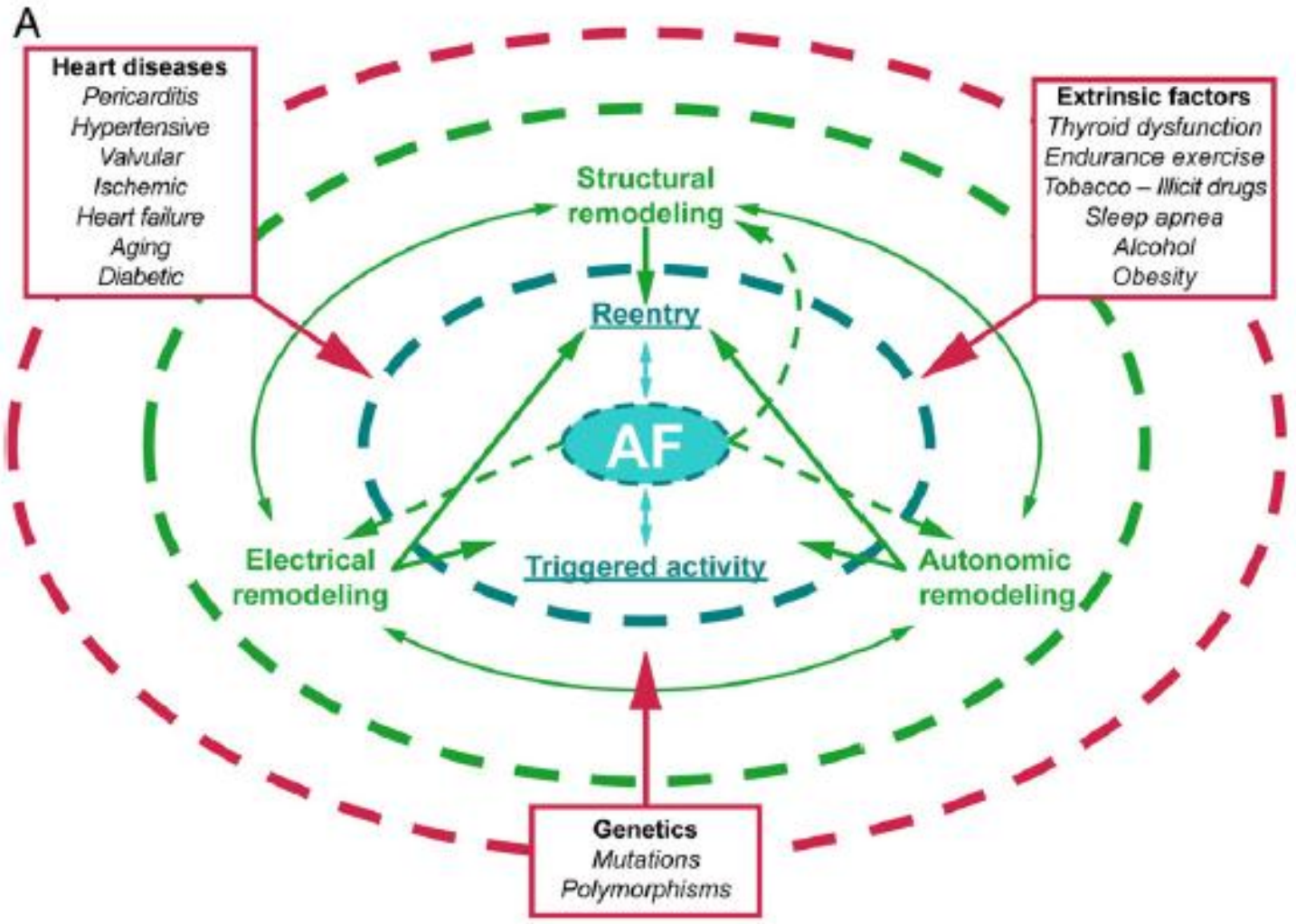
"karşıt görüş"

"Atriyal fibrilasyonun doğal seyrini durdurmak için erken dönemde ablasyon gerekir "

Özgür Aslan
Dokuz Eylül Üniversitesi Tıp Fakültesi
Kardiyoloji A.D.
İzmir

AF Zirvesi 2013 , K.K.T.C

- AF için "erken evre" nedir ?
- Atriyumun yapısal değişimi ve AF'nin kalıcılaşmasındaki rolü?
- AF ablasyonunda hedef ne ?
- Hedefe ulaşılabiliyor mu ?
- Hedefe ulaşmak için yapılanlar (teknik farklar)?
  - Paroksismal
  - Persistan-permanent
- Nüks kimlerde çok ?
- "erken evre"de yapılan ablasyonun ilerlemeyi önlediğini gösteren kanıt var mı ?
  - Fibrozis yükü çalışmaları
  - LA boyutuna bakan çalışmalar
  - İnme riskine bakan çalışmalar
- Yeni kavramsal sınıflama gereksinimi ?



Camm et al

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QUARTERLY FOCUS ISSUE: HEART RHYTHM DISORDERS

Progression From Paroxysmal to Persistent Atrial Fibrillation

Clinical Correlates and Prognosis

Cees B. de Vos, MD, Ron Pisters, MD, Robby Nieuwlaat, PhD, Martin H. Prins, MD, PhD, Robert G. Tieleman, MD, PhD, Robert-Jan S. Coelen, BSc, Antonius C. van den Heijkant, BSc, Maurits A. Allessie, MD, PhD, Harry J. G. M. Crijns, MD, PhD

Maastricht, the Netherlands

Objectives We investigated clinical correlates of atrial fibrillation (AF) progression and evaluated the prognosis of patients demonstrating AF progression in a large population.

Background Progression of paroxysmal AF to more sustained forms is frequently seen. However, not all patients will progress to persistent AF.

Methods We included 1,219 patients with paroxysmal AF who participated in the Euro Heart Survey on AF and had a known rhythm status at follow-up. Patients who experienced AF progression after 1 year of follow-up were identified.

Results Progression of AF occurred in 178 (15%) patients. Multivariate analysis showed that heart failure, age, previous transient ischemic attack or stroke, chronic obstructive pulmonary disease, and hypertension were the only inde

A substantial number of patients progress to sustained AF within 1 year. The clinical outcome of these patients regarding hospital admissions and major adverse cardiovascular events was worse compared with patients demonstrating no AF progression. Factors known to cause atrial structural remodeling (age and underlying heart disease) were independent predictors of AF progression. The HATCH score may help to identify patients who are likely to progress to sustained forms of AF in the near future. (J Am Coll Cardiol 2010;55:725–31) © 2010 by the American College of Cardiology Foundation

Table 3 Characteristics at 1-Year Follow-up

	All Patients	No AF Progression	AF Progression	p Value
n	1,219	1,041 (85%)	178 (15%)	
Symptoms	366 (32%)	280 (29%)	86 (52%)	<0.001
Death	22 (2%)	16 (2%)	6 (3%)	0.118
Type of AF				
First detected	107 (9%)	107 (10%)	0	
Paroxysmal	860 (71%)	860 (83%)	0	
Persistent	81 (7%)	0	81 (46%)	
Permanent	97 (8%)	0	97 (54%)	
Considered cured	74 (5%)	74 (7%)	0	

Table 4 Independent Predictors of AF Progression Resulting From Multivariate Logistic Regression Analysis

	OR	95% CI	Regression Coefficient	p Value	Score
History of heart failure	2.22	1.54–3.22	0.80	<0.001	2
Hypertension	1.52	1.05–2.20	0.42	0.024	1
Chronic obstructive pulmonary disease	1.51	0.95–2.39	0.41	0.088	1
History of stroke or TIA	2.02	1.24–3.31	0.71	0.007	2
Age >75 yrs	1.57	1.07–2.30	0.45	0.024	1

CI = confidence interval; OR = odds ratio; other abbreviations as in Table 1.

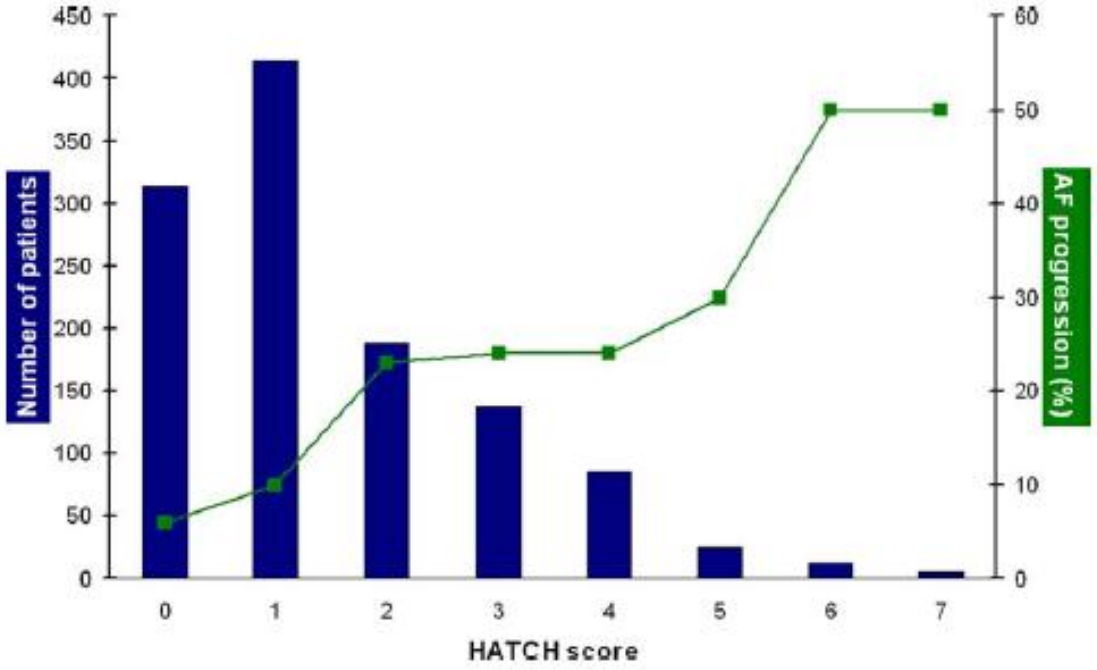

Figure 1 Prevalence of the Different HATCH Scores and Incidence of Progression

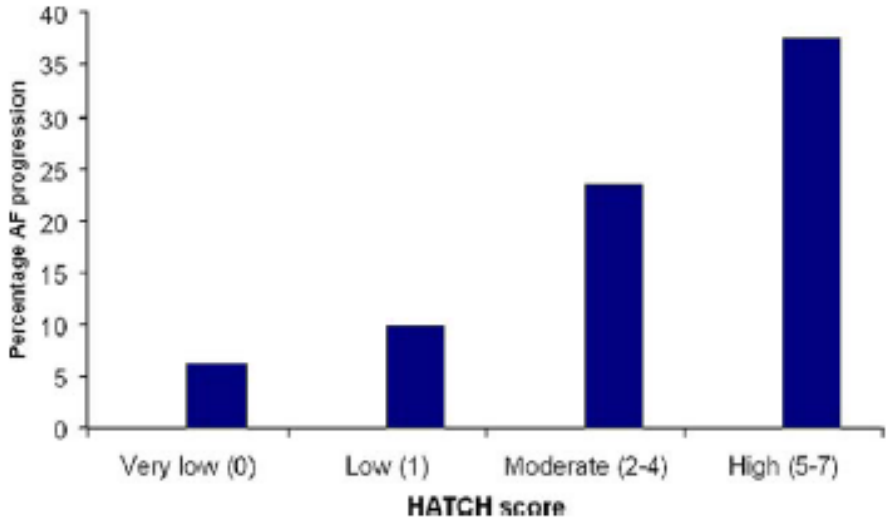

Figure 3 Incidence of AF Progression

Echocardiographic predictors of frequency of paroxysmal atrial fibrillation (AF) and its progression to persistent AF in hypertensive patients with paroxysmal AF: Results from the Japanese Rhythm Management Trial II for Atrial Fibrillation (J-RHYTHM II Study) Takeki Suzuki, Tsutomu Yamazaki, Satoshi Ogawa, Ryozo Nagai, Takeshi Yamashita, J-RHYTHM II Investigators . ***Heart Rhythm 2011;8: 1831-36***

Background

- Little is known about associations among echocardiographic variables, frequency of atrial fibrillation (AF), and progression from paroxysmal to persistent AF.

Objective

- The purpose of this study was to investigate echocardiographic predictors of frequency of paroxysmal AF and its progression to persistent AF in hypertensive patients with paroxysmal AF.

Methods

- We used data from 286 patients with paroxysmal AF and hypertension in the Japanese Rhythm Management Trial II for Atrial Fibrillation (J-RHYTHM II Study). Echocardiographic evaluation was performed at baseline. Endpoints were (1) percent of AF days measured daily by transtelephonic monitoring over 1 year and (2) development of persistent AF, defined as incidence of AF lasting for longer than 7 days and/or need for electrical cardioversion. Univariate and multivariate linear regression analysis was performed to evaluate the association between echocardiographic variables and percent of AF days. Cox proportional hazards analysis was used to examine the association between echocardiographic variables and development of persistent AF.

Results

- Among echocardiographic variables, **increased left atrial dimension (LAD) was associated with more AF days and development of persistent AF: a 10-mm increase in LAD was associated with a 6.5% increase in AF days** (95% confidence interval 2.7%–10.3%) and **an 84% increased risk of developing persistent AF** (hazard ratio 1.84, 95% confidence interval 1.28–2.67). These associations remained significant after adjustment for age, sex, and other potential confounding factors.

Conclusion

- Increased LAD is associated with more AF days and progression from paroxysmal to persistent AF in patients with paroxysmal AF and hypertension. Increased LAD may be a good echocardiographic predictor of AF frequency and progression.

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Imaging

ECHOCARDIOGRAPHIC PREDICTORS FOR PROGRESSION TO PERSISTENT OR PERMANENT ATRIAL FIRBRILLATION IN PATIENTS WITH PAROXYSMAL ATRIAL FIBRILLATION: E6P STUDY

Poster Contributions
Poster Sessions, Expo North
Sunday, March 10, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Imaging: Echo: Atrial Imaging
Abstract Category: 18. Imaging: Echo
Presentation Number: 1226-332

Authors: *Yeonyee Elizabeth Yoon, Sung-Ai Kim, Kyoung-Ha Park, Seong Hwan Kim, Jae-Hyeong Park, Seung-Pyo Lee, Hyung-Kwan Kim, Yong-Jin Kim, Dae-Won Sohn, Goo-Yeong Cho, Seoul National University Bundang Hospital, Seongnam, South Korea*

Background: Paroxysmal atrial fibrillation (AF) frequently progresses to persistent/permanent AF. We investigated echocardiographic predictors of AF progression.

Methods: We conducted a multicenter,prospective, observational study and included 313 paroxysmal AF patients with 2D speckle tracking

Results: Progression of AF to persistent/permanent stage occurred in 52 (17%) patients (median follow-up, 26 months). LA diameter, volume index, expansion index, active emptying fraction and LA stiffness index were significant predictors for AF progression. LA diameter ≥40mm and volume index ≥34.3ml/m2 were associated with hazard increase for AF progression (HR, 2.0 and 2.6; p=0.016 and 0.001). LA stiffness index ≥0.34 was associated 2.8-fold hazard increase for AF progression (HR, 2.8; p=0.001). In a subgroup with a LA volume index <34.3ml/m2, patients with LA stiffness index ≥0.34 had significantly worse event-free survival (p=0.006). However, in a subgroup with a LA volume index ≥34.3ml/m2, event-free survival was not significantly different by LA stiffness index (p=0.281).

Conclusions: Echocardiographic measure of LA diameter, volume, and mechanical function, including LA stiffness were associated with AF progression. LA stiffness could provide additional prognostic information in patients with paroxysmal AF but with normal LA volume.

- AF için "erken evre" nedir ?
  - "Paroksismal"
  - HATCH skoru düşük
  - Sol atriyum küçük ("remodelling")
  - Fibrozis yok / az !

  - *AF süresi ?*

AF Ablasyonu

- **Hedef**
  - **Tetikleyiciler**
    - Pulmoner venler
      - *Paroksismal AF*
      - En sık tetikleyici kaynağı
      - Diğer tetikleyicilerin bir kısmına komşu
    - Otonomik gangliyonlar
    - Diğer (VCS, CS os, vb.)
  - **Aritmojenik substrat**
    - Yeniden biçimlenmiş atriyum dokusu (antrum)
      - *Persistan – Uzun süreli AF*
      - CFAE ??

AF Ablasyonu – Hangi durumda hangi teknik ?

- Paroksismal AF …
  - Antral PV izolasyonu
    - RF Ablasyon (3D görüntüleme kılavuzluğu)
      - İrrigated tip
      - PVAC
    - Kriyoablasyon
      - Kriyo kateter
      - Kriyobalon
    - Lazer ablasyon
    - Diğer …
- Persistan AF … *(Permanent ???)*
  - PV izolasyonu + lineer lezyonlar + CFAE-Ab ?
    - RF
      - Yeni teknolojiler ("contact force", "ECİ", vb)
    - Kriyobalon + RF ?

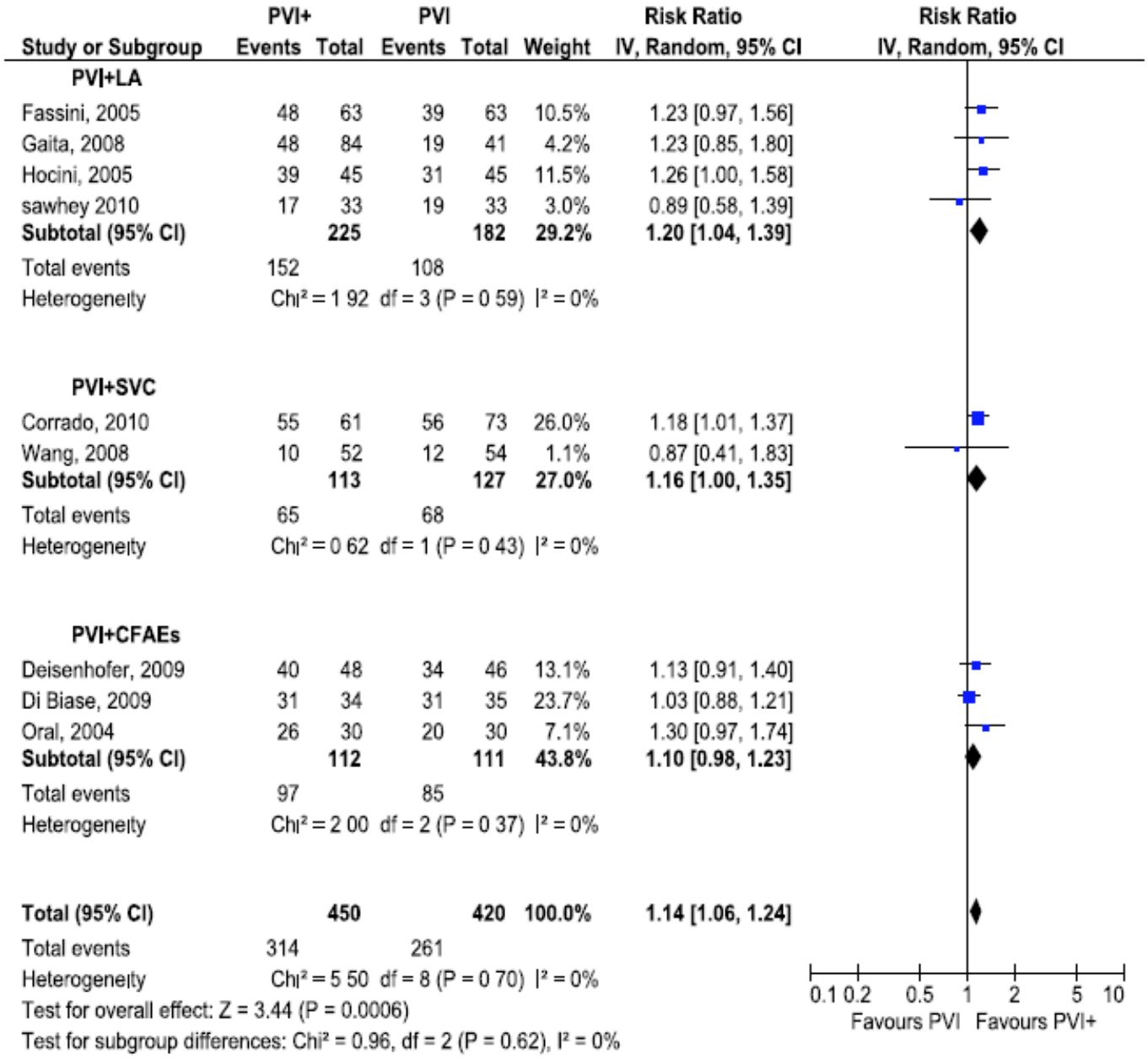

Fig. 3 Success rate in the RCTs comparing PVI plus additional atrial ablation with PVI alone in patients with paroxysmal AF. *CFAE* complex fractionated atrial electrogram, *LA* left atrium, *PVI* pulmonary vein isolation, *SVC* superior vena cava

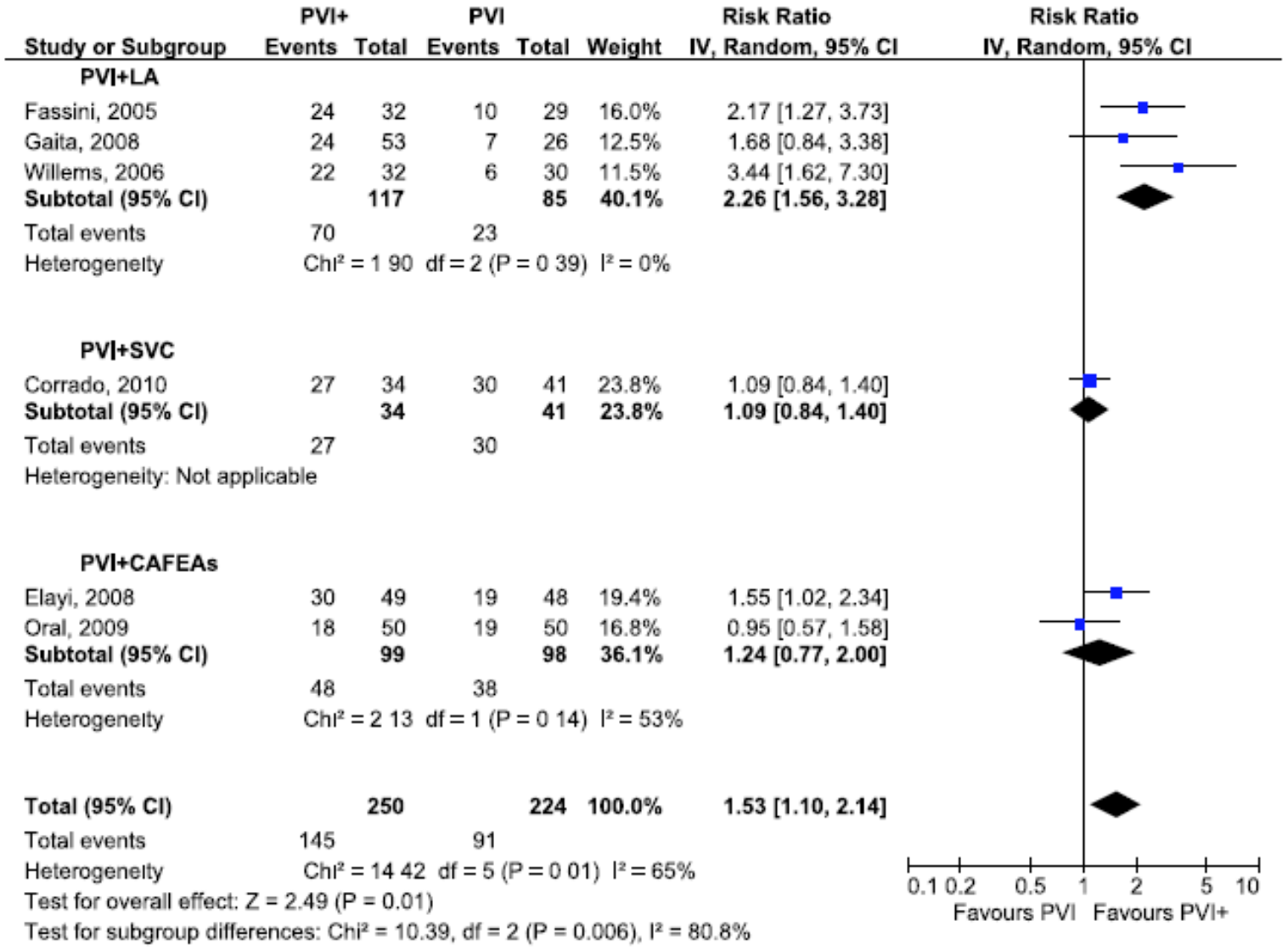

Fig. 4 Success rate in the RCTs comparing PVI plus additional atrial ablation with PVI alone in patients with persistent/permanent AF. *CFAE* complex fractionated atrial electrogram, *LA* left atrium, *PVI* pulmonary vein isolation, *SVC* superior vena cava

AF Ablasyonu

TABLE 2: CONSENSUS INDICATIONS FOR CATHETER AND SURGICAL ABLATION of AF

	CLASS	LEVEL
INDICATIONS FOR CATHETER ABLATION of AF		
Symptomatic AF refractory or intolerant to at least one Class 1 or 3 antiarrhythmic medication		
Paroxysmal: Catheter ablation is recommended*	I	A
Persistent: Catheter ablation is reasonable	IIa	B
Longstanding Persistent: Catheter ablation may be considered	IIb	B
Symptomatic AF prior to initiation of antiarrhythmic drug therapy with a Class 1 or 3 antiarrhythmic agent		
Paroxysmal: Catheter ablation is reasonable	IIa	B
Persistent: Catheter ablation may be considered	IIb	C
Longstanding Persistent: Catheter ablation may be considered	IIb	C

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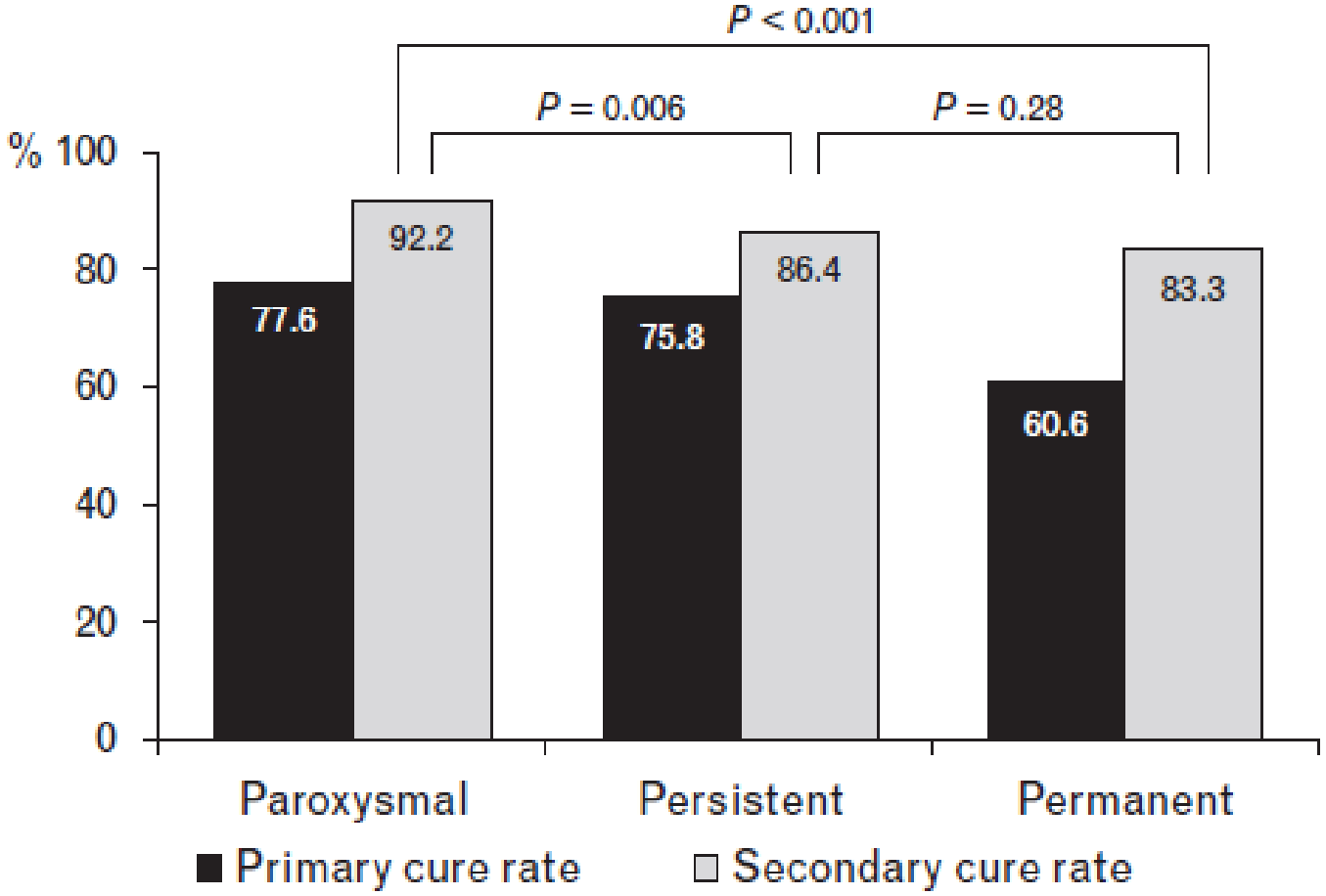
Europace (2012) **14**, 528–606
doi:10.1093/europace/eus027

HRS/EHRA/ECAS EXPERT CONSENSUS STATEMENT



Primary and secondary cure rates in 1404 patients (4 institutions and 12 different operators) undergoing pulmonary vein antrum isolation guided by a circular mapping catheter and intracardiac echocardiography. Adapted from Bhargava *et al.*[2]

Long-Term Results of Catheter Ablation in Paroxysmal Atrial Fibrillation

Lessons From a 5-Year Follow-Up

Feifan Ouyang, MD*; Roland Tilz, MD*; Julian Chun, MD; Boris Schmidt, MD; Erik Wissner, MD; Thomas Zerm, MD; Kars Neven, MD; Bulent Köktürk, MD; Melanie Konstantinidou, MD; Andreas Metzner, MD; Alexander Fuernkranz, MD; Karl-Heinz Kuck, MD

Background—Paroxysmal atrial fibrillation (AF) naturally progresses toward chronic AF at an estimated rate of 15% to 30% over a 1- to 3-year period. Pulmonary vein (PV) isolation is increasingly performed for the treatment of drug-refractory paroxysmal AF. The long-term data on clinical outcome after circumferential PV isolation are limited.

Methods and Results—From 2003 to late 2004, 161 patients (121 men; age, 59.8±9.7 years) with symptomatic paroxysmal AF and normal left ventricular function underwent circumferential PV isolation guided by 3-dimensional mapping and double Lasso technique. Right-sided and left-sided continuous circular lesions encircling the ipsilateral PVs were placed with irrigated radiofrequency energy. The procedure end point was the absence of all PV spikes for at least 30 minutes after PV isolation verified by 2 Lasso catheters placed within the ipsilateral PVs. Sinus rhythm was present in 75 patients (46.6%) after the initial procedure during a median follow-up period of 4.8 years (0.33 to 5.5 years). A second procedure was performed in 66 and a third procedure in 12 patients. Recovered PV isolation conduction was observed in 62 of 66 patients (94.0%) during the second and in 8 of 12 patients (66.7%) during the third procedure. After a median of 1 (1 to 3) procedure, stable sinus rhythm was achieved in 128 of 161 patients (79.5%), whereas clinical improvement occurred in an additional 21 of 161 patients (13.0%) during a median follow-up of 4.6 years (0.33 to 5.5 years). Four patients in stable sinus rhythm died during follow-up. Progression toward chronic AF was observed in 4 patients (2.4%); however, only 2 patients reported symptoms.

Conclusion—In patients with paroxysmal AF and normal left ventricular function, circumferential PV isolation results in stable sinus rhythm in the majority of patients, and low incidence of chronic AF was observed after ablation during up to 5 years of follow-up. (***Circulation*. 2010;122:2368-2377.**)

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Long-Term Outcomes After Cryoballoon Pulmonary Vein Isolation

Results From a Prospective Study in 605 Patients

Jürgen Vogt, MD, Johannes Heintze, MD, Klaus J. Gutleben, MD, Bogdan Muntean, MD, Dieter Horstkotte, MD, PHD, Georg Nölker, MD

Bad Oeynhausen, Germany

Objectives The purpose of this study was to investigate long-term outcomes of freedom from atrial fibrillation (AF) after pulmonary vein (PV) isolation using cryoballoon ablation with balloon-size selection based on individual PV diameters.

Background Data are lacking on long-term outcomes from cryoablation and on the most effective balloon size.

Methods This was a prospective observational study involving 605 consecutively enrolled patients with symptomatic paroxysmal AF (n = 579) or persistent AF. Cryoballoon size was based on magnetic resonance imaging and/or conventional angiograms. Patients were followed up every 3 months during the first year after discharge and every 6 months in the second year. After 24 months, follow-up was on an outpatient basis with documented AF episodes recorded.

Results The PV isolation was achieved without touch-up in 91.1% of patients, using the smaller balloon in 26.7%, the larger balloon in 25.6%, and both balloons in 47.7% of patients. Follow-up data for >12 months (median 30 months; interquartile range 18 to 48 months) were available for 451 patients, 278 (61.6%) of whom were free of AF recurrence with no need for repeat procedures after the 3-month blanking period. Rates of freedom from AF after 1, 2, and 3 repeat procedures (using cryoballoon or radiofrequency ablation with similar success rates) were 74.9%, 76.2%, and 76.9%, respectively. Use of the smaller balloons or both balloons produced the highest rates of long-term freedom from AF. Phrenic nerve palsy occurred in 12 patients (2%), resolving within 3 to 9 months.

Conclusions Rates of long-term freedom from AF after cryoballoon ablation are similar to those reported for radiofrequency ablation. A choice between balloons may improve outcomes. (J Am Coll Cardiol 2013;61:1707–12) © 2013 by the American College of Cardiology Foundation

AF ablasyonu

- **"Başarısızlığın"potansiyel belirleyicileri**
  - **"Non-paroksismal AF"**
    - "Uzun süreli persistan AF"
  - Uyku-apne ve obezite
  - **Sol atriyum çapı / hacmi**
  - İlerlemiş yaş
  - HT
  - **Sol atriyumda fibrozis**

"Erken evre"de ablasyon için kanıt var mı ?

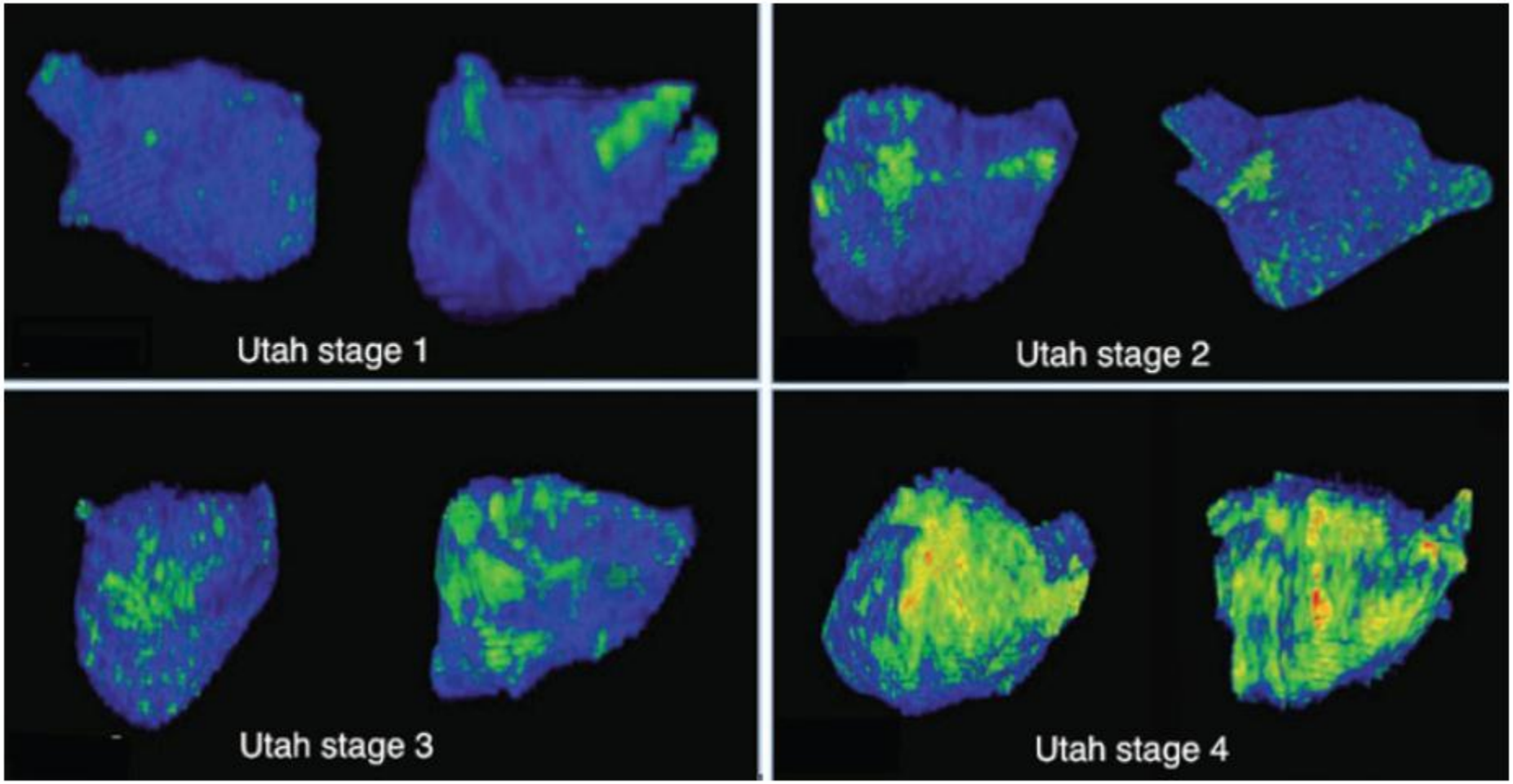

Figure 1. *A series of left atrial MRI 3D reconstructions displayed in the RAO and PA projections illustrating areas of fibrosis (bright green) across the 4 stages of fibrosis. Utah stage 1: <5% fibrosis, Utah stage 2: 5–20% fibrosis, Utah stage 3: 20–25% fibrosis, Utah stage 4: >35% fibrosis.*

Journal of Cardiovascular Electrophysiology *Vol. 22, No. 1, January 2011*

TABLE 1

Characteristics of 120 Patients with Preablation Quantification of Left Atrial Fibrosis

	Utah Stage 1 (<5%) (N = 10)	Utah Stage 2 (5–20%) (N = 71)	Utah Stage 3 (20–35%) (N = 23)	Utah Stage 4 (>35%) (N = 16)	P-value
Age (years)	58 ± 14	62 ± 13	67 ± 13	68 ± 8	ns
HTN (%)	50.0	53.5	56.5	43.8	ns
Diabetes (%)	10	7.0	21.7	6.3	ns
Coronary disease (%)	30	12.7	13.0	18.8	ns
CHF (%)	10	5.6	4.3	12.5	ns
LV EF (%)	57.2 ± 3.5	51.8 ± 9.5	49.7 ± 11.4	44.8 ± 13.2	ns
Paroxysmal/persistent AF (%)	60/40	45/55	35/65	25/75	ns

ns = nonsignificant.

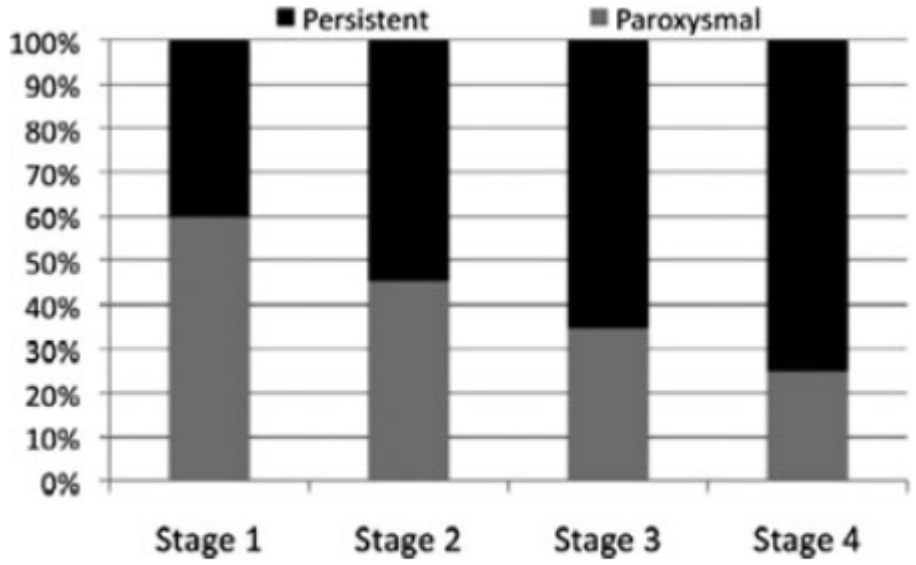

Figure 2. *Distribution of paroxysmal and persistent atrial fibrillation across the 4 stages of fibrosis. Note that each stage is a heterogeneous mix of both AF phenotypes with more predominant persistent AF in advanced stages.*

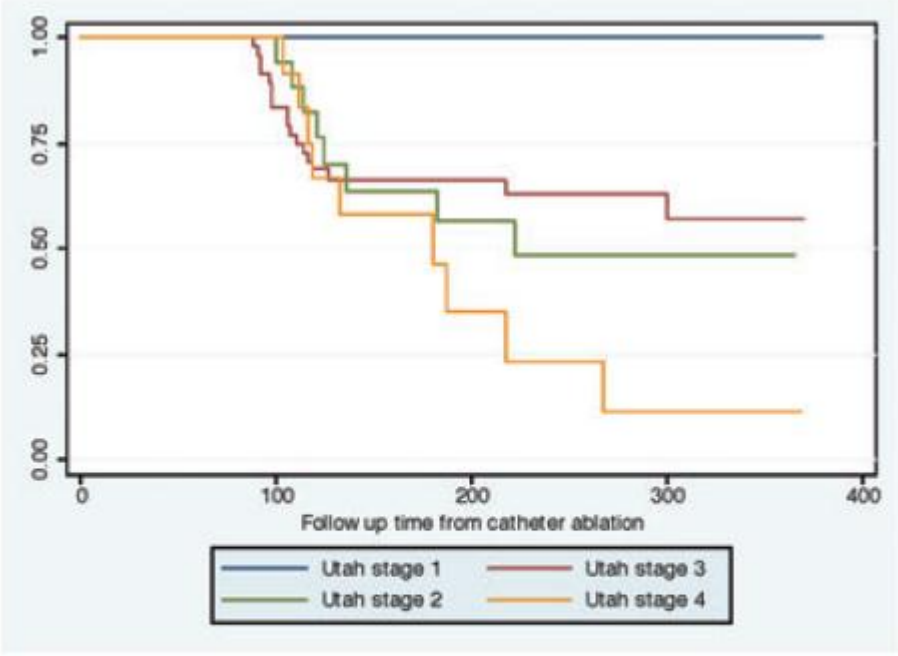

Figure 5. *Kaplan–Meier depicting AF recurrence stratified over the different stages of structural remodeling. Utah stage 1: <5% fibrosis, Utah stage 2: 5–20% fibrosis, Utah stage 3: 20–35% fibrosis, Utah stage 4: >35% fibrosis.*

"Erken evre"de ablasyon için kanıt var mı ?

Effect of Catheter Ablation on Progression of Paroxysmal Atrial Fibrillation

KRIT JONGNARANGSIN, M.D., ARISARA SUWANAGOOL, M.D., AMAN CHUGH, M.D., THOMAS CRAWFORD, M.D., ERIC GOOD, D.O., FRANK PELOSI, JR., M.D., FRANK BOGUN, M.D., HAKAN ORAL, M.D., and FRED MORADY, M.D.

From the Division of Cardiovascular Medicine, University of Michigan, Ann Arbor, Michigan, USA

Journal of Cardiovascular Electrophysiology *Vol. 23, No. 1, January 2012*

Table 2

Multivariate Predictors of Progression to Persistent AF

	OR	± 95% CI	P
Age >75 years	26	4–200	<0.01
AF duration ≥10 years	6.8	1.4–33.3	0.02
Diabetes mellitus	8.1	1.5–43.5	0.01

1. Ablasyondan sonra PAF'dan persistan AF'ye ilerleme oranı düşük
2. HATCH skoru yararlı olmayabilir (ort skor 2 !)

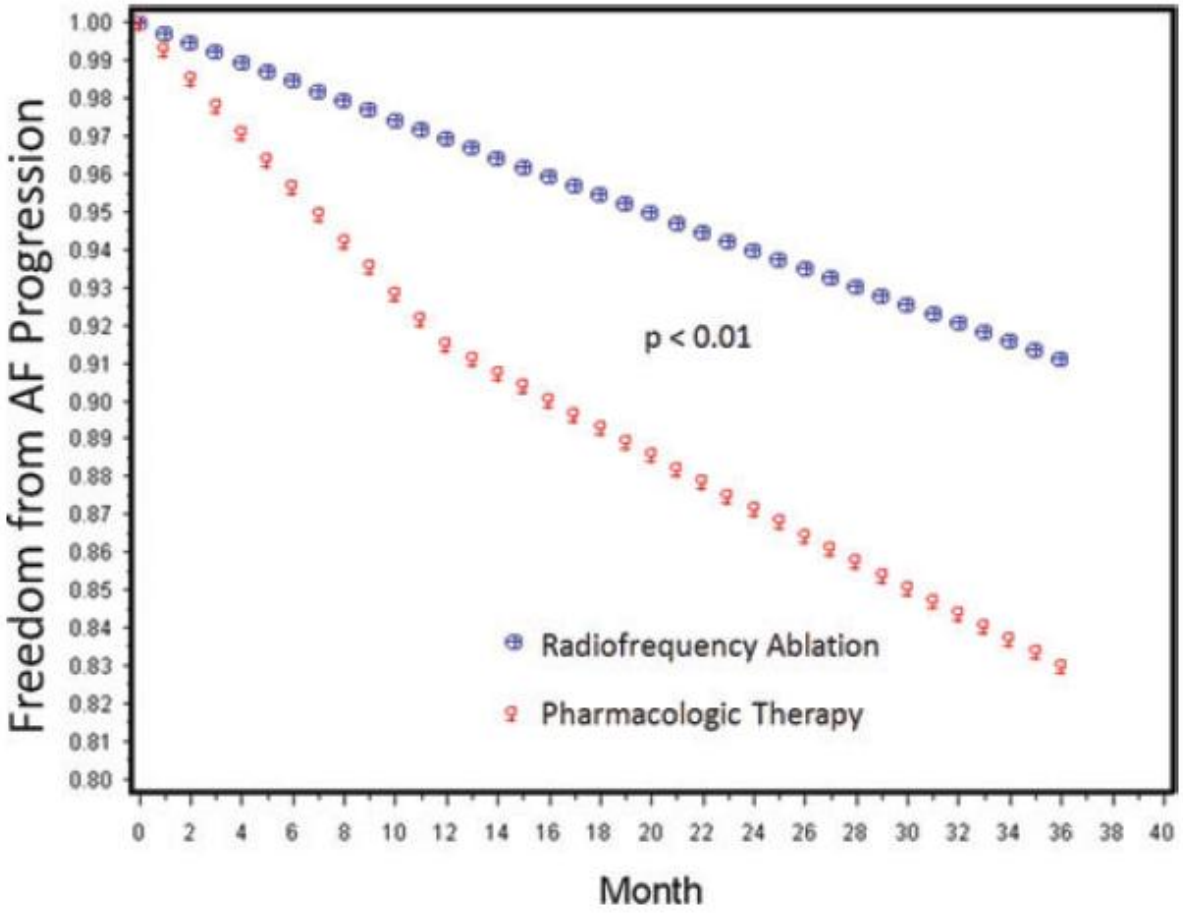

Figure 1. *Rate of AF progression. The probability of AF progression was 0.6% per year after RFA in this study (blue line) versus 8.6% in the first year with slow but steady progression to 24.7% in 5 years in patients treated pharmacologically (red line).*[3]

- RF Ablasyonun yaşlanma sürecine veya yapısal kalp hastalığının kendisine bağlı elektroanatomik anormalliklere pek etkisi yok !

- İlerlemenin önlenmesinde aslolan "sinüs ritminin korunması" ?

- Sinüs ritmini korumak yapısal değişiklik olmamış (küçük , fibrozisi az) atriyumlarda daha olanaklıdır !

"Atriyal fibrilasyonun doğal seyrini durdurmak için erken dönemde ablasyon gerekir !"