‘AF Ablasyonunun **başarılı** olması için **tüm** **aktif** pulmoner venlerin **kalıcı** olarak izole edilmesi **şart değildir**’

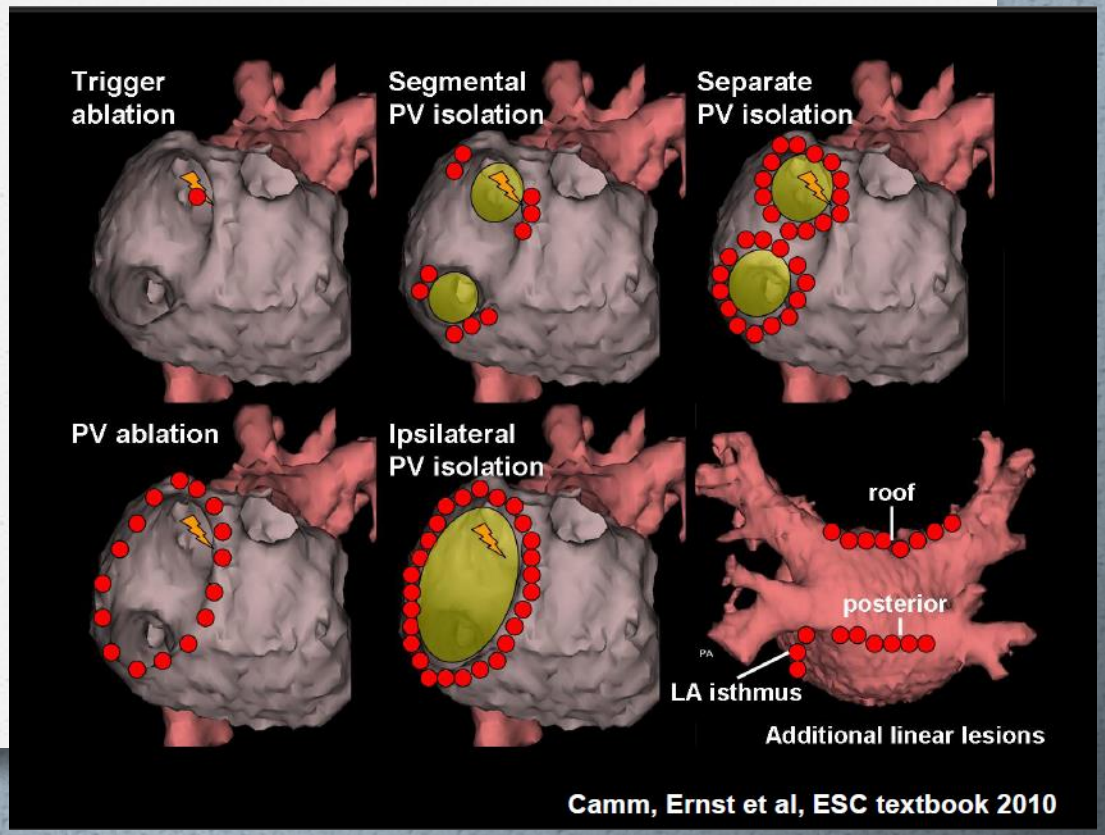
Özgür Aslan

Çıkar Çatışması ?

- Konu ile ilişkili
  - Medtronic Türkiye
  - St.Jude Türkiye
    - Toplantılara katılım ve konaklama bedelleri
- AF Zirvesi ile ilişkili
  - Pfizer İlaçları Türkiye
    - Toplantı katılımı ve konaklama bedelleri
    - Honoraryum/konuşmacı ücreti

AF Ablasyonu

- AF ablasyonunu neden yapıyoruz ?
  - Yaşam kalitesi
  - Kalp yetmezliği
  - Mortalite
- Ablasyonu nasıl yapıyoruz ?
  - PVİ
  - PVİ + CFE
  - PVİ + Lineer abl
  - Non-PV



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

EUROPEAN SOCIETY OF CARDIOLOGY®

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

HRS/EHRA/ECAS EXPERT CONSENSUS STATEMENT

AF Ablasyonu

TABLE 5: DEFINITIONS FOR USE WHEN REPORTING OUTCOMES OF AF ABLATION AND IN CLINICAL TRIALS OF CATHETER OR SURGICAL ABLATION OF AF

Acute Procedural Success	Acute procedural success is defined as electrical isolation of all pulmonary veins. A minimal assessment of electrical isolation of the PVs should consist of an assessment of entrance block. If other methods are used to assess PV isolation, including exit block and/or the use of provocative agents such as adenosine or isoproterenol, they should be pre-specified. Furthermore, it is recommended that the wait time used to screen for early recurrence of PV conduction once initial electrical isolation is documented be specified in all prospective clinical trials.
One Year Success*	One year success is defined as freedom from AF/AFL/AT off antiarrhythmic drug therapy as assessed from the end of the 3 months blanking period to 12 months following the ablation procedure.
Clinical/Partial Success*	Clinical/partial success is defined as a 75% or greater reduction in the number of AF episodes, the duration of AF episodes, or the % time a patient is in AF as assessed with a device capable of measuring AF burden in the presence or absence of previously ineffective antiarrhythmic drug therapy.
Long Term Success*	Long term success is defined as freedom from AF/AFL/AT recurrences following the 3-month blanking period through a minimum of 36 months follow-up from the date of the ablation procedure in the absence of Class I and III AAD therapy.
	**When reporting outcomes of AF ablation, the development of atrial tachycardia or atrial flutter should be included in the broad definition of recurrence following AF ablation. All studies should report freedom from AF, atrial tachycardia, and atrial flutter. These endpoints can also be reported separately. All studies should also clearly specify the type and frequency of ECG monitoring as well as the degree of compliance with the prespecified monitoring protocol.*

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

HRS/EHRA/ECAS EXPERT CONSENSUS STATEMENT

AF Ablasyonu

- **PV'lerin AKTİF olduğunu nasıl anlıyoruz ?**
  - PV sinyal kaydı (Lasso, Achieve,vb)
  - İndüksiyon
    - Adenozin
    - İzoproterenol

AF Ablasyonu

- **PV'lerin İZOLE olduğunu nasıl anlıyoruz ?**
  - PV voltaj ölçümü
  - PV sinyal kaydı (Lasso, Achieve,vb)
    - Giriş bloğu
    - Çıkış bloğu
  - İndüksiyon şart mıdır ?
    - Adenozin
    - İzoproterenol

AF Ablasyonu

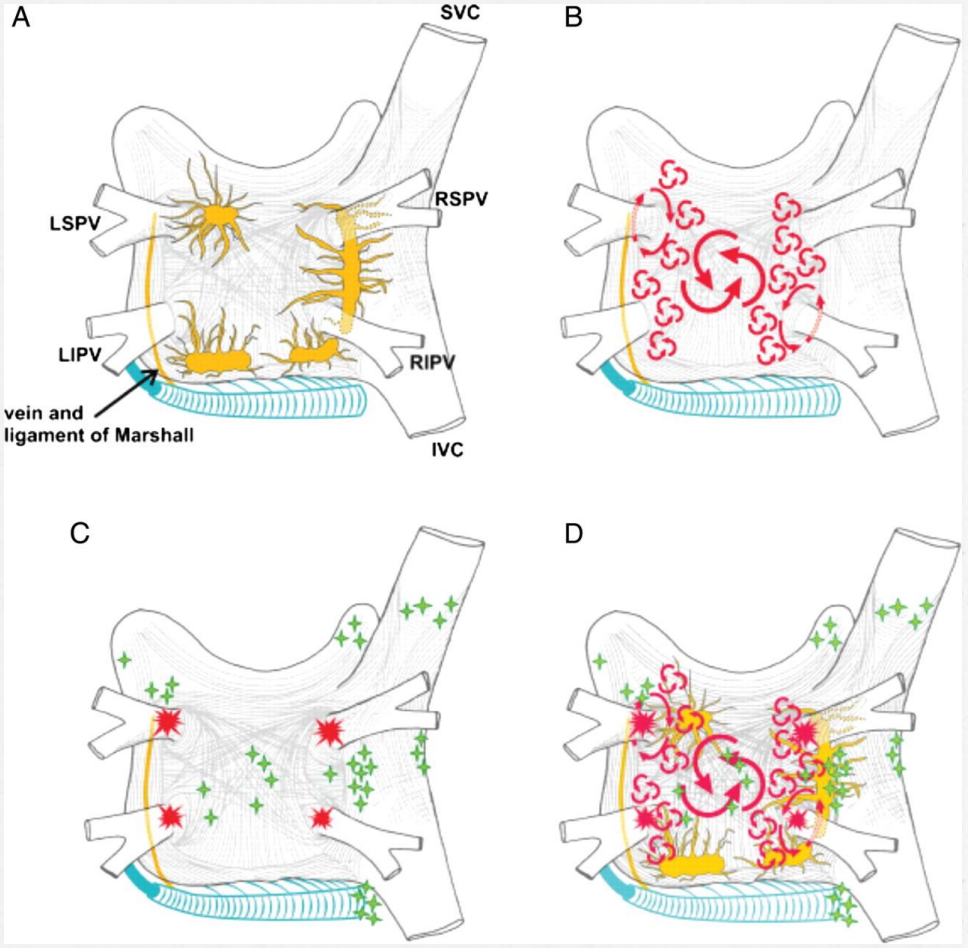
- **Tüm PV'leri mi hedeflemeli ?**
  - Sadece 'suçlu' PV'leri bulmak mümkün mü ve onları izole etmek yeter mi?
  - Sessiz' PV gerçekten 'sessiz' mi?
  - Her zaman PV mi suçlu ?
  - PV dışı kaynaklar ne kadar 'suçlu'

AF Ablasyonu

- **Sonuçta BAŞARI ne?**
  - Hiç AF olmaması ?
    - Hangi yöntemle kanıtlayacağız ?
  - Hastanın şikayet etmemesi ?
    - Asemptomatik AF dönemleri
  - Yaşam kalitesinin iyileşmesi ?
  - Kalp yetersizliğinin önlenmesi ?
  - Mortalitenin azaltılması ?

AF Ablasyonu

- Sadece ‘suçlu’ PV’leri bulmak mümkün mü ?
- Sessiz’ PV gerçekten ‘sessiz’ mi?
- ‘Suçlu’ sadece PV’ler mi?



Calkins H et al. Europace 2012

SPONTANEOUS INITIATION OF ATRIAL FIBRILLATION BY ECTOPIC BEATS ORIGINATING IN THE PULMONARY VEINS

MICHEL HAÏSSAGUERRE, M.D., PIERRE JAÏS, M.D., DIPEN C. SHAH, M.D., ATSUSHI TAKAHASHI, M.D., MÉLÈZE HOCINI, M.D., GILLES QUINIOU, M.D., STÉPHANE GARRIGUE, M.D., ALAIN LE MOUROUX, M.D., PHILIPPE LE MÉTAYER, M.D., AND JACQUES CLÉMENTY, M.D.

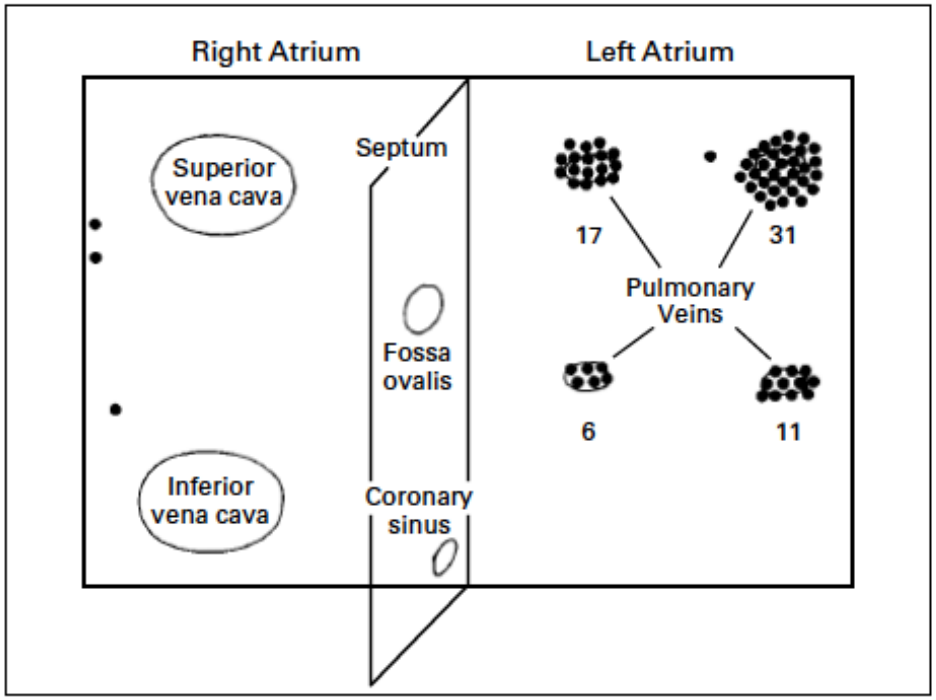


Figure 1. Diagram of the Sites of 69 Foci Triggering Atrial Fibrillation in 45 Patients.
Note the clustering in the pulmonary veins, particularly in both superior pulmonary veins. Numbers indicate the distribution of foci in the pulmonary veins.

Single procedure efficacy of isolating all versus arrhythmogenic pulmonary veins on long-term control of atrial fibrillation: a prospective randomized study.

Heart Rhythm. 2008 Feb;5(2):174-81. doi: 10.1016/j.hrthm.2007.09.024. Epub 2007 Oct 2

Dixit S1, Gerstenfeld EP, Ratcliffe SJ, Cooper JM, Russo AM, Kimmel SE, Callans DJ, Lin D, Verdino RJ, Patel VV, Zado E, Marchlinski FE.

BACKGROUND: Current atrial fibrillation (AF) ablation involves isolation of all pulmonary veins (PVs) with or without additional linear lesions. However, whether such extensive ablation is necessary is unclear.

OBJECTIVE: The purpose of this study was to assess the efficacy of different ablation strategies on long-term AF control.

METHODS: We prospectively randomized patients to undergo isolation of all versus arrhythmogenic PVs (identified by standardized stimulation protocol). PV isolation was guided by circular mapping catheter. The endpoint was entry/exit block persisting for > or = 20 minutes. Patients were evaluated at three clinic visits (at 6 weeks, 6 months, and 1 year) and multiple transtelephonic monitoring periods. Antiarrhythmic drugs were discontinued at 6 weeks. Primary study endpoint was long-term AF control (freedom or >90% reduction in AF burden off or on previously ineffective antiarrhythmic drugs at 1 year after a single ablation procedure).

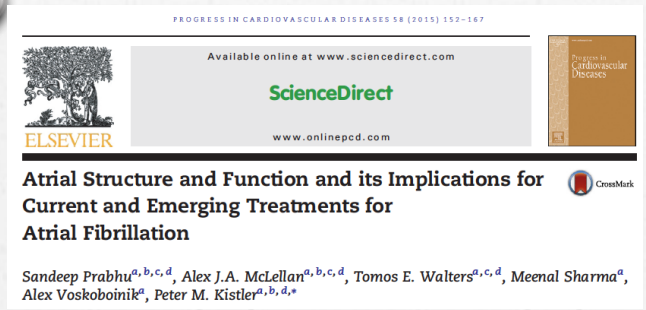
RESULTS: Over a 20-month period, 105 patients (76 men and 29 women, age 57 +/- 9 years; paroxysmal AF = 77) were randomized, and 103 patients completed 1-year follow-up (51 patients in all-PV arm, 52 patients in arrhythmogenic PV arm). The primary endpoint was achieved in 75 (73%) patients and was similar in patients randomized to all-PV arm versus arrhythmogenic PV arm [38 (75%) patients vs 37 (71%) patients, respectively; odds ratio 1.18, 95% confidence interval 0.50, 2.83, P = .70]. Secondary study endpoints, including freedom from AF off antiarrhythmic drugs, total procedure/fluoroscopy times, and occurrence of serious adverse events, were not different between the two groups.

CONCLUSION: In a randomized comparison, isolation of arrhythmogenic veins was as efficacious as empiric isolation of all veins in achieving long-term AF control.

"Electrically Silent" Pulmonary Veins Connecting to the Right Atrium: Does the Atrium Make the Difference?

DANIEL STEVEN, M.D., THOMAS ROSTOCK, M.D., TUSHAR SALUKHE, M.D.,
KAI MÜLLERLEILE, M.D., and STEPHAN WILLEMS, M.D.
From the Department of Electrophysiology, Heart Center, University Hospital Hamburg, Hamburg, Germany

Pulmonary veins (PVs) usually drain into the left atrium (LA) and are frequently targeted for electrical isolation, since it became evident that PVs may trigger and maintain paroxysmal atrial fibrillation (AF). We present a patient with right-sided PVs anomalously connecting to the right atrium with lack of electrical PV-atrial connection. Therefore, isolation of the left veins was performed resulting in freedom from AF as shown during a midterm follow-up. These findings indicate that PV connection to the LA may be a prerequisite for the arrhythmogenic properties of the PVs causing AF. (PACE 2012; 35:e69–e72)


PROGRESS IN CARDIOVASCULAR DISEASES 58 (2015) 152–167

Available online at www.sciencedirect.com

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ELSEVIER

Atrial Structure and Function and its Implications for Current and Emerging Treatments for Atrial Fibrillation

Sandeep Prabhu[a,b,c,d], Alex J.A. McLellan[a,b,c,d], Tomos E. Walters[a,c,d], Meenal Sharma[a], Alex Voskoboinik[a], Peter M. Kistler[a,b,d,]*

- PV anatomisi
  - Post-mortem çalışmalar
    - AF olanlarda da olmayanlarda da PV içine miyokardiyal uzantılar var
    - AF olanlarda daha kesintili uzantılar
    - Miyokardiyal uzantılar üst PV lerde daha büyük (AF daha çok bunlarla ilgili diyen yayınlarla uyumlu)
    - Hücrelerarası fibrozis gözleniyor
    - Lif oriyentasyonunda ani keskin değişimler ile anizotropi olasılığı
    - LAA ridge ile LAA/LPV bağlantıları ve aritmojenisite !

PROGRESS IN CARDIOVASCULAR DISEASES 58 (2015) 152–167

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Atrial Structure and Function and its Implications for Current and Emerging Treatments for Atrial Fibrillation

Sandeep Prabhu[a,b,c,d], Alex J.A. McLellan[a,b,c,d], Tomos E. Walters[a,c,d], Meenal Sharma[a], Alex Voskoboinik[a], Peter M. Kistler[a,b,d,*]

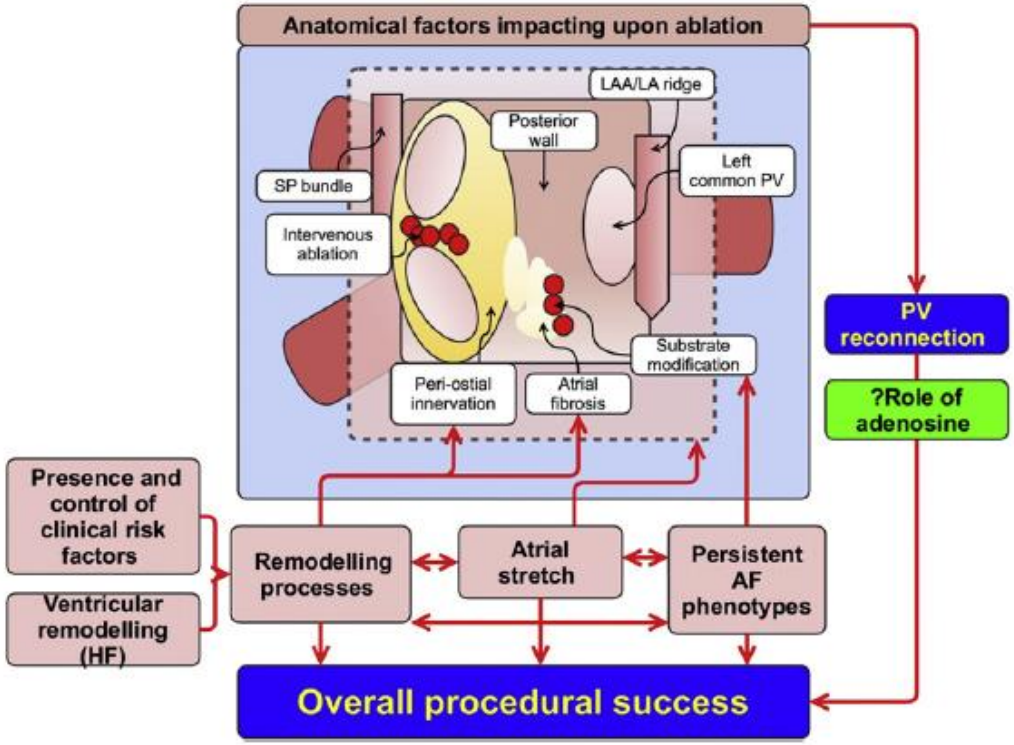


Fig 2 – The interplay of factors impacting upon the overall procedural success of AF ablation. ***Abbreviations***: HF = heart failure, SP = septo-pulmonary, LAA = left atrial appendage, PV = pulmonary vein, LA = left atrium.

European Heart Journal (2015) 36, 3276–3287
doi:10.1093/eurheartj/ehv457

FASTTRACK
ESC Hot Line

Arrhythmia/electrophysiology

Adenosine triphosphate-guided pulmonary vein isolation for atrial fibrillation: the UNmasking Dormant Electrical Reconduction by Adenosine TriPhosphate (UNDER-ATP) trial

- Önceki retrosepektif/gözlemsel araştırmaların aksine tekrarlayan aritmiler açısından 1 yıllık takipte fark yok !
- Diğer çalışmalarda ortalama dormant PVI oranı %49 iken bu çalışmada %27.6
  - Bekleme süresi !!
  - Erken rekonneksiyon %40
- ADVICE (ADenosine following pul- monary Vein Isolation to target dormant Conduction Elimination) çalışması
  - %53 dormant PVI iletimi
  - Ek ablasyon vs Devam
  - 1 yıl %31 tekrara karşılık %58 tekrar (*P* , 0.001)
- Antrum ablasyonu ile önemi ne kadar ?

Is pulmonary vein isolation still the cornerstone in atrial fibrillation ablation?

T. Jared Bunch, Michael J. Cutler

J Thorac Dis 2015;7(2):132-141

- **Kalıcı PV izolasyonu elde etmek zor !**
  - Uzun dönem izlem çalışmaları
    - PV rekonneksiyon oranı %50 civarı
    - Tekrar aritmi nedeniyle ablasyon yapılanların %94 ünde PV rekonneksiyonu
- **Suboptimal PV izolasyonu durumunda klinik sonuçlar ?**
  - Aritmisi olmayan hastalarda da PV rekonneksiyonu var !
  - RF enerjinin miktarı transmural lezyon ve kalıcı skar ile doğrudan ilişkili değil !
    - Çok az skarı olan da bile aritmi olmayabiliyor !

Is pulmonary vein isolation still the cornerstone in atrial fibrillation ablation?

T. Jared Bunch, Michael J. Cutler

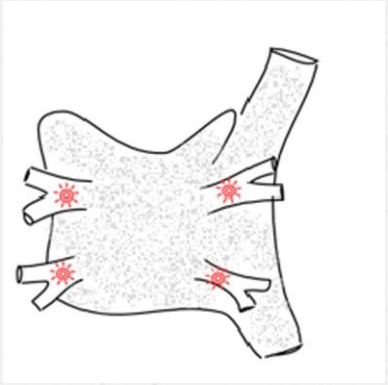
J Thorac Dis 2015;7(2):132-141

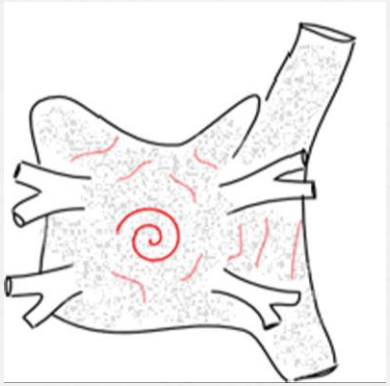
- **Sorunlar !**
  - Akut PVİ sağlayan ve kalıcı olan miyokardiyal hasar miktarı nedir ?
  - Kalıcı etkiyi öngördürebilecek PVİ dışında başka bir ölçüt kullanılabilir mi ?
  - Kalıcı PVİ olmaması klinik sonuçları etkilemiyorsa klinik nüksler neyle ilgili ?
    - Non-PV tetikleyiciler / rotorlar ?
    - Zemin hastalıklar / riskler !

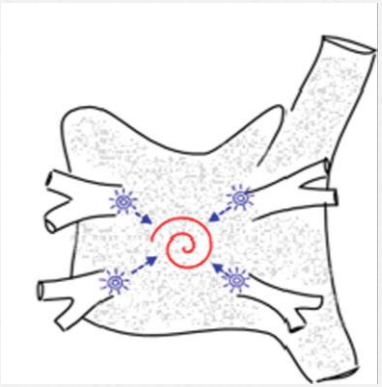
AF Ablasyonu

- Her zaman PV mi suçlu ?
- PV dışı kaynaklar ne kadar ‘suçlu’?

- *Atriyumun ‘yeniden biçimlenmesi’nin rolü?*







Calkins H et al. Europace 2012

Active or passive pulmonary vein in atrial fibrillation: Is pulmonary vein isolation always essential?

Julien Seitz, MD,* Jérôme Horvilleur, MD,† Laurence Curel, MSc,* Jérôme Lacotte, MD,† Alexandre Maluski, MD,* Ange Ferracci, MD,* Michel Bremondy, MD,* Arnaud Rosier, MD,† Mehran Monchi, MD,† Guillaume Penaranda, MSc,* Jacques Faure, MD,* Sylvain Beurtheret, MD,* André Pisapia, MD, FHRS*

*From the *Hôpital Saint Joseph, Marseille, France, and †Institut Cardiovasculaire Paris Sud, Hôpital Privé Jacques Cartier, Massy, France.*

- PAF yayılmasında 'Driving' PV'ler ?
  - PAF sırasında PV içinde çok kısa CL li (109.4+- 26.7 ms) aktivite
  - Persistan AF de PV içi CL daha kısa değil !
  - Hızlı firing PV ler de bile PVİ olmadan da AF sonlandırılabiliyor !
- Non-PAF'da Pasif PV ler
  - 4 PV de sessiz olabilir !
- AF süresi uzadıkça atriyum miyokardı yeniden biçimlenir ve AF nin devamlılığında temel olmaya başlar.
  - Dominant frekanslı bölgelerin ablasyonu ile kalıcı başarı ! ??

Pulmonary veins activity in AF population

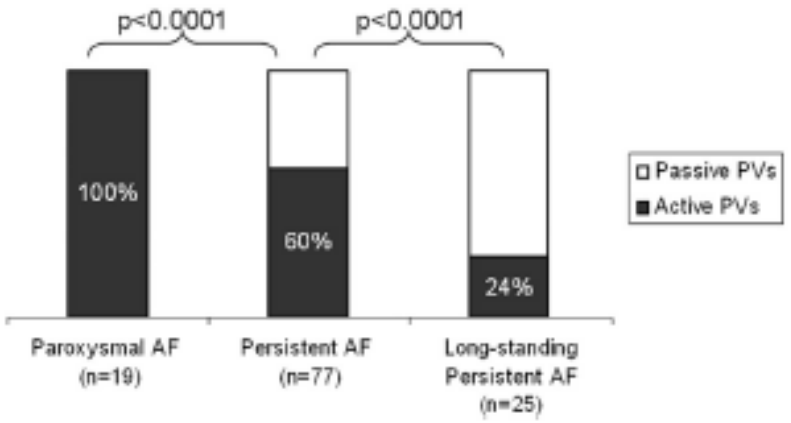
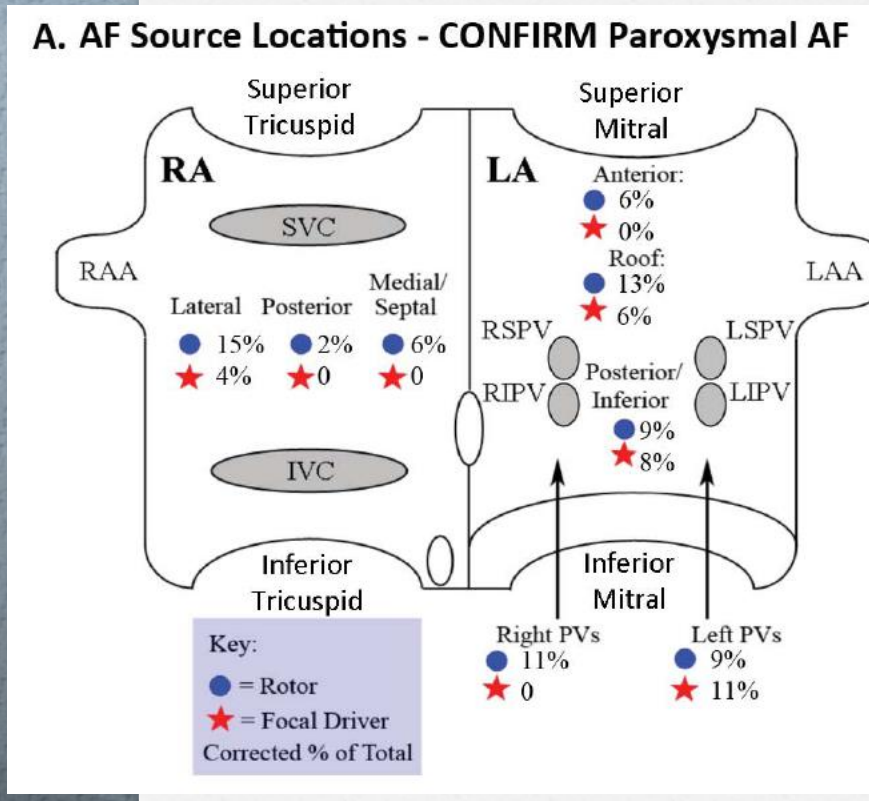
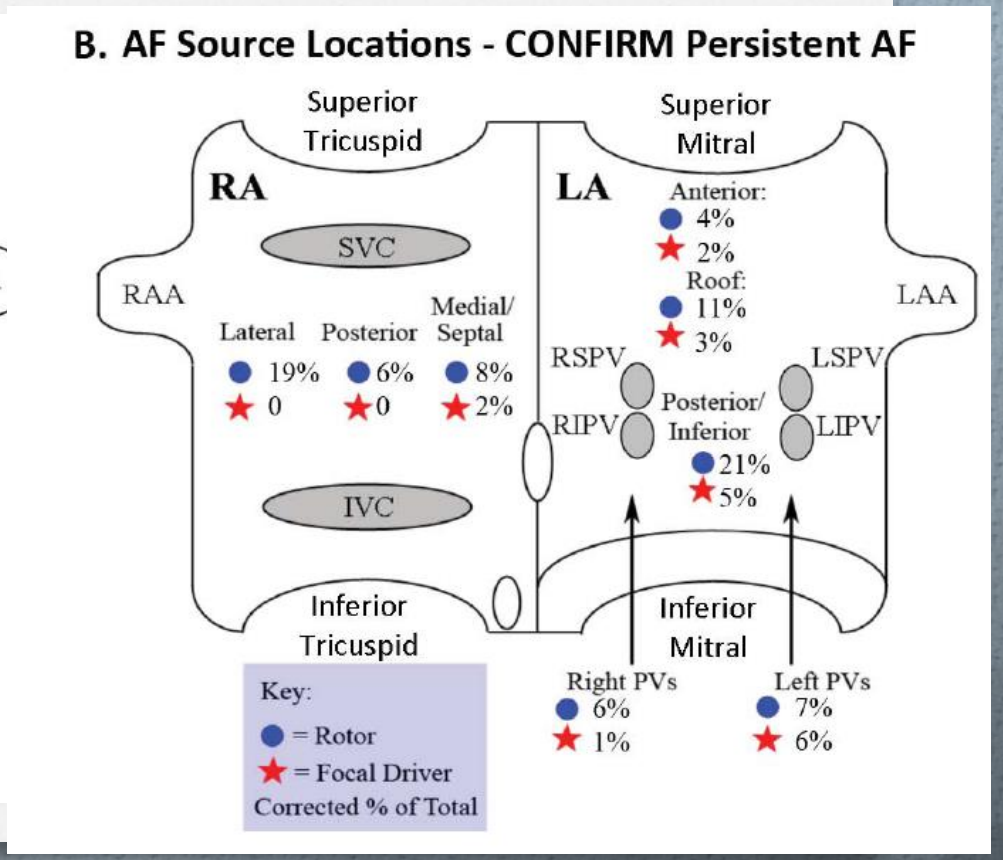


Figure 5 Proportion of patients with active and passive PVs with regard to AF type. Passive PV is defined as a silent PV or PV CL > LAA CL; active PV is defined as PV CL less than or greater than LAA CL. *$P = .0001$; **$P = .01$. AF = atrial fibrillation; CL = cycle length; LAA = left atrial appendage; PV = pulmonary vein.

CONFIRM çalışması





Driver Domains in Persistent Atrial Fibrillation

Michel Haissaguerre, MD; Meleze Hocini, MD; Arnaud Denis, MD; Ashok J. Shah, MD; Yuki Komatsu, MD; Seigo Yamashita, MD; Matthew Daly, MD; Sana Amraoui, MD; Stephan Zellerhoff, MD; Marie-Quitterie Picat, MD; Adam Quotb, PhD; Laurence Jesel, MD; Han Lim, MD; Sylvain Ploux, MD; Pierre Bordachar, MD; Guillaume Attuel, PhD; Valentin Meillet, MSc; Philippe Ritter, MD; Nicolas Derval, MD; Frederic Sacher, MD; Olivier Bernus, PhD; Hubert Cochet, MD; Pierre Jais, MD; Remi Dubois, PhD

Background—Specific noninvasive signal processing was applied to identify drivers in distinct categories of persistent atrial fibrillation (AF).

Methods and Results—In 103 consecutive patients with persistent AF, accurate biatrial geometry relative to an array of 252 body surface electrodes was obtained from a noncontrast computed tomography scan. The reconstructed unipolar AF electrograms acquired at bedside from multiple windows (duration, 9±1 s) were signal processed to identify the drivers (focal or reentrant activity) and their cumulative density map. The driver domains were catheter ablated by using AF termination as the procedural end point in comparison with the stepwise-ablation control group. The maps showed incessantly changing beat-to-beat wave fronts and varying spatiotemporal behavior of driver activities. Reentries were not sustained (median, 2.6 rotations lasting 449±89 ms), meandered substantially but recurred repetitively in the same region. In total, 4720 drivers were identified in 103 patients: 3802 (80.5%) reentries and 918 (19.5%) focal breakthroughs; most of them colocalized. Of these, 69% reentries and 71% foci were in the left atrium. Driver ablation alone terminated 75% and 15% of persistent and long-lasting AF, respectively. The number of targeted driver regions increased with the duration of continuous AF: 2 in patients presenting in sinus rhythm, 3 in AF lasting 1 to 3 months, 4 in AF lasting 4 to 6 months, and 6 in AF lasting longer. The termination rate sharply declined after 6 months. The mean radiofrequency delivery to AF termination was 28±17 minutes versus 65±33 minutes in the control group ($P<0.0001$). At 12 months, 85% patients with AF termination were free from AF, similar to the control population (87%,); P=not significant.

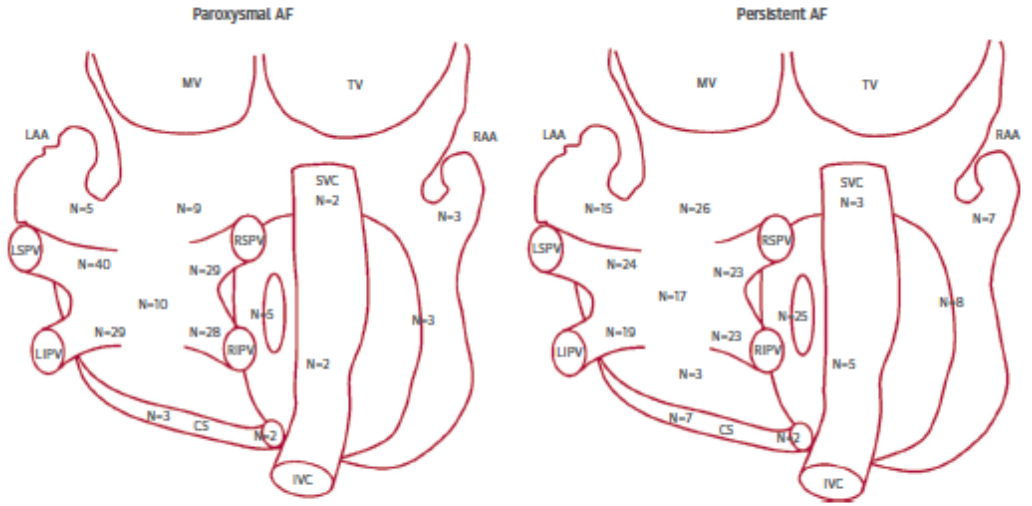
Conclusions—Persistent AF in early months is maintained predominantly by drivers clustered in a few regions, most of them being unstable reentries. (***Circulation***. **2014;130:530-538.**)

Comparison of Radiofrequency Catheter Ablation of Drivers and Circumferential Pulmonary Vein Isolation in Atrial Fibrillation

A Noninferiority Randomized Multicenter RADAR-AF Trial

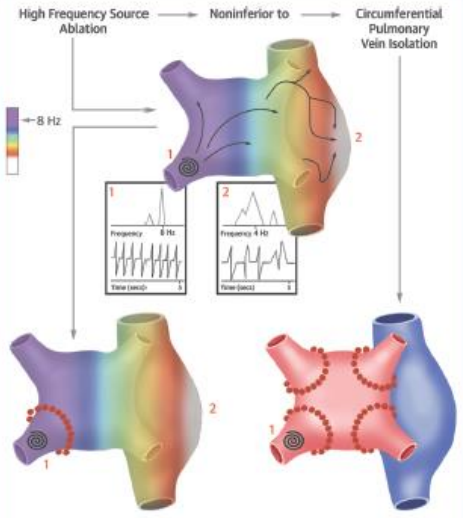
Felipe Atienza, MD, PhD,* Jesús Almendral, MD, PhD,† José Miguel Ormaetxe, MD, PhD,† Ángel Moya, MD,§ Jesús Daniel Martínez-Alday, MD, PhD,‖ Antonio Hernández-Madrid, MD, PhD,¶ Eduardo Castellanos, MD,# Fernando Arribas, MD, PhD,** Miguel Ángel Arias, MD, PhD,# Luis Tercedor, MD,†† Rafael Peinado, MD, PhD, Maria Fe Arcocha, MD,‡ Mercedes Ortiz, PhD,† Nieves Martínez-Alzamora, PhD,§§ Ángel Arenal, MD, PhD,* Francisco Fernández-Avilés, MD, PhD,* José Jalife, MD,‖‖ for the RADAR-AF Investigators

FIGURE 3 Schematic Diagram of HFS Distribution in the Atria



Posterior view of the atria showing HFS distribution in patients with paroxysmal **(left)** and persistent **(right)** AF. HFS are predominantly clustered at the pulmonary vein antrum and the left atrial posterior wall in paroxysmal AF, whereas a more widespread distribution is found in persistent AF patients, including the LA body, the septum, and the right atrium. CS = coronary sinus; IVC = inferior vena cava; LAA = left atrial appendage; LSPV = left superior pulmonary vein; LIPV = left inferior pulmonary vein; MV = mitral valve; RAA = right atrial appendage; RSPV = right superior pulmonary vein; RIPV = right inferior pulmonary vein; SVC = superior vena cava; TV = tricuspid valve.

CENTRAL ILLUSTRATION Ablation Strategies Compared in Patients With Paroxysmal Atrial Fibrillation



Atienza, F., et al. J Am Coll Cardiol. 2014; 64(23):2455–67.

Empiric circumferential pulmonary vein isolation was compared with high-frequency source ablation. The dominant frequency map **(left)** enabled detection of the highest frequency **(purple)** source (rotor) located at the left inferior pulmonary vein **(1)** with fibrillatory conduction to the right atrium **(2)** that activated at the lowest rate **(red to white)**, as shown in **boxes 1 and 2**, where local bipolar recordings and the corresponding power spectrum are depicted.

Comparison of Radiofrequency Catheter Ablation of Drivers and Circumferential Pulmonary Vein Isolation in Atrial Fibrillation

A Noninferiority Randomized Multicenter RADAR-AF Trial

Felipe Atienza, MD, PhD,* Jesús Almendral, MD, PhD,† José Miguel Ormaetxe, MD, PhD,† Ángel Moya, MD,‡ Jesús Daniel Martínez-Alday, MD, PhD,‖ Antonio Hernández-Madrid, MD, PhD,¶ Eduardo Castellanos, MD,# Fernando Arribas, MD, PhD,** Miguel Ángel Arias, MD, PhD,# Luis Tercedor, MD,†† Rafael Peinado, MD, PhD, Maria Fe Arcocha, MD,‡ Mercedes Ortiz, PhD,† Nieves Martínez-Alzamora, PhD,‡‡ Ángel Arenal, MD, PhD,* Francisco Fernández-Avilés, MD, PhD,* José Jalife, MD,‖‖ for the RADAR-AF Investigators

- **Paroksismal AF**
  - 6. ayda AF/AT tekrarı için PVI daha iyi
  - 1. yılda ise HFS ablasyonu ile PVI ile eşit sonuçlar
    - Daha kısa RF süresi
    - Daha az izole edilmiş PV
    - **Daha az komplikasyon**
- Diğer verilerle uyumlu sonuç !
  - '*Sadece aritmojenik venlerin ablasyonu ampirik 4 damar PVI'den farklı değildir' (**daha az komplikasyon** ile !) Dixit et al.*
  - '*Rotor ablasyonu*' *FIRM*
  - '*Tek başına kaynak ablasyonu PV ablasyonu gereksinimini ortadan kaldırabilir*' *PRECISE-AF*

Impact of Non-Pulmonary Vein Foci on the Outcome of the Second Session of Catheter Ablation for Paroxysmal Atrial Fibrillation

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Impact of Non-PV AF Foci on the Second Catheter Ablation for PAF. ***Background:*** **Paroxysmal atrial fibrillation (AF) is primarily triggered by pulmonary veins (PVs). However, non-PV AF foci may also trigger AF.**

Methods: **We examined 207 patients (mean age, 62 ± 11 years; 166 men) who underwent a second catheter ablation (CA) and evaluated the clinical significance of non-PV AF foci on the outcomes.**

Results: **Electrical reconnections between the PVs and left atrium (LA) were observed in 162 patients (78.3%). Non-PV AF foci were identified in 95 patients (45.9%, 60 patients with successfully ablated non-PV AF foci and 35 with unmappable non-PV AF foci). During a median follow-up period of 22.7 months, 61 patients (29.5%; 18/112 [16.1%] without non-PV AF foci vs. 20/60 [33.3%] with successfully ablated non-PV AF foci vs. 23/35 [65.7%] with unmappable non-PV AF foci, P < 0.0001) developed AF recurrence; 52 (85.2%) developed recurrence within 1 year. The presence of non-PV AF foci was a significant clinical predictor of AF recurrence after the second CA; successfully ablated non-PV AF foci increased the AF recurrence risk by 2.24 times (95% confidence interval [CI], 1.12–4.54; P = 0.02), and unmappable AF foci increased this risk by 5.58 times (95% CI, 2.73–11.63; P < 0.0001).**

Conclusion: **Nearly half of the patients had non-PV AF foci at the second CA session. AF recurred after the second CA session in approximately 30%, with most recurrences happening within 1 year. The presence of non-PV AF foci significantly increased the AF recurrence risk after a second CA. When non-PV AF foci were unmappable, the AF recurrence rate was extremely high.** *(J Cardiovasc Electrophysiol, Vol. 26, pp. 739-746, July 2015)*

AF Ablasyonu

- Başarı ? -

- Antiaritmik ilaç olmaksızın başarı oranları
  - Tek işlem %40-60
  - Çoklu işlem %70

Calkins H, et al. Heart Rhythm 2012;9:632–96.
Cheema A, et al. J Interv Card Electrophysiol 2006;15:145–55.
Weerasooriya R, et al. J Am Coll Cardiol 2011;57:160–6.

AF Ablasyonu

- **Sonuçta BAŞARI ne?**
  - Hiç AF olmaması ?
    - Hangi yöntemle kanıtlayacağız ?
  - Hastanın şikayet etmemesi ?
    - Asemptomatik AF dönemleri
  - Yaşam kalitesinin iyileşmesi ?
  - *Kalp yetersizliğinin önlenmesi ?*
  - *Mortalitenin azaltılması ?*

Canadian Journal of Cardiology 29 (2013) 1211–1217

Clinical Research

Relationship of Quality of Life With Procedural Success of Atrial Fibrillation (AF) Ablation and Postablation AF Burden: Substudy of the STAR AF Randomized Trial

Roberto Mantovan, MD, PhD,[a] Laurent Macle, MD,[b] Giuseppe De Martino, MD,[c] Jian Chen, MD, PhD,[d] Carlos A. Morillo, MD,[e] Paul Novak, MD,[f] Vittorio Calzolari, MD,[a] Yaariv Khaykin, MD,[h] Peter G. Guerra, MD,[b] Girish Nair, MD,[e] Esteban G. Torrecilla, MD,[g] and Atul Verma, MD[h]

Table 1. Quality of life scores for each ablation arm and for total study population

	MCS			PCS		
Arm	Baseline	12 months	*P*	Baseline	12 months	*P*
PVI with CFE	34.1 ± 6.8	38.3 ± 5.6	0.006	48.3 ± 11.7	55.5 ± 11.2	0.0098
CFE	34.1 ± 9.2	36.6 ± 6.3	0.21	47.0 ± 13.1	54.1 ± 11.8	0.0001
PVI	32.8 ± 9.7	37.3 ± 6.3	0.0003	48.3 ± 11.3	57.7 ± 10.7	0.0003
Total study population	33.4 ± 8.5	37.4 ± 6.0	0.0001	47.9 ± 11.9	55.7 ± 11.2	< 0.0001

CFE, complex fractionated electrogram ablation; MCS, mental component summary; PCS, physical component summary; PVI, pulmonary vein isolation.

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- İlk kez ablasyon yapılanların mental ve fiziksel QOL skorları ablasyon stratejisinden ve sonuçlarından bağımsız olarak 12 ayda iyileşiyor.
  - Paroksismal ve persistan AF de benzer
  - Ayda 27 saattan fazla olmayan AF/AT tekrarı sonucu değiştirmiyor !
- *'Tedavi beklentisi indeksi'*
- *'Sempt -------- Asempt AF'*

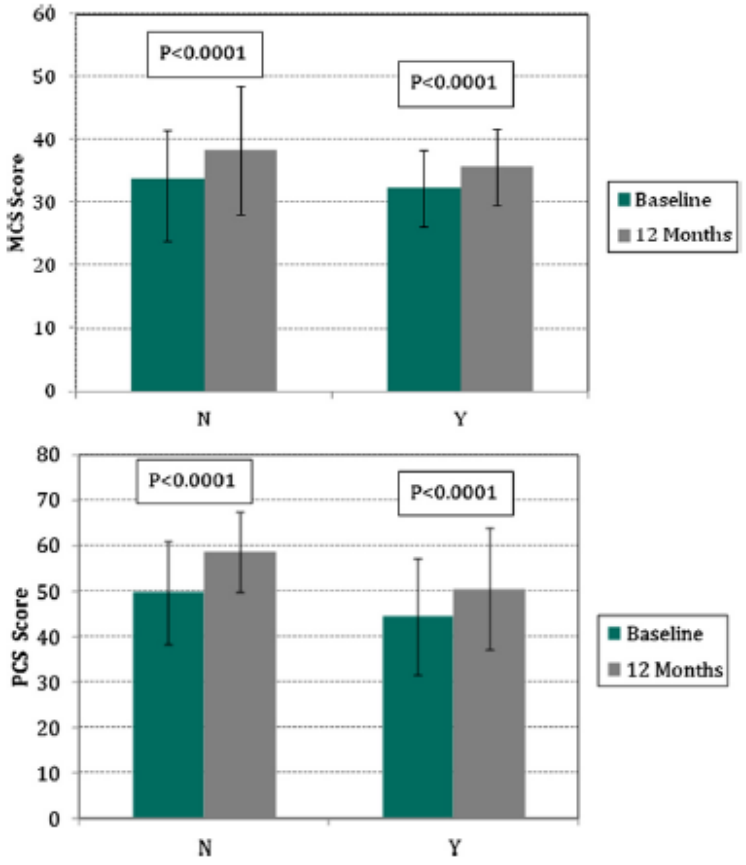

Figure 1. Mental compoent score (MCS score) and physical component score (PCS score) values at baseline and at 12-month follow-up for patients with no AF/AFL/AT recurrence (N) and for patients with AF/AFL/AT recurrence (Y). There were significant improvements in both scores for both groups from baseline to 12 months. There was a trend toward greater magnitude of change in MCS ($P = 0.11$) and PCS ($P = 0.09$) scores in patients without recurrrence. AF, atrial fibrillation; AFL, atrial flutter; AT, atrial tachycardia.

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Progress in Cardiovascular Diseases

Rate Control versus Rhythm Control in Atrial Fibrillation: Lessons Learned from Clinical Trials of Atrial Fibrillation

*Albert L. Waldo**

Department of Cardiovascular Medicine, Case Western Reserve University, University Hospitals Case Medical Center, Cleveland, OH

- **Başarı şansı en yüksek durum**
  - Lone - PAF
  - 60 yaş altı
  - Tetikleyicilerin agresif araştırılıp ablasyonu yapılabilenler
  - Kalıcı etki sağlayan teknik ??

AF Ablasyonu
- Başarı ? -

- Paroksismal AF de PVİ
  - Aktif olanlar !
  - Tetikleyiciliği gösterilmeli
- Non-PAF de tetikleyiciler ve dominant /yüksek frekanslı alanlar / Rotorlar
- Tüm venleri izole etmeye çalışmanın bir bedeli var
  - Komplikasyonlar
  - Yeni atriyal taşikardiler

AF Ablasyonu

- Başarı ? -

- AF ablasyon **başarı** oranı neden daha yüksek değil?
- Ablasyon sonrası tüm pulmoner venler izole ancak AF neden devam ediyor?
- Ablasyon sonrası tüm pulmoner venler izole değil ancak AF yok, neden?

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

‘AF Ablasyonunun **başarılı** olması için
tüm pulmoner venlerin
kalıcı olarak izole edilmesi
şart değildir’

Çünkü:

- Kalıcı izolasyon pek mümkün değil !
- AF sadece PV’lerle ilgili bir sorun değil ! (Belki PAF ☺)
- Sistemik bir soruna lokal bir çözüm pek mümkün değil !
- BAŞARI ne istediğimizle ilgilidir