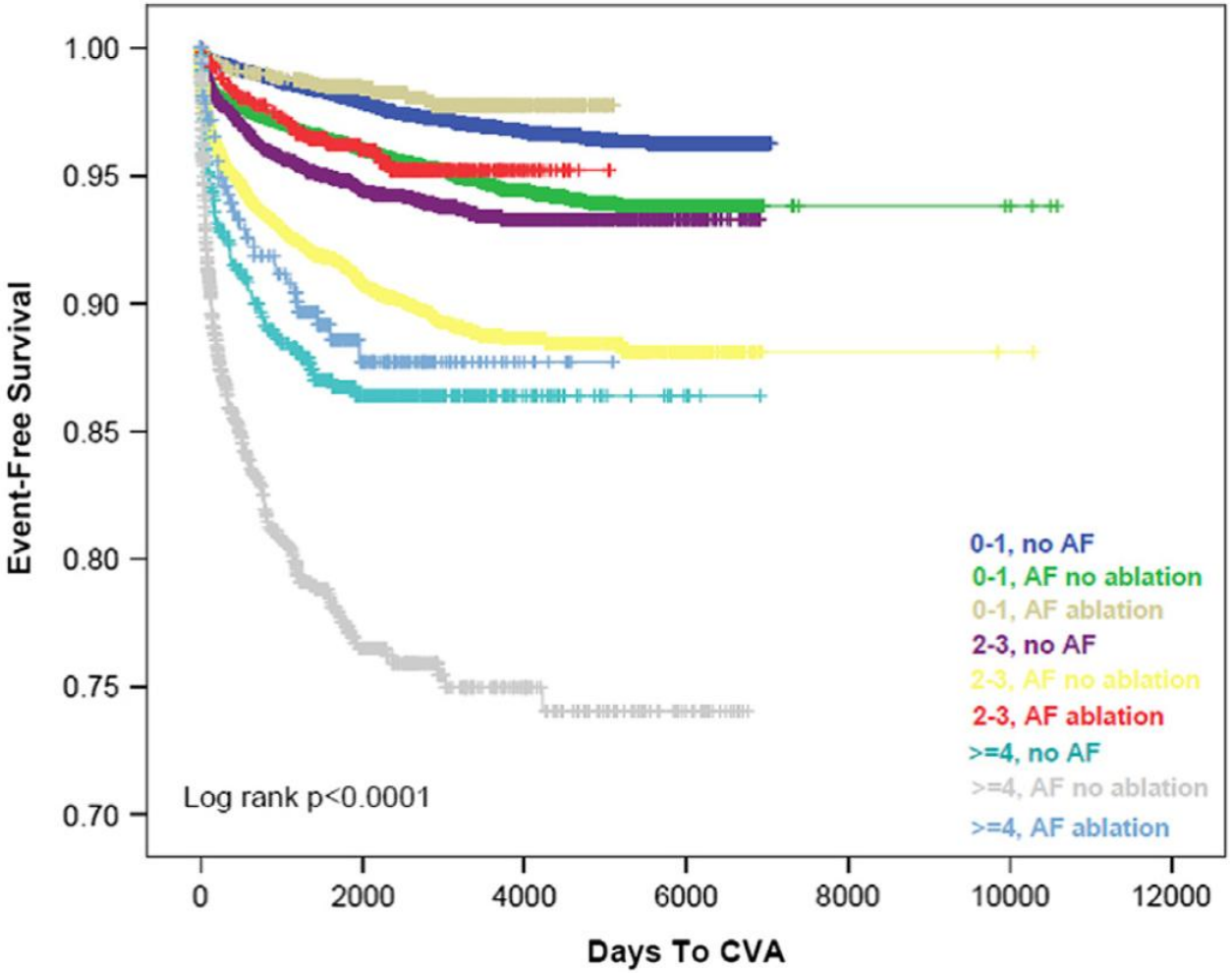
Carlsson J et al. J Am Coll Cardiol 2003;41:1690–6

Impact of AF Ablation on Stroke



JCE, 2011;22(8):839-45

Impact of AF Ablation on Stroke



Heart Rhythm 2013;10:1272–77

Dr. Uhm's Cheating

Original Article | http://dx.doi.org/10.3349/ymj.2014.55.5.1238
pISSN: 0513-5796, eISSN: 1976-2437 | Yonsei Med J 55(5):1238-1245, 2014

YMJ

CrossMark click for updates

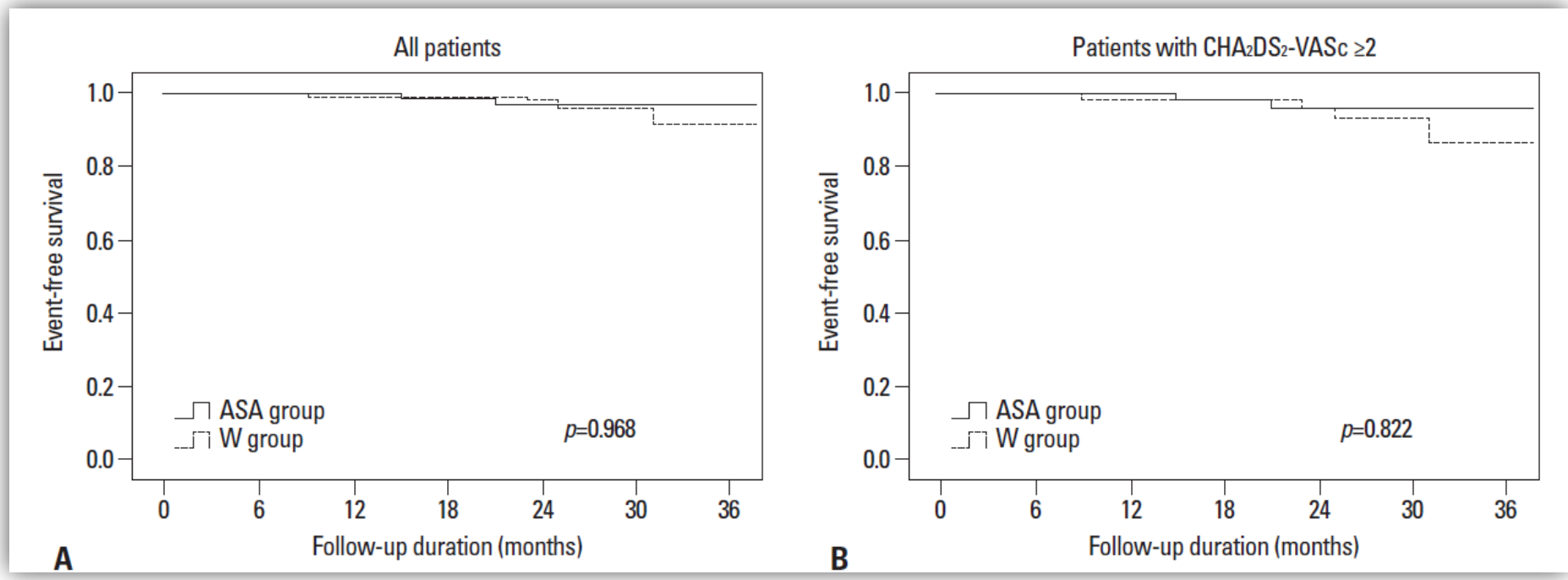
Safety and Efficacy of Switching Anticoagulation to Aspirin Three Months after Successful Radiofrequency Catheter Ablation of Atrial Fibrillation

Jae-Sun Uhm,[1] Hoyoun Won,[1] Boyoung Joung,[1] Gi-Byoung Nam,[2] Kee-Joon Choi,[2] Moon-Hyoung Lee,[1] You-Ho Kim,[2] and Hui-Nam Pak[1]

[1]Division of Cardiology, Department of Internal Medicine, Severance Hospital, Yonsei University College of Medicine, Seoul;
[2]Division of Cardiology, Department of Internal Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea.

Yonsei Med J. 2014;55(5):1238-45.

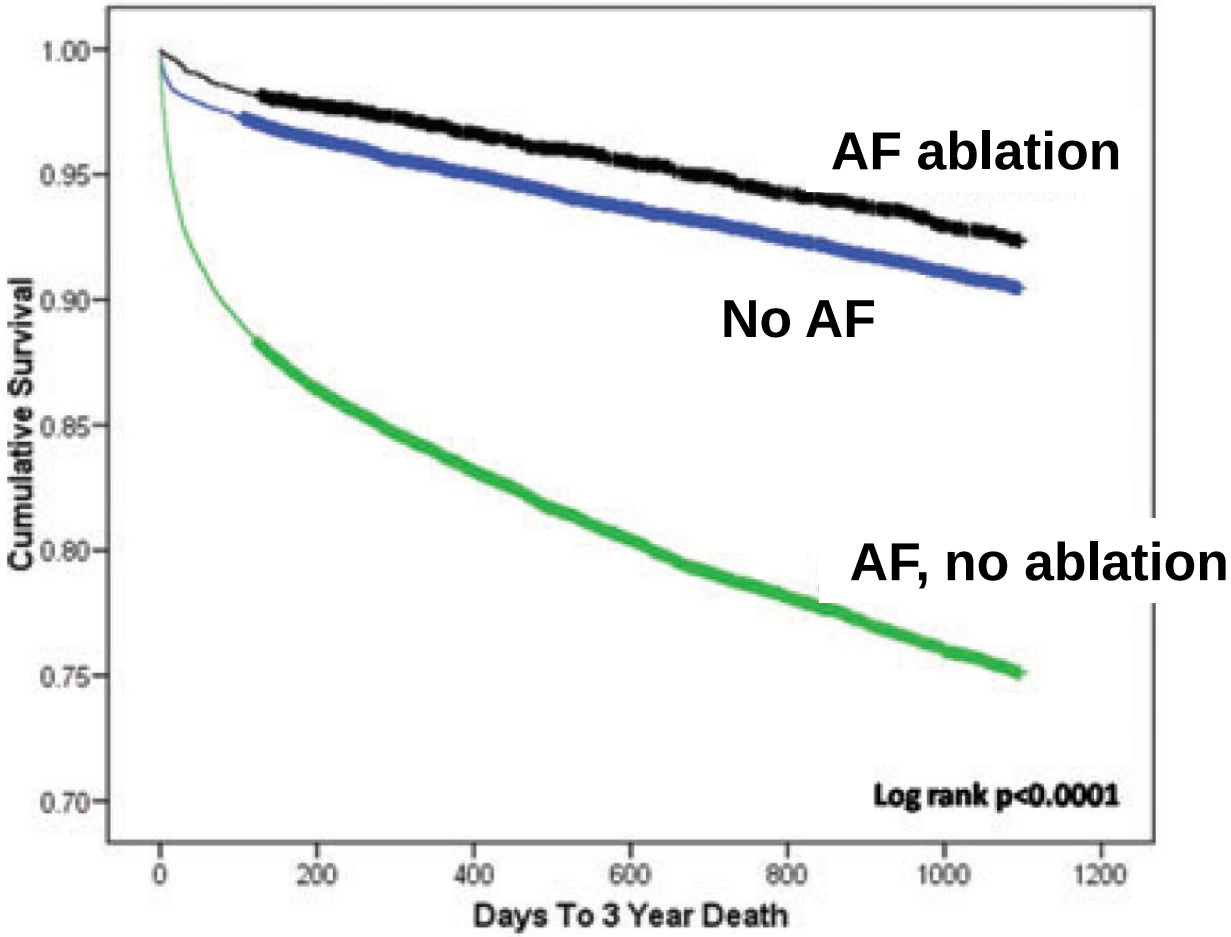
Dr. Uhm's Cheating



Conclusions: Switching warfarin to aspirin 3 months after successful RFCA of AF could be as safe and efficacious as long-term anticoagulation even in patients with CHA_2DS_2VASc score ≥2.

Yonsei Med J. 2014;55(5):1238-45.

Impact of AF Ablation on Mortality



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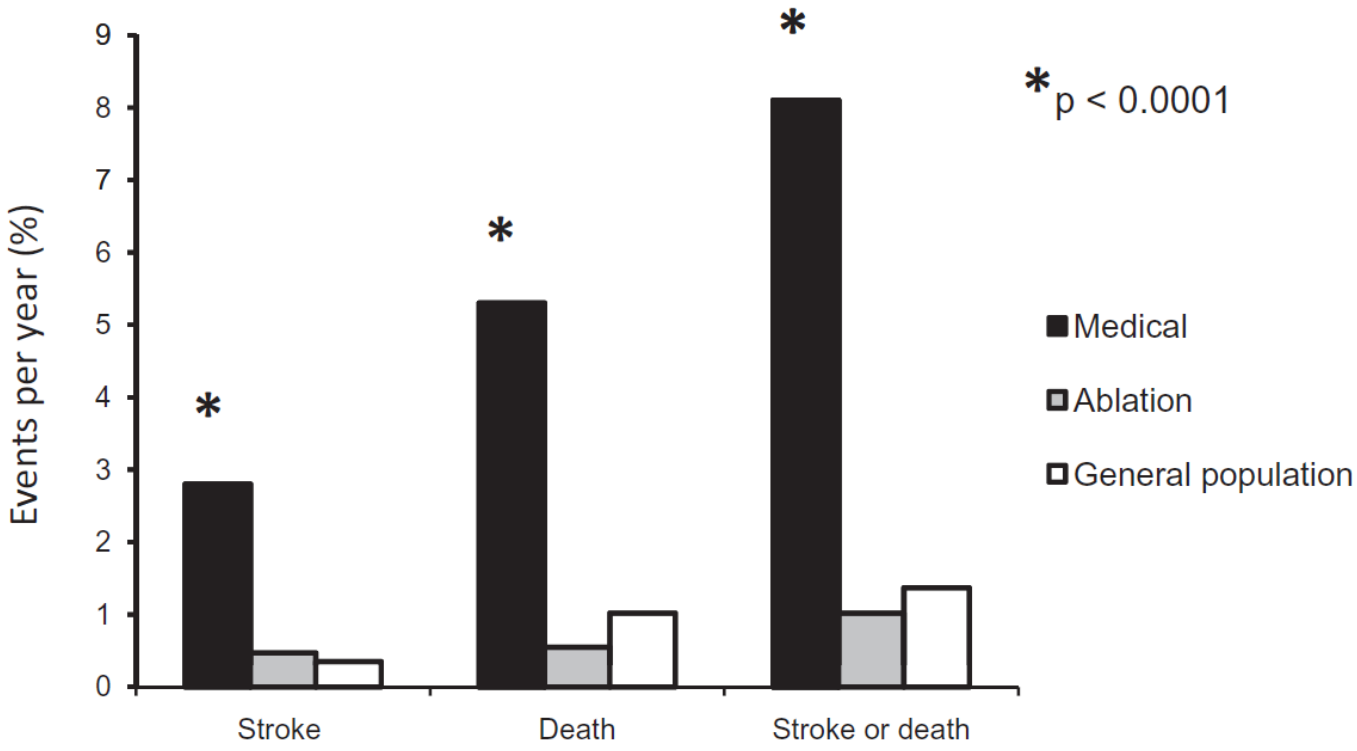
Impact of AF Ablation on Mortality



Heart 2012;98:48e53

Rhythm Control in Valvular AF

J Cardiovasc Pharmacol Therapeut 9(2):65–73, 2004

Control of Heart Rate Versus Rhythm in Rheumatic Atrial Fibrillation: A Randomized Study

Amit Vora, MD,* Dilip Karnad, MD,† Venkat Goyal, MD,* Ajay Naik, MD,* Anup Gupta, MD,* Yas Lokhandwala, MD,* Hema Kulkarni, MD,* and Bramah N. Singh, MD, D.Phil, DSc (Oxon)‡

Background: Patients with rheumatic heart disease with atrial fibrillation incur significant morbidity and mortality. Which approach, ventricular rate control or maintenance of sinus rhythm, in this setting might be superior is not known. The role of amiodarone in this patient population for maintaining sinus rhythm has not been evaluated.

Methods and Results: We prospectively studied 144 patients with chronic rheumatic atrial fibrillation in a double-blind protocol in which rhythm control (group I), comprising 48 patients each with amiodarone (group Ia) and placebo (group Ib), were compared with each other and with patients in a ventricular rate control group (group II) in which the effects by

J Cardiovasc Pharmacol Therapeut 2004; 9:65–73

Rhythm Control in Valvular AF

Outcome in Rhythm vs. Rate Group

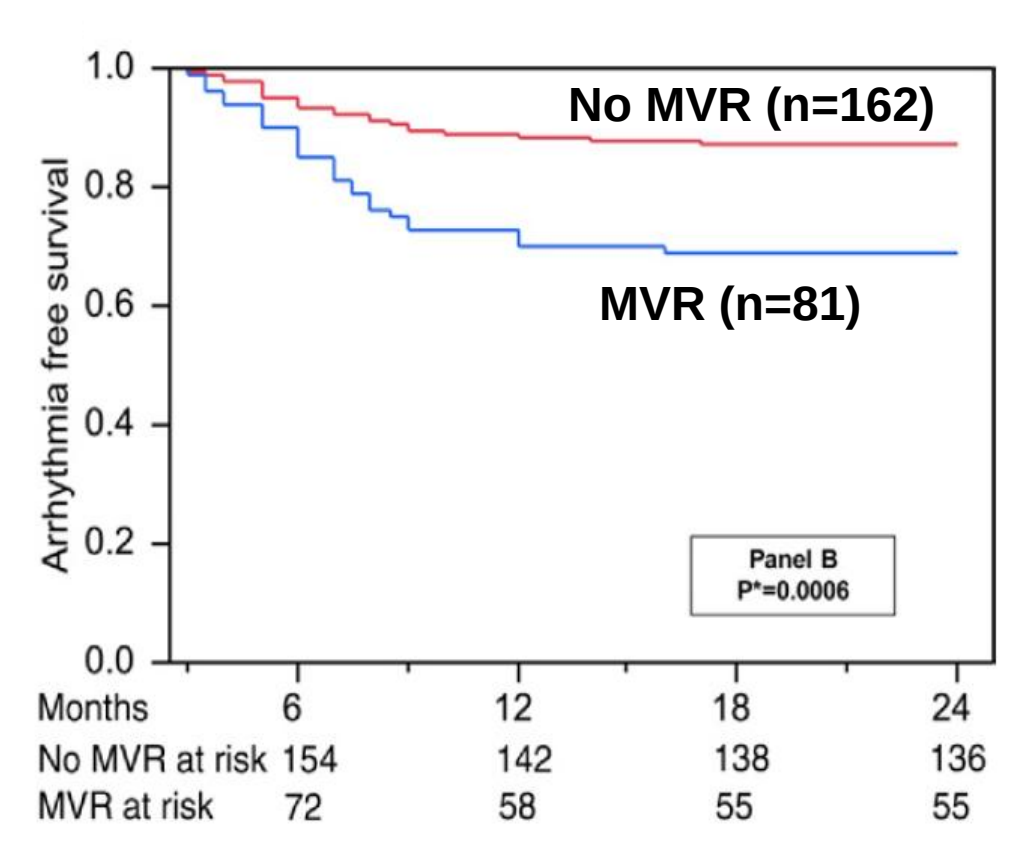
	Rhythm (n = 45)	Rate (n = 40)	*P* Value
Improvement in exercise time, minutes (SD)*	2.6 (1.9)	0.6 (2.5)	.001
NYHA class*			.0014
improved (≥ 1 class)	27	7	
same	16	24	
worsened (≥ 1 class)	2	4	
QOL score*			.033
improved (≥ 1 class)	39	20	
same	6	14	
worsened (≥ 1 class)	0	1	
Deaths	0	5	.023
Hospitalization*	4	6	0.51
Bleeding*	1	2	1
Thrombosis*	1†	0	1

*These parameters were assessed at baseline and at the end of 12 months in patients who survived (n = 35, rate control arm).
†Transient ischemic attack.

J Cardiovasc Pharmacol Therapeut 2004; 9:65–73

RFCA of AF in Patients with MVR

Arrhythmia free survival after the last ablation



Hussein et al. J Am Coll Cardiol 2011;58:596–602

RFCA of AF in Patients with MVR

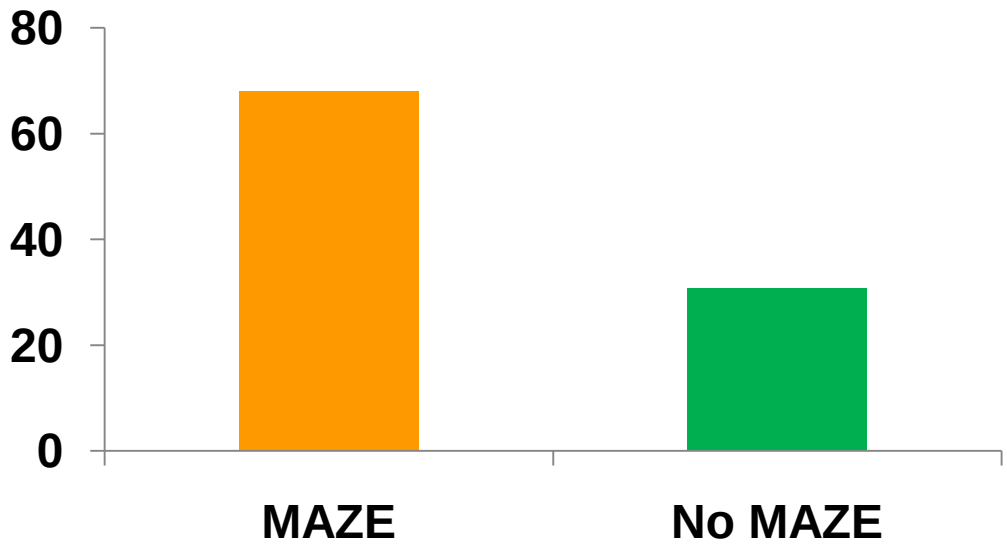
Procedure related complications in patients with and without MVR

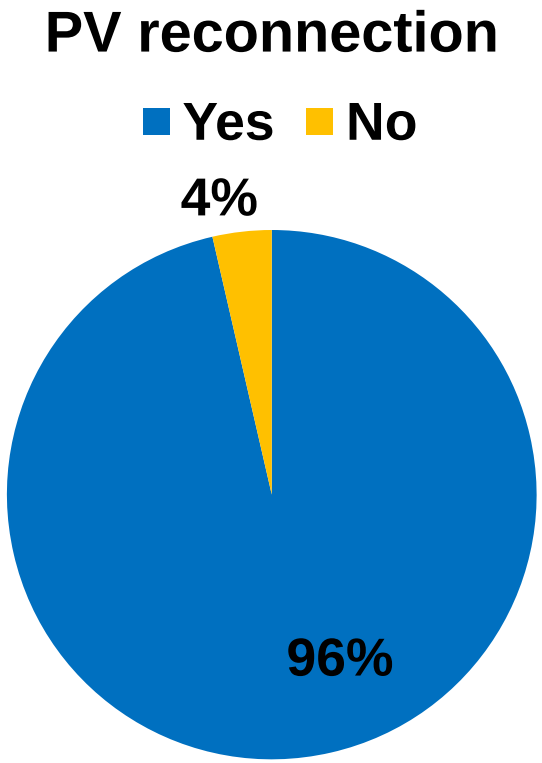
Parameter	No MVR (n = 162)	MVR (n = 81)	p Value
Minor complications, %			0.20
Pericardial effusion, no intervention	1.2	0	
Major complications, %			0.52
Bleeding requiring transfusion	0.6	1.2	
Hematoma requiring intervention	1.2	1.2	
Femoral pseudoaneurysm	0	1.2	
Tamponade	0.6	0	
Stroke	0	0	
Native or prosthetic valve damage	0	0	

Hussein et al. J Am Coll Cardiol 2011;58:596–602

Atrial Arrhythmias After Surgical Maze

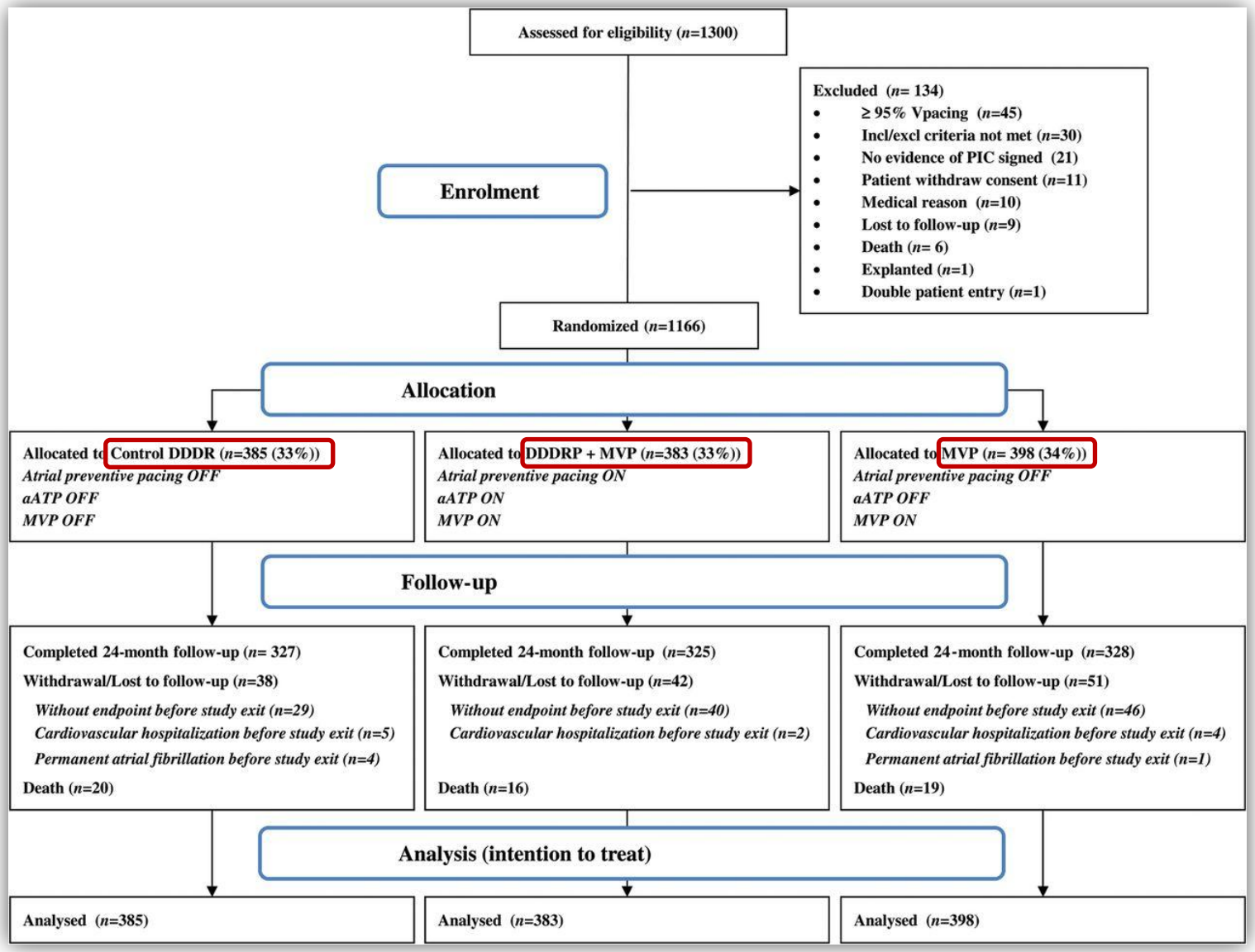
- **28/81 (34.6%) had a maze procedure.**





Hussein et al. J Am Coll Cardiol 2011;58:596–602

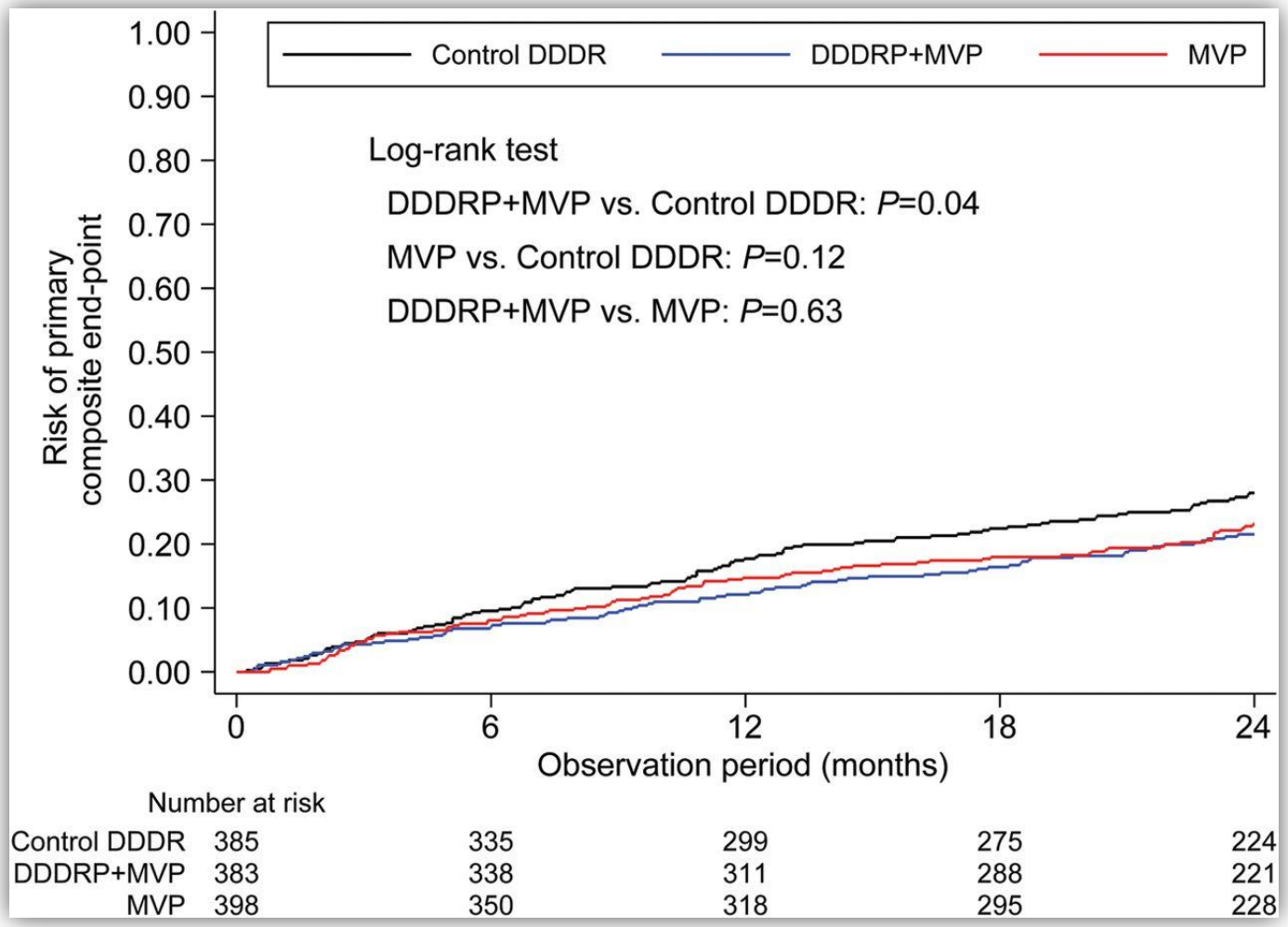
Pacing therapy for prevention of AF



Giuseppe Boriani et al. Eur Heart J 2014;35:2352-2362

Pacing therapy for prevention of AF

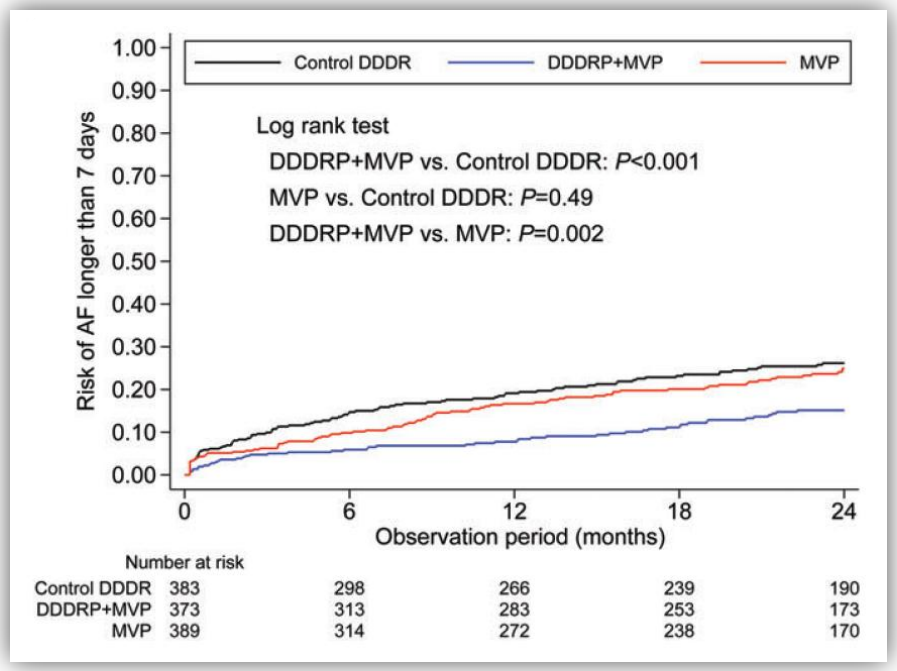
Risk of primary composite endpoint
(death, cardiovascular hospitalizations, or permanent AF).



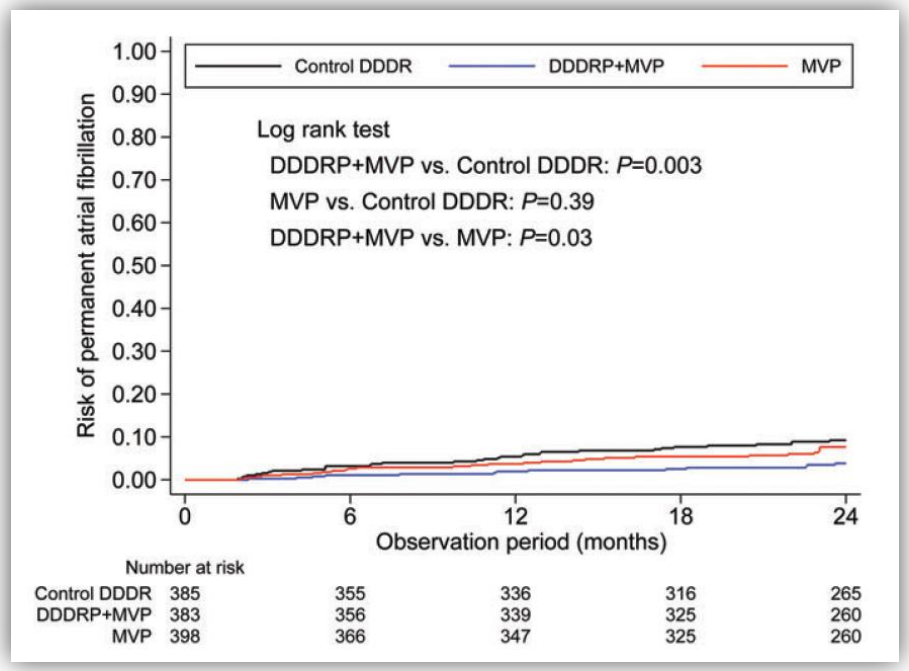
Giuseppe Boriani et al. Eur Heart J 2014;35:2352-2362

Pacing therapy for prevention of AF

Risk of AF recurrence > 7 days



Risk of AF permanent AF

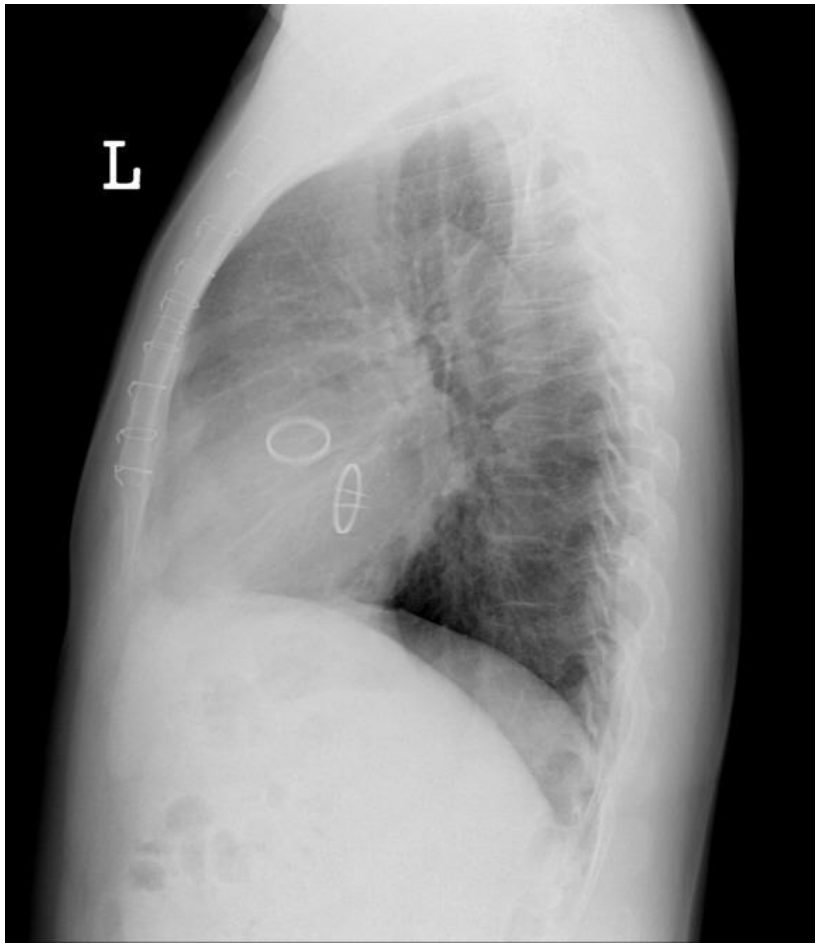


Giuseppe Boriani et al. Eur Heart J 2014;35:2352-2362

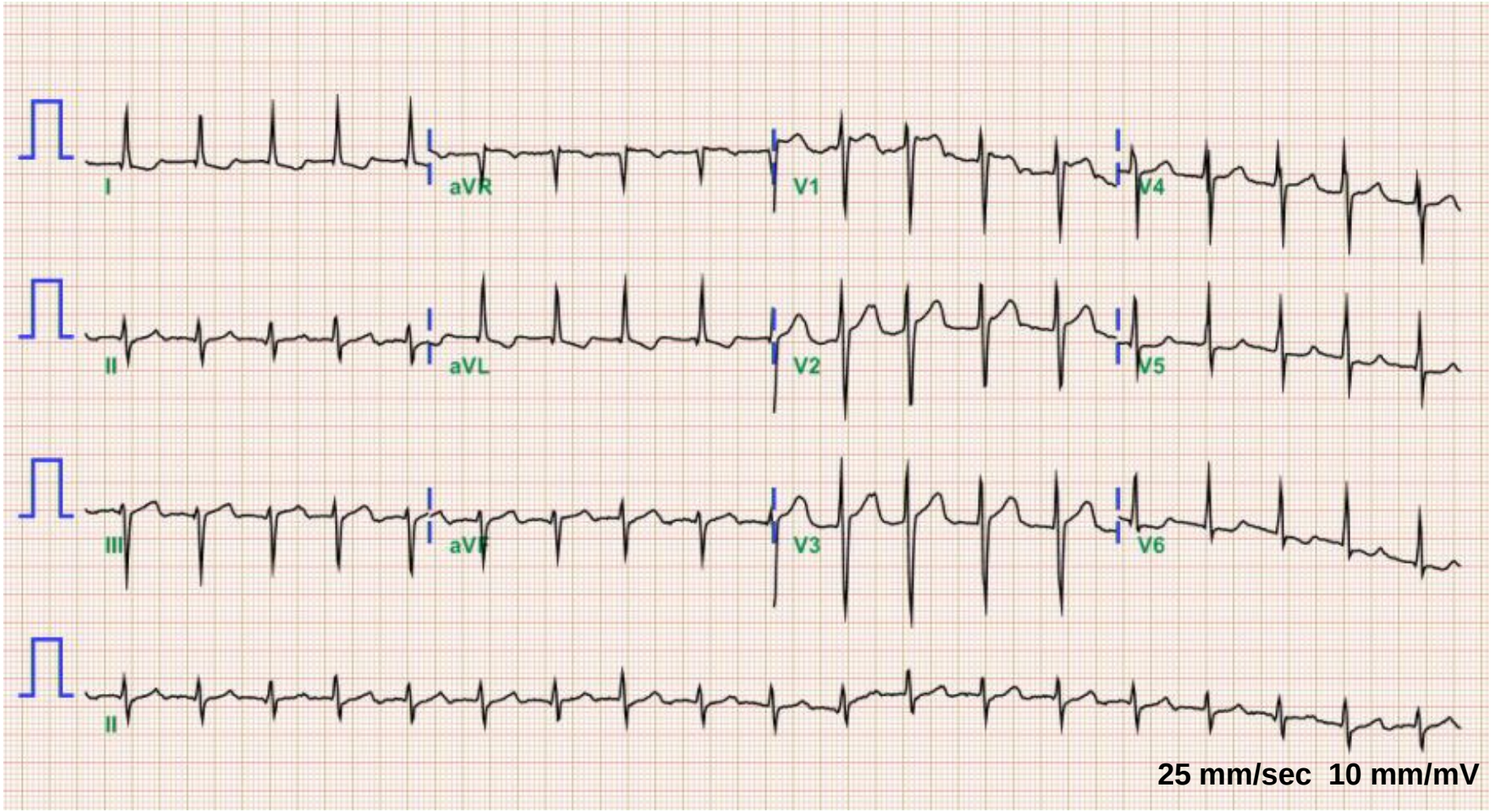
- 42-year-old male, 171 cm / 80 kg
- Chief complaint
  - Chest fluttering
- Past history
  - s/p AVR for AR in 1990
  - s/p MVR and MAZE for severe MS and AF in Mar 2012
  - Cerebral infarction ➔ thrombolysis in April 2013
  - 3 times of DC cardioversion for recurrent AFL

- Lab
  - BUN/Cr 13.7/0.85 mg/dL, AST/ALT 26/28 IU/L
  - fT4 1.24 ng/dL, TSH 3.19 uIU/mL
- TTE
  - LVEF= 57%, LA=47 mm

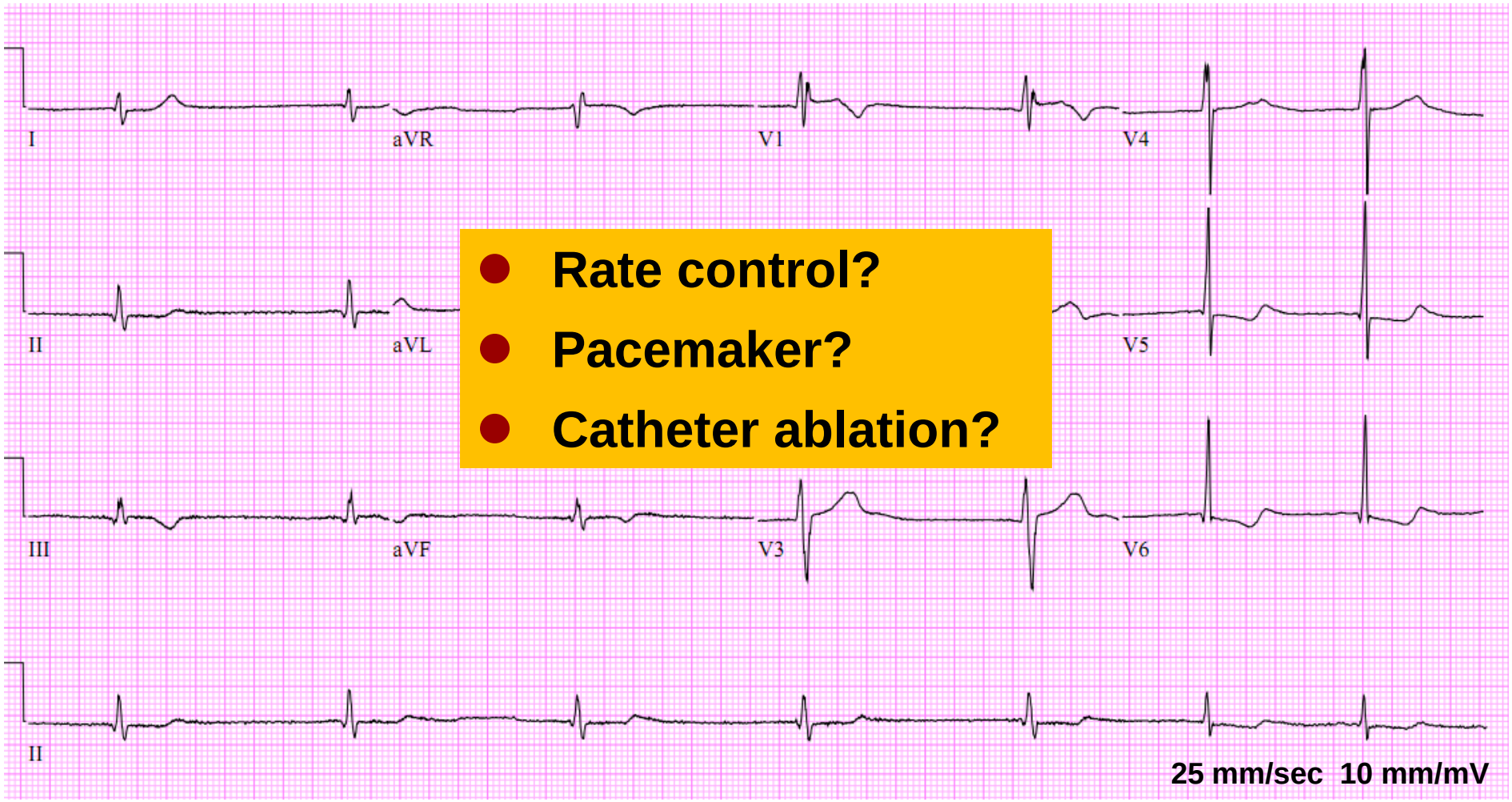
Chest PA and Lat



ECG at ER

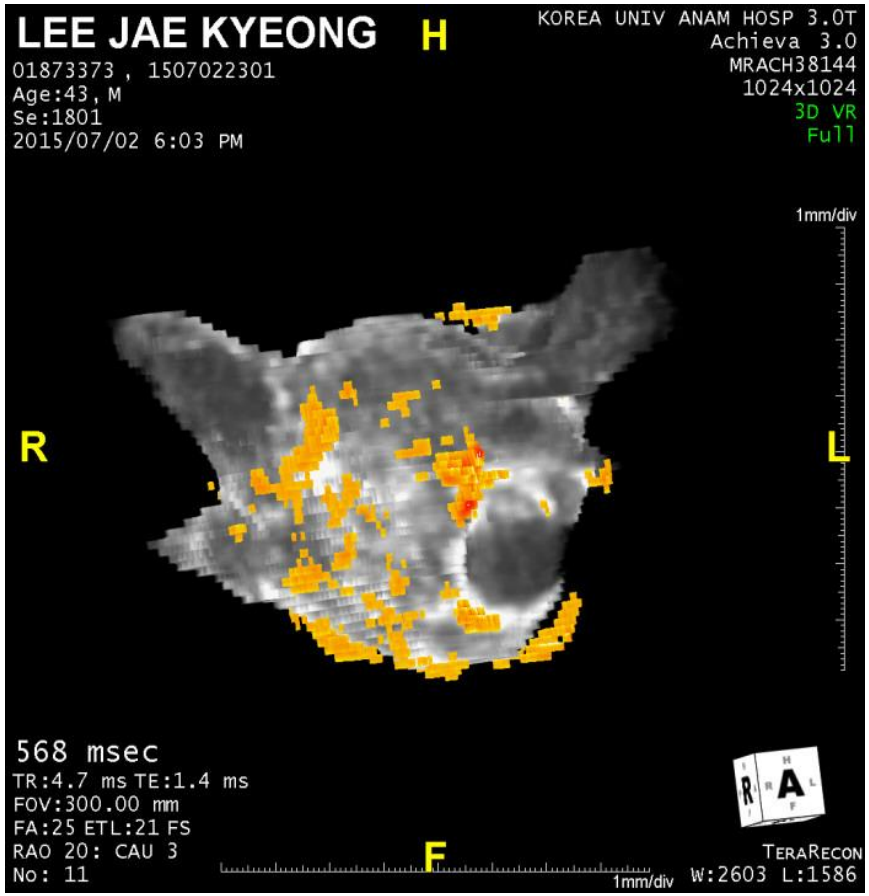


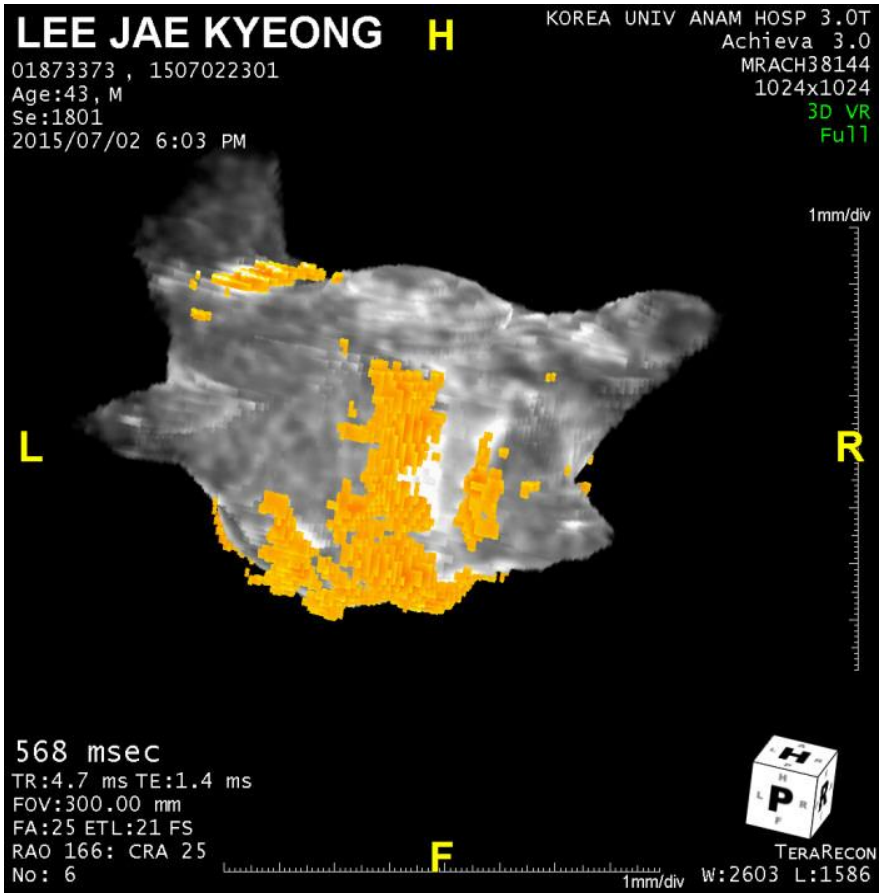
F/U ECG after CV



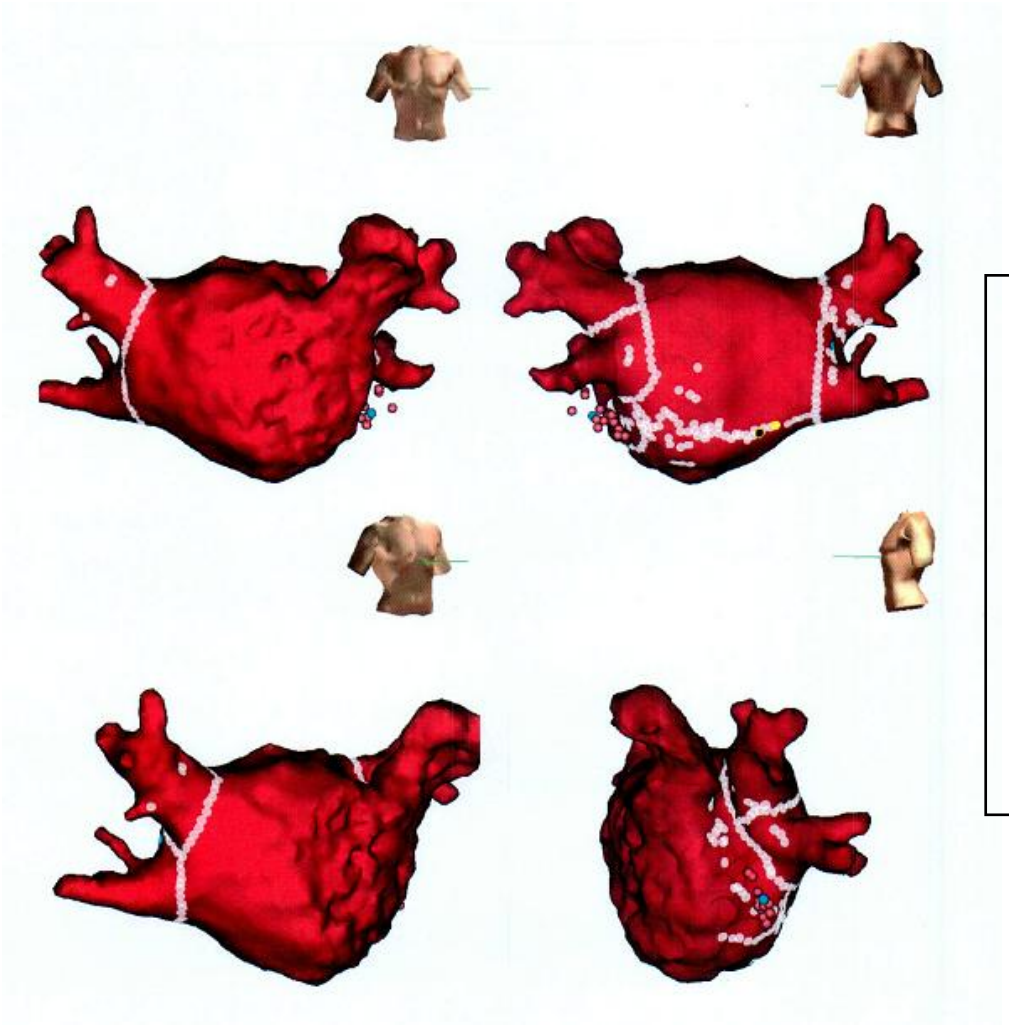
- Rate control?
- Pacemaker?
- Catheter ablation?

Cardiac MRI with LGE





Catheter ablation for AF/AFL in Mar 2015

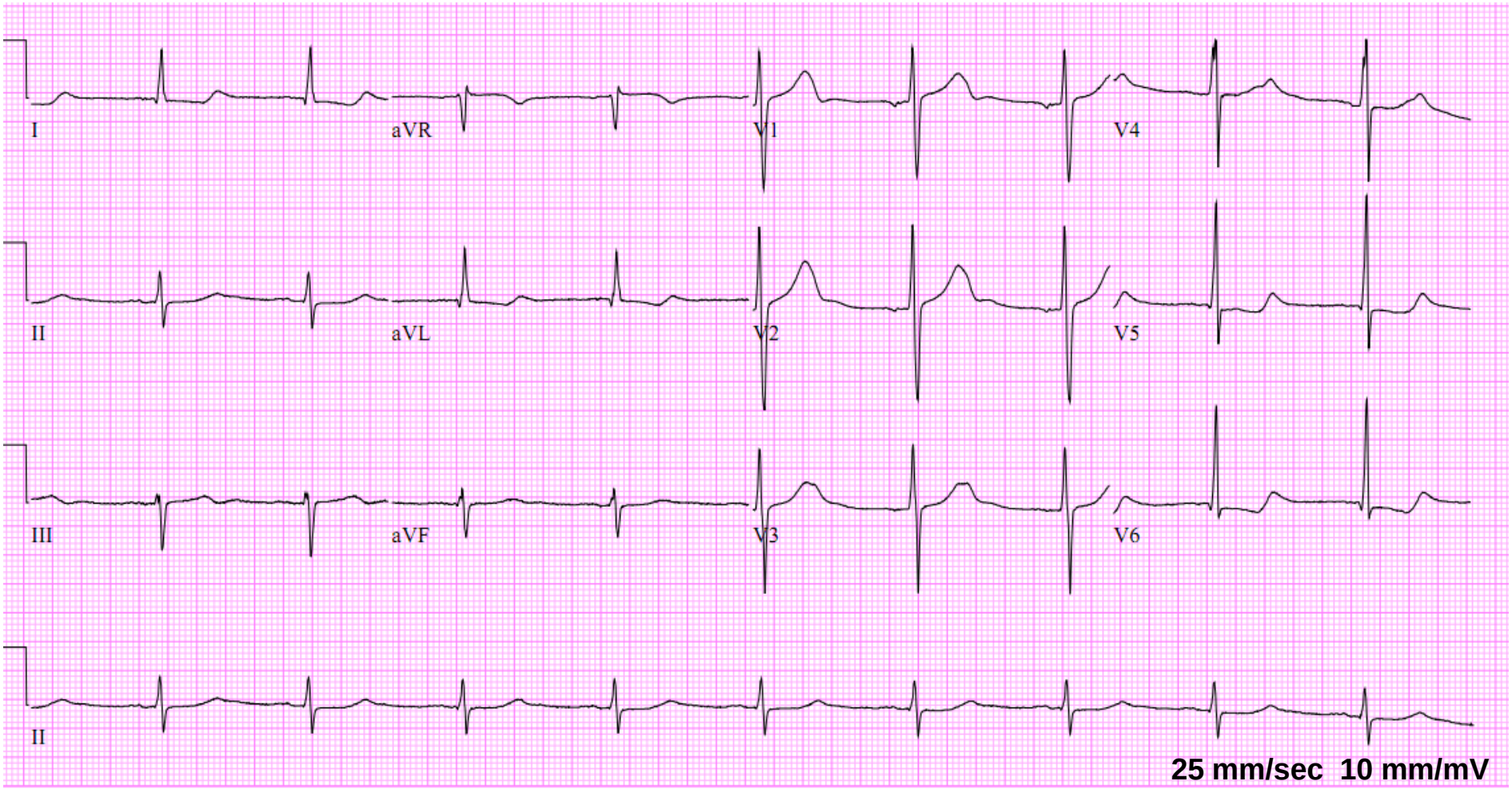


- 4 PV reconnection (+)

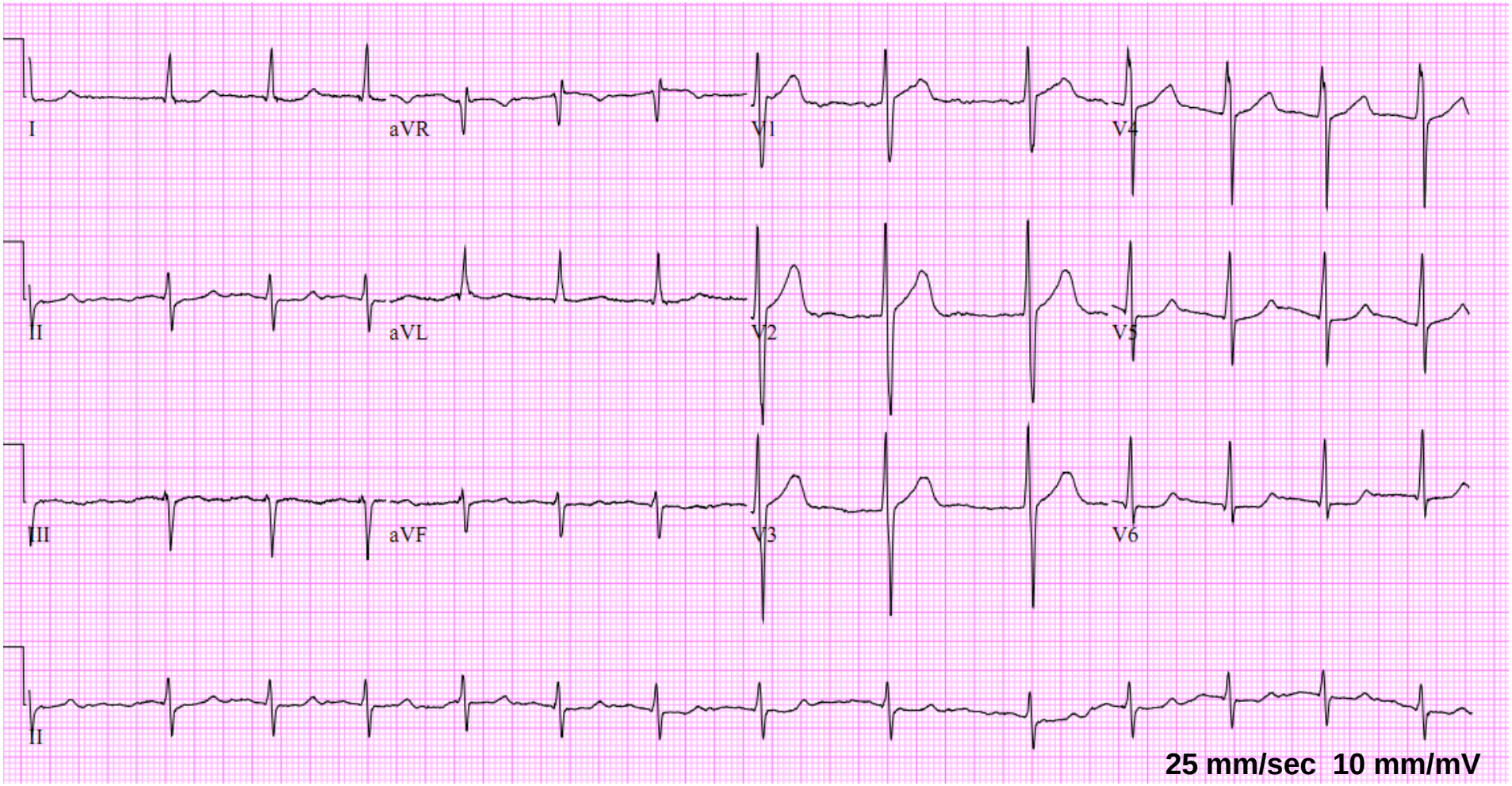
  ➔ PV isolation

- AT1: terminated by CTI
- AT2: terminated by PMI

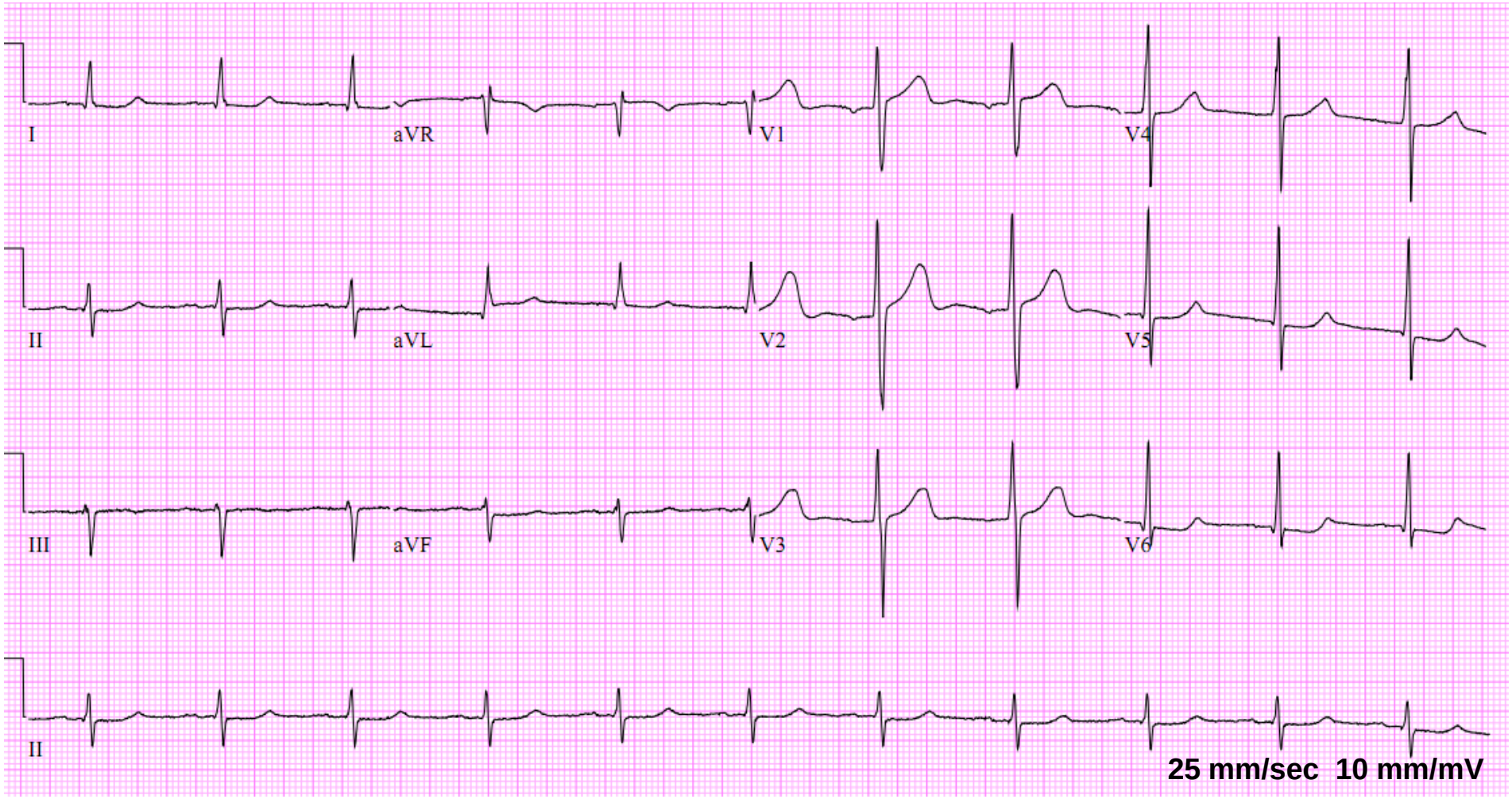
ECG after RFCA



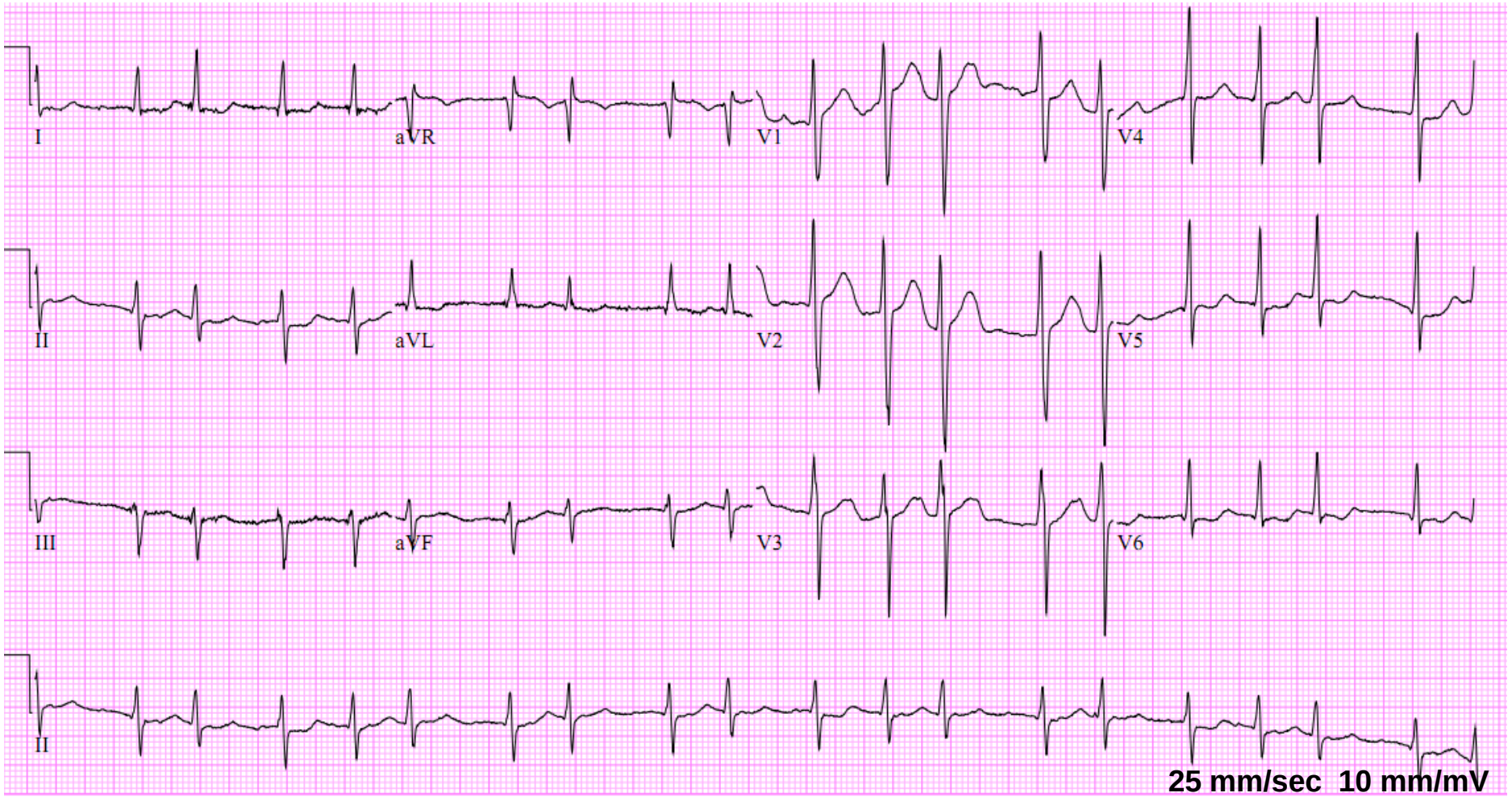
F/U ECG, 1 month later



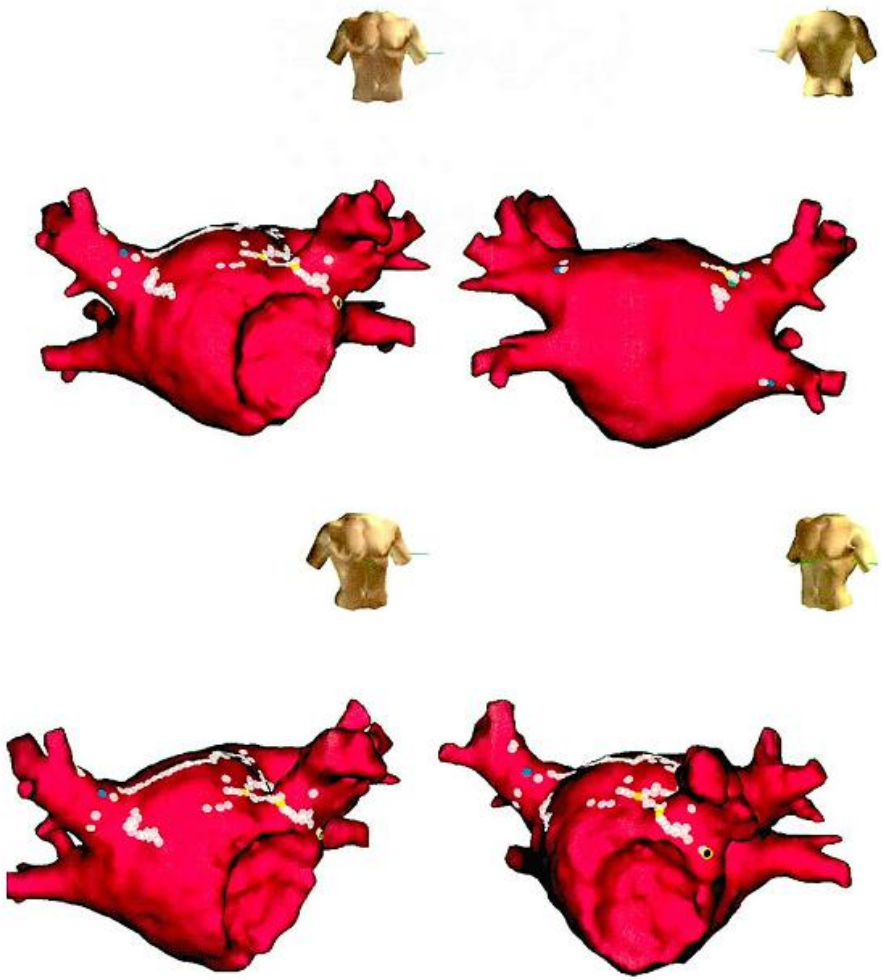
After CV



F/U ECG, 3 months later



Catheter ablation for AF/AFL in July 2015

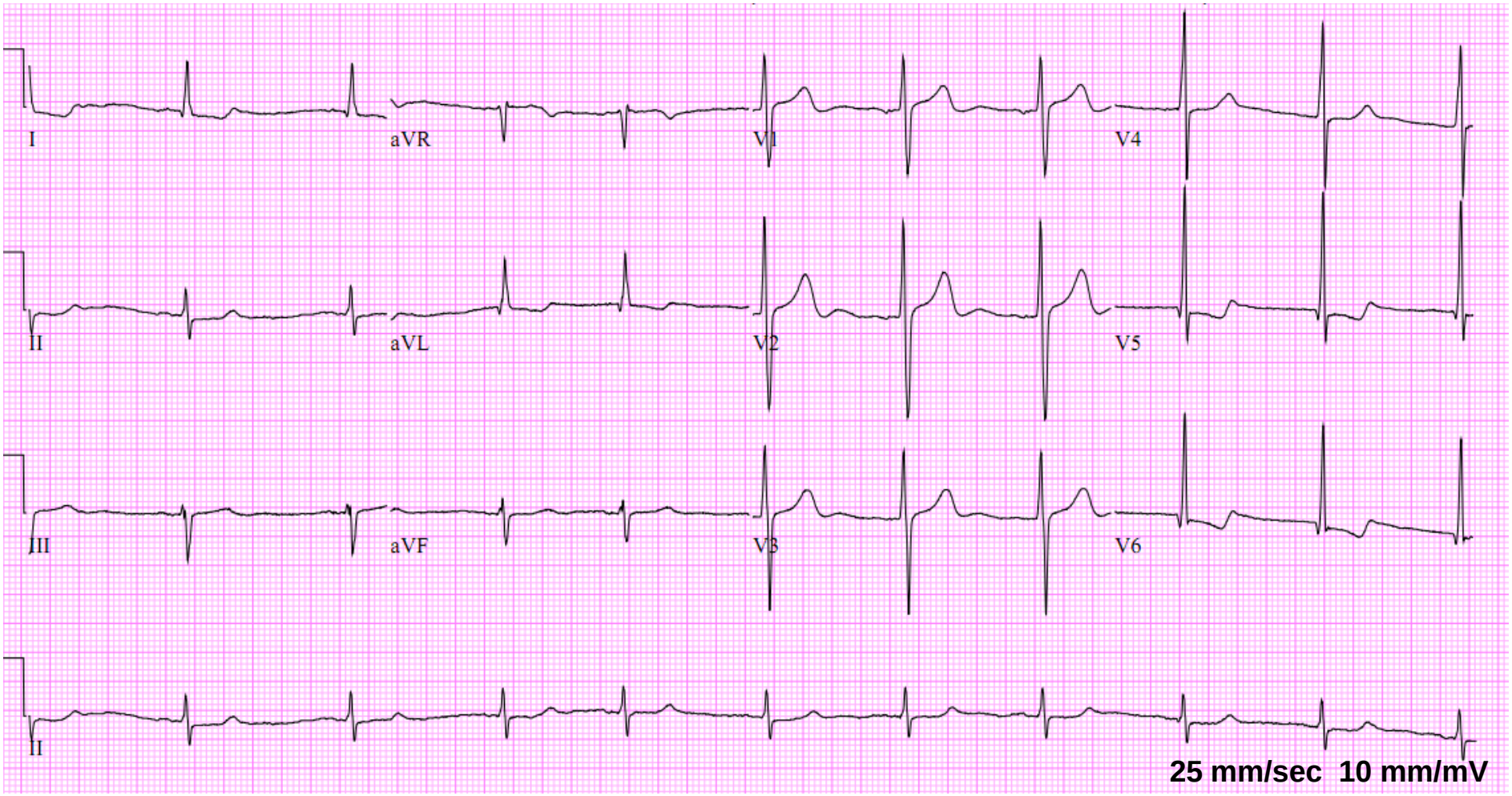


- 4 PV reconnection (+)

  ➔ Segmental ablation

- CTI & PMI: BDB (+)
- AT 1: terminated by roof line
- AT 2: terminated by LAA base ablation

9 months after redo ablation, off AAD



Conclusion

Sinus rhythm offers no benefit over AF?
➔ Incorrect!

Pursuit of effective treatments to maintain sinus rhythm should not be abandoned!

감사합니다.

Rebuttal

KSC April 2016

Debate: Valvular AF

Jaemin Shim, MD, PhD

Arrhythmia Center,

Korea University Anam Hospital, Seoul, Korea

KOREA UNIVERSITY MEDICAL CENTER

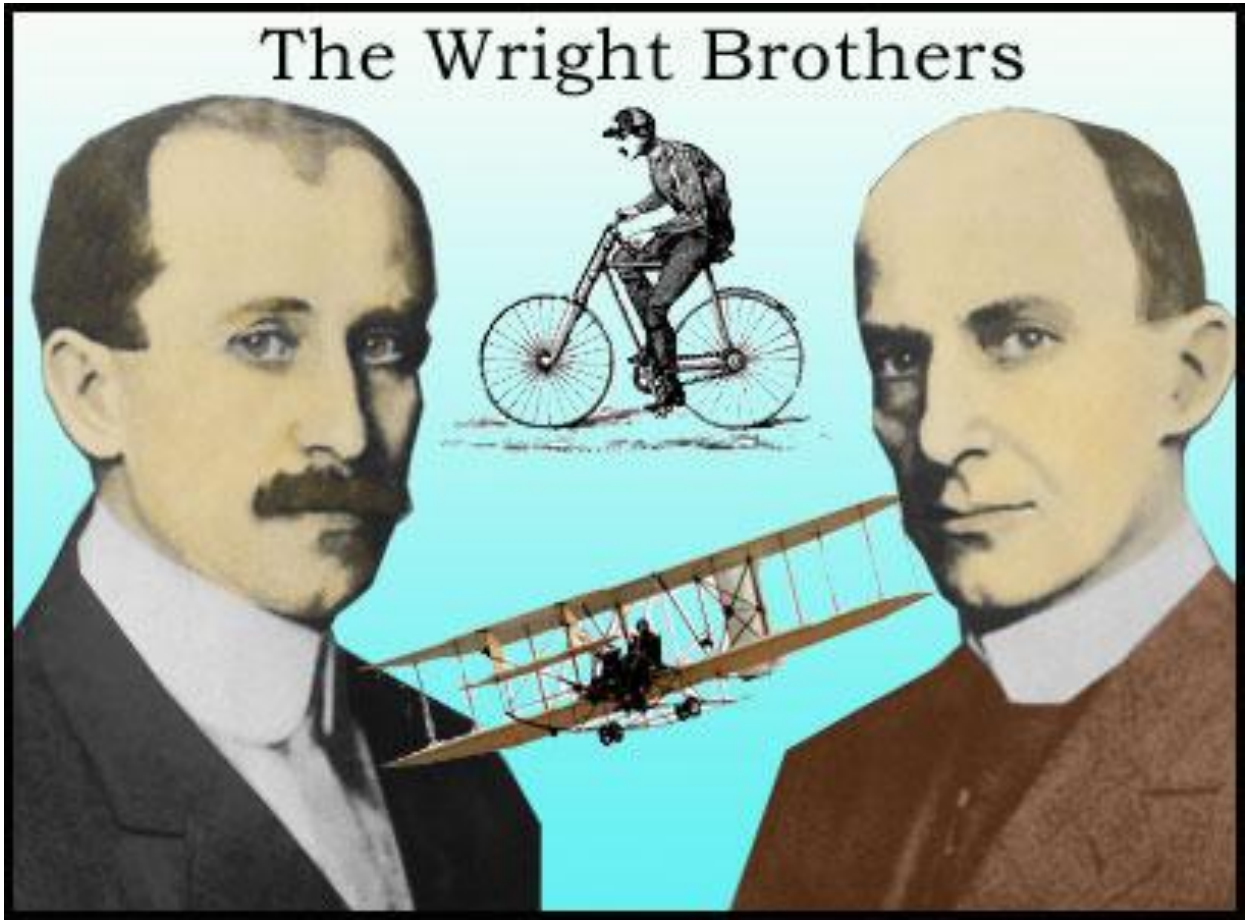
KOREA UNIVERSITY MEDICAL CENTER

우리가 RCT를 대하는 자세

- Paper를 찾아본다.
- Abstract부터 읽기 시작한다.
- 다 건너뛰고 Conclusion만 본다.
- 진리라고 생각한다.

My final thoughts

- Currently available evidence for rhythm vs. rate control: RCTs using AAD or CV (AAD/CV vs. rate control)
- Established clinical benefits of rhythm control: symptoms, exercise tolerance, hemodynamics, LV function, and quality of life.
- We need more data on ablation (catheter or surgical)
- Effective and well-tolerated AF therapies may reduce mortality and the risk of stroke.



"If you don't go further than your front yard fence, you will discover nothing."