

14th Edition

### CONTACT FORCE TECHNOLOGY OFFERS GREATER BENEFITS IN PERSISTENT COMPARED WITH PAROXYSMAL ATRIAL FIBRILLATION CATHETER ABLATION: 1 YEAR FOLLOW UP



VENICE 2015 RRHYTHMIA

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SPECIAL EDITION

FOOD & ARRHYTHMIAS



**INK** 



Contact force sensing technology identifies sites of inadequate contact and reduces acute pulmonary vein reconnection: A prospective case control study



Europace doi:10.1093/europace/euv057 CLINICAL RESEARCH

EFFICAS II: optimization of catheter contact force improves outcome of pulmonary vein isolation for paroxysmal atrial fibrillation

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# BACKGROUND



JOURNAL OF THE AMERICAN COLLEGE OF CARDIDLOGY IN 2014 BY THE AMERICAN COLLEGE OF CARDIDLOGY FOUNDATION PUBLISHED BY ELSEVIER INC.

V01. 64, NO. 7, 2016 185N 0725-1097/814.00 1110://14.001.019/1016/1.jacc.2014.04.072

#### Paroxysmal AF Catheter Ablation With a Contact Force Sensing Catheter Results of the Prospective, Multicenter SMART-AF Trial



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Circulation 2015; 132: 907-915



# BACKGROUND



#### The NEW ENGLAND JOURNAL of MEDICINE



N Engl J Med 2015;372:1812-22.



# BACKGROUND



#### Optimizing Radiofrequency Ablation of Paroxysmal and Persistent Atrial Fibrillation by Direct Catheter Force Measurement—A Case-Matched Comparison in 198 Patients

ELISABETH SIGMUND, M.D., HELMUT PUERERFELLNER, M.D., MICHAEL DERNDORFER, M.D., GEORGIOS KOLLIAS, M.D., SIEGMUND WINTER, M.D., JOSEF AICHINGER, M.D., HANS-JOACHIM NESSER, M.D., and MARTIN MARTINEK, M.D.









### **COMPARING CF**

#### VS

#### NON CF FORCE

#### IN PAROXYSMAL AND PERSISTENT AF ABLATIONS

- ✓ Procedure, Radiofrequency and Fluoroscopy time
- ✓ Safety
- ✓ Efficacy at 12 months follow up in particular in PeAF





#### From January 2011 to March 2014









#### ABLATION PROTOCOL (EAM)

#### PAROXYSMAL AF → PVI

#### **PERSISTENT AF** $\rightarrow$ PVI + LEFT ATRIAL LINES

- ✓ CF 5-15 g (up to 40 g)
- $\checkmark$  Entrance and exit block 30 minutes from the vein isolation
- $\checkmark$  Activation map for linear ablation validation
- ✓ Adenosine test







#### FOLLOW UP: 23 ± 11 months



- Clinical and EKG
- 24 h Holter / ICM
- OAC withdraw based on CHA<sub>2</sub>DS<sub>2</sub>VASC

- Clinical and EKG
- 24 h Holter / ICM
- AAD withdraw based on symptoms
- Clinical and EKG
- 24 h Holter / ICM



#### RESULTS



Baseline Characteristics	non contact	contact	р
	n=158	n=102	
Age (years±DS)	62.30 ± 11.0	60.2 ± 10.1	0.100
Males, n (%)	105 (68.6)	88 (71.5)	0.545
Hypertension, n (%)	93 (60.8)	68 (55.3)	0.436
Diabetes, n (%)	8 (5.2)	9 (7.3)	0.454
Previous stroke or TIA, n (%)	4 (2.6)	8 (6.5)	0.116
CAD, n (%)	11 (7.2)	6 (4.8)	0.435
АҒ Туре			
Paroxysmal, n (%)	98 (64.0)	76 (61.8)	0.460
Persistent, n (%)	56 (36.6)	47 (38.2)	0.459
EF (% ± DS)	58.7 ± 4.7	$58.3 \pm 4.9$	0.430
AF lasting (months±DS)	23.11 ± 3.2	21.1 ± 2.5	0.650



October 16 - 18







#### RESULTS







HR 0.24 [0.10-0.58], 95% CI

HR 0.55 [0.18-1.68], 95% CI



#### RESULTS











- ✓ Non randomized single centre study
- ✓ Success rate on/off AAD
- ✓ Different CF sensing catheter designs
- ✓ Not reliable AF monitoring systems
- ✓ No target CF/FTI values







#### ✓ CONTACT FORCE IS ASSOCIATED WITH SHORTER PROCEDURES, RADIOFREQUENCY AND FLUOROSCOPY WITH SIMILAR SAFETY

# ✓ CF IMPACTS ABLATION OUTCOME IN MIXED COHORT OF PAF AND PeAF WITH LOWER RATE OF RECURRENCE AFTER 12 MONTHS







# ✓ EFFICACY OF CF IS LESS EVIDENT IN PAF COMPARED WITH PeAF

#### ✓ IN PeAF LEFT ATRIAL LINES ON TOP OF PVI MAY BE BENEFICIAL WHEN PERFORMED WITH CONTACT FORCE SENSING CATHETERS

✓ FURTHER RANDOMIZED TRIALS ARE NEEDED IN PeAF AND CF: STAR AF 2 TRIAL ABLATIONS WERE PERFORMED WITHOUT CONTACT FORCE AND LESS THAN 50% OF LEFT LINES WERE COMPLETE.



#### THANK YOU

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