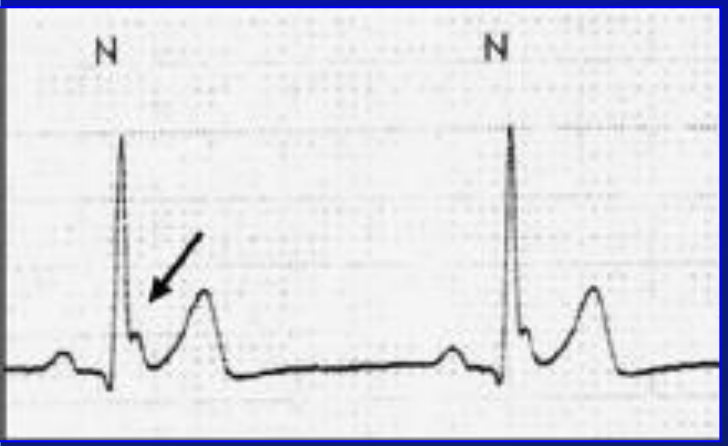
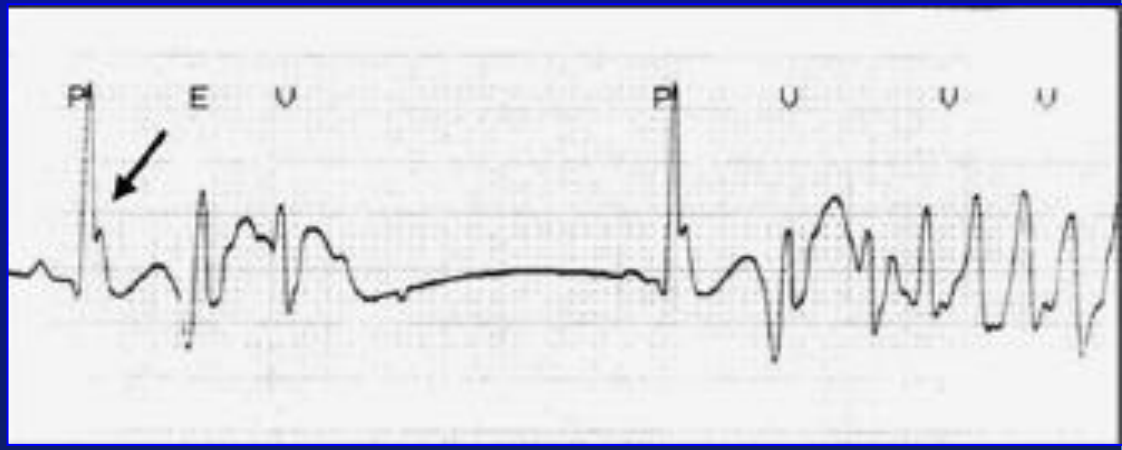
ECG MARKERS OF SUDDEN CARDIAC DEATH IN PATIENTS WITH STRUCTURALLY NORMAL HEARTS -

Sami Viskin, M.D.
Tel Aviv Medical Center, Israel.
2013.

ECG MARKERS OF INCREASED RISK IN EARLY REPOLARIZATION.





Gmail

More

COMPOSE

Inbox (105)

Starred

Important

Sent Mail

FW: J wave ECG Inbox x

Moti Haim
to me

Sami an ECG and a question from a friend in the US? What would you do?

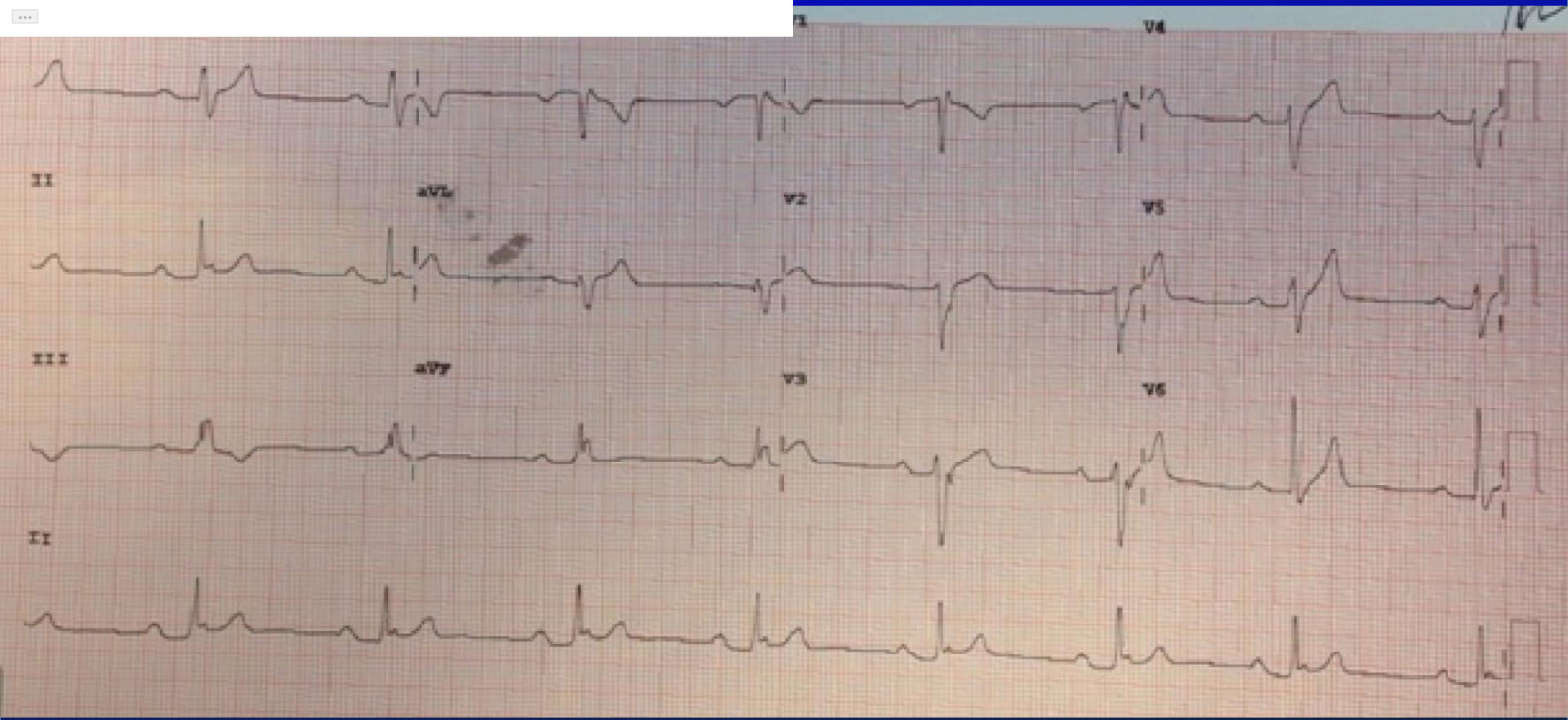
Case management question:

43 yo woman with history of paroxysmal AF, strange episode a couple years ago with chest pain, mildly elevated troponin, and clean cors on a cath. Patient is a runner, no history of syncope.

Brother has AFib and had cardiac arrest in 40's, has ICD.

What do you tell her? Straight to ICD? Call me if you have SCD?

...



J wave distribution

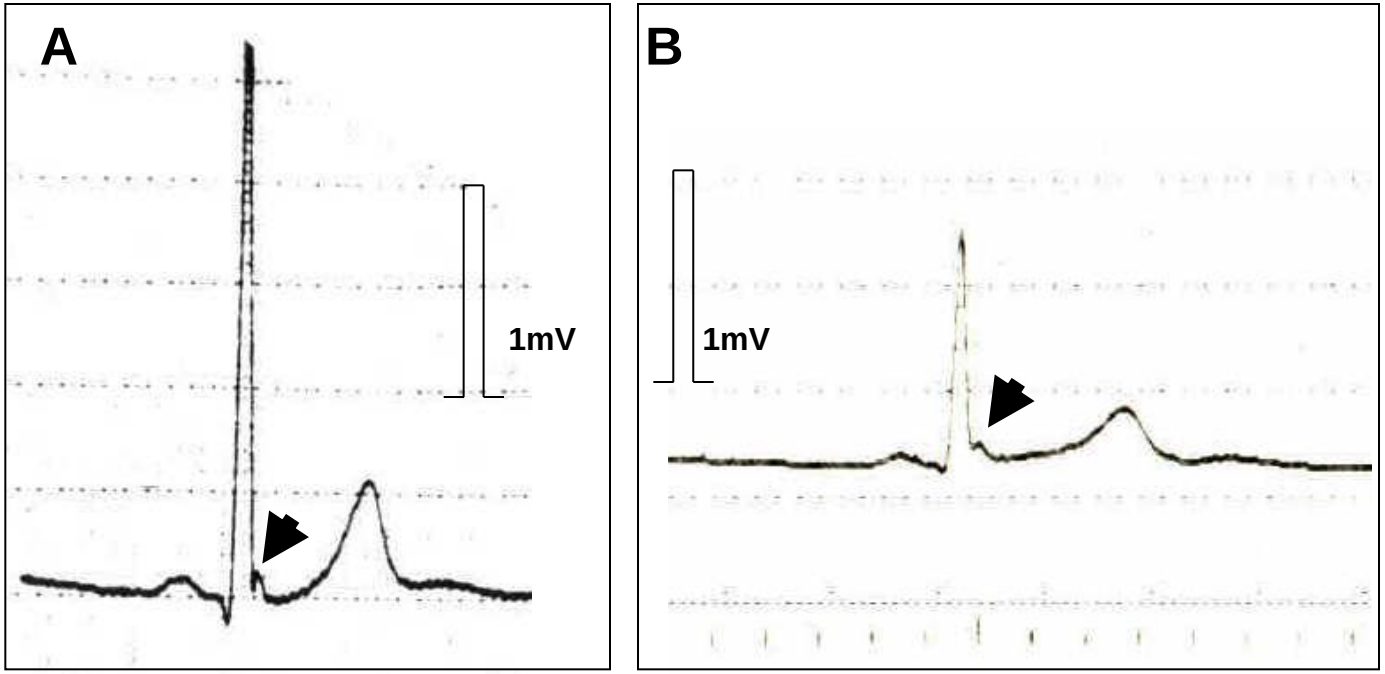
23 year old, perfectly healthy, man

But his younger brother died in the shower

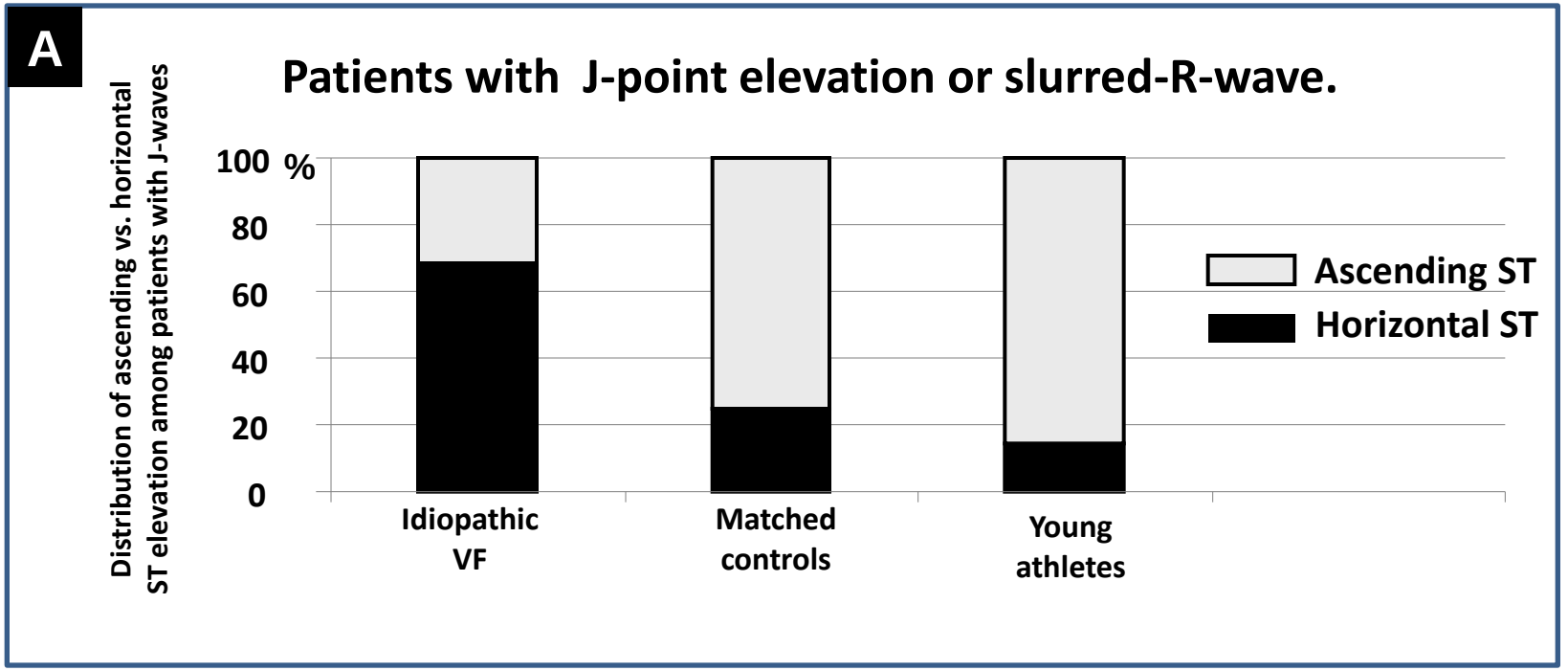
J-Point Elevation in Survivors of Primary Ventricular Fibrillation and Matched Control Subjects

Incidence and Clinical Significance

Distinguishing "benign" from "malignant early repolarization:" The value of ST-segment morphology.



Rosso, (Viskin) Heart*Rhythm* 2012


A
Patients with J-point elevation or slurred-R-wave.
Distribution of ascending vs. horizontal ST elevation among patients with J-waves
100 %
80
60
40
20
0
Idiopathic VF
Matched controls
Young athletes
Ascending ST
Horizontal ST

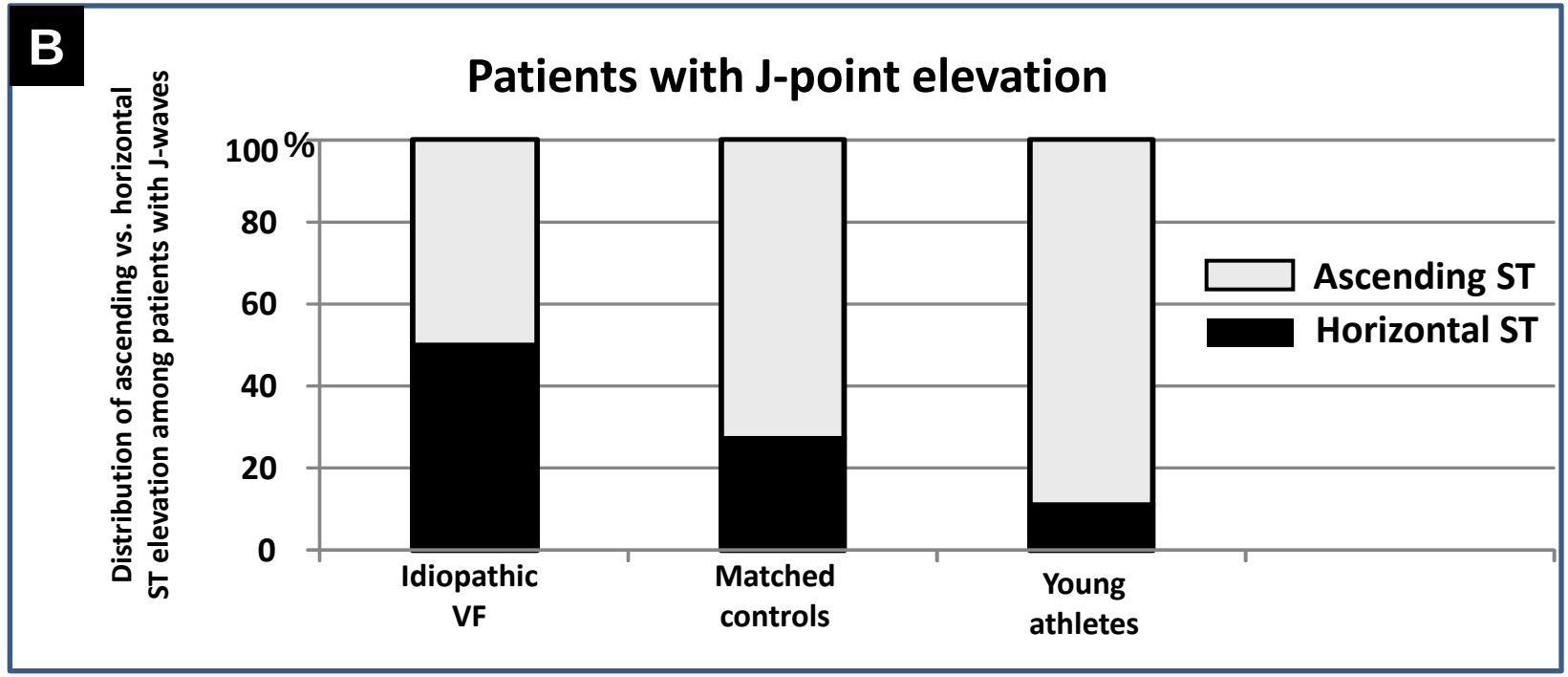
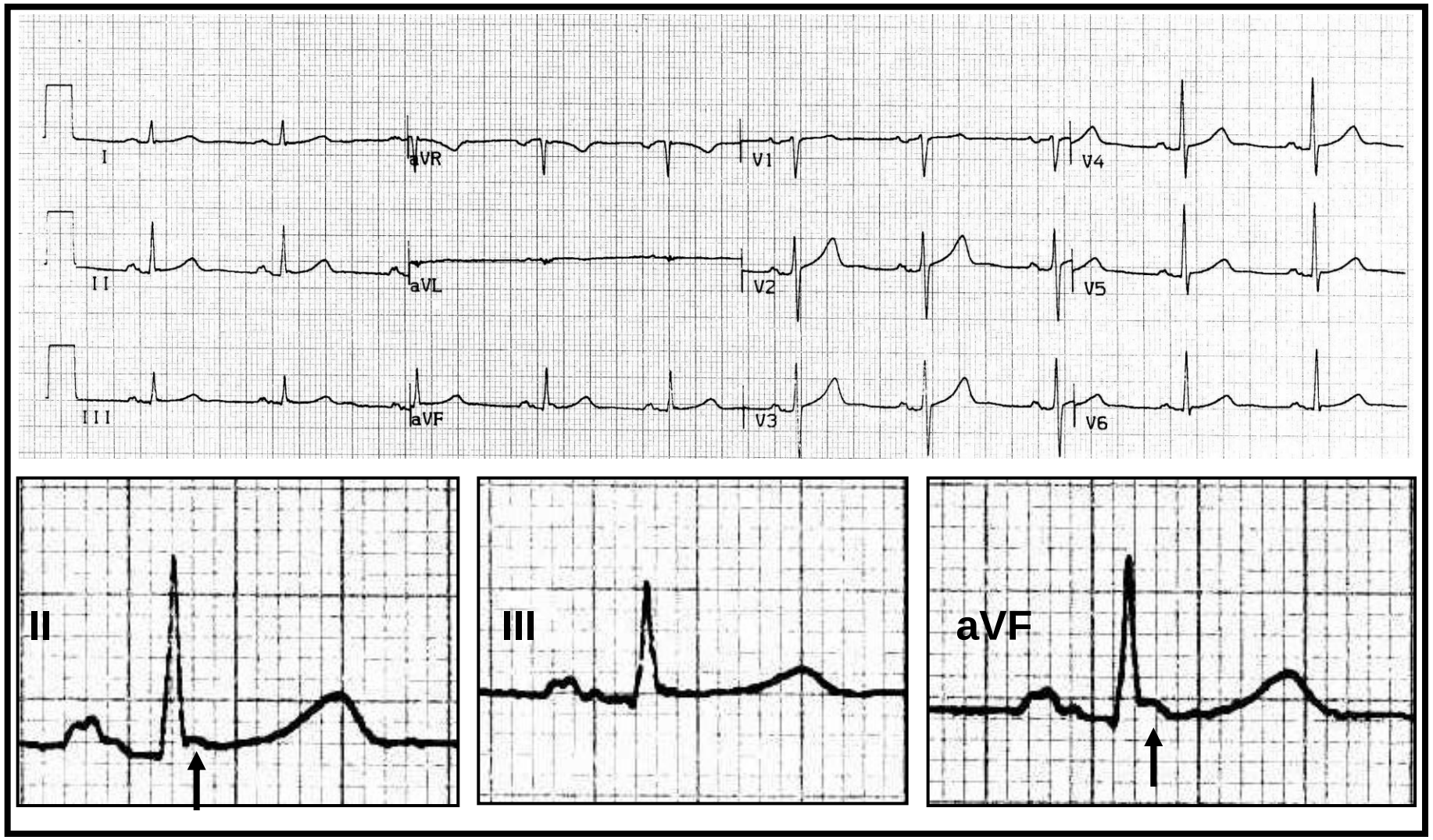
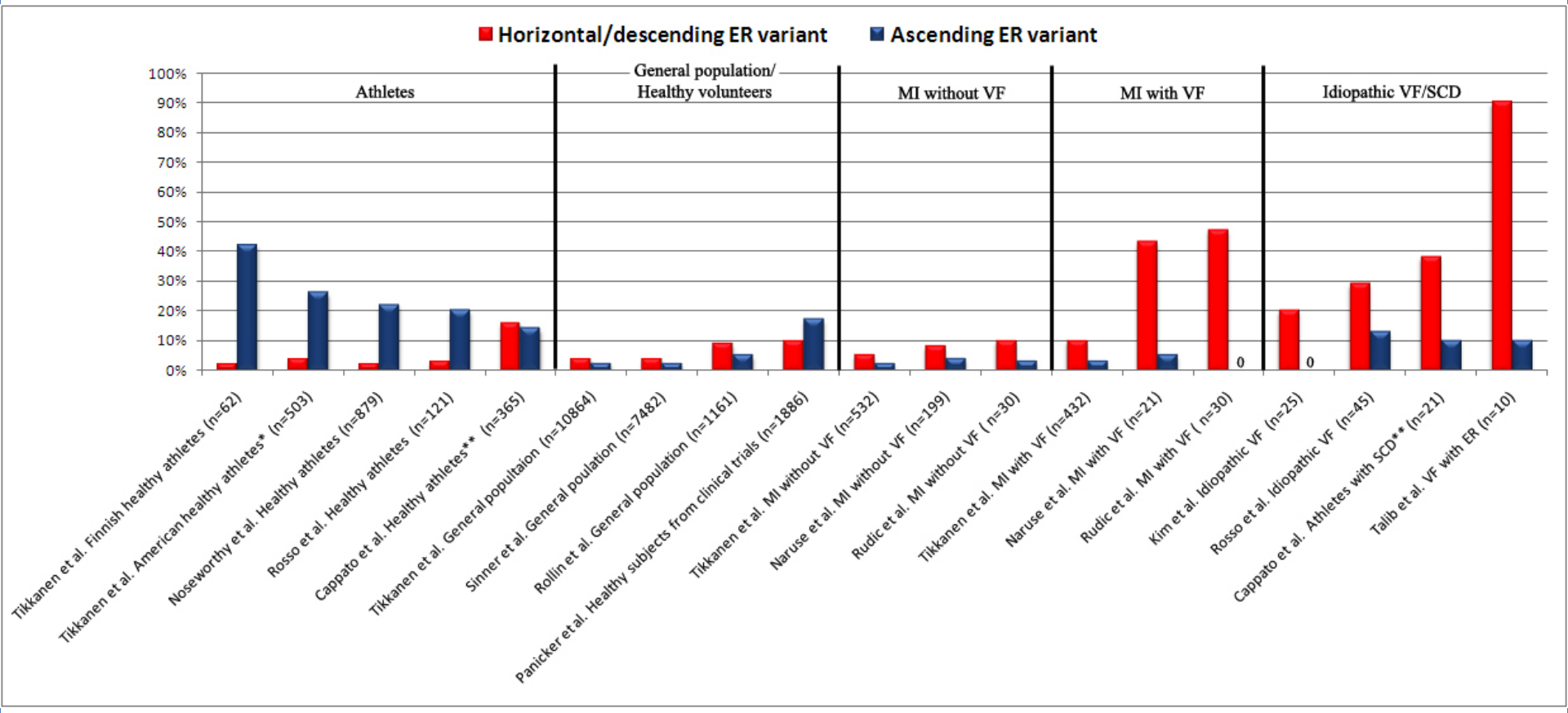

B
Patients with J-point elevation
Distribution of ascending vs. horizontal ST elevation among patients with J-waves
100 %
80
60
40
20
0
Idiopathic VF
Matched controls
Young athletes
Ascending ST
Horizontal ST

Figure 2.



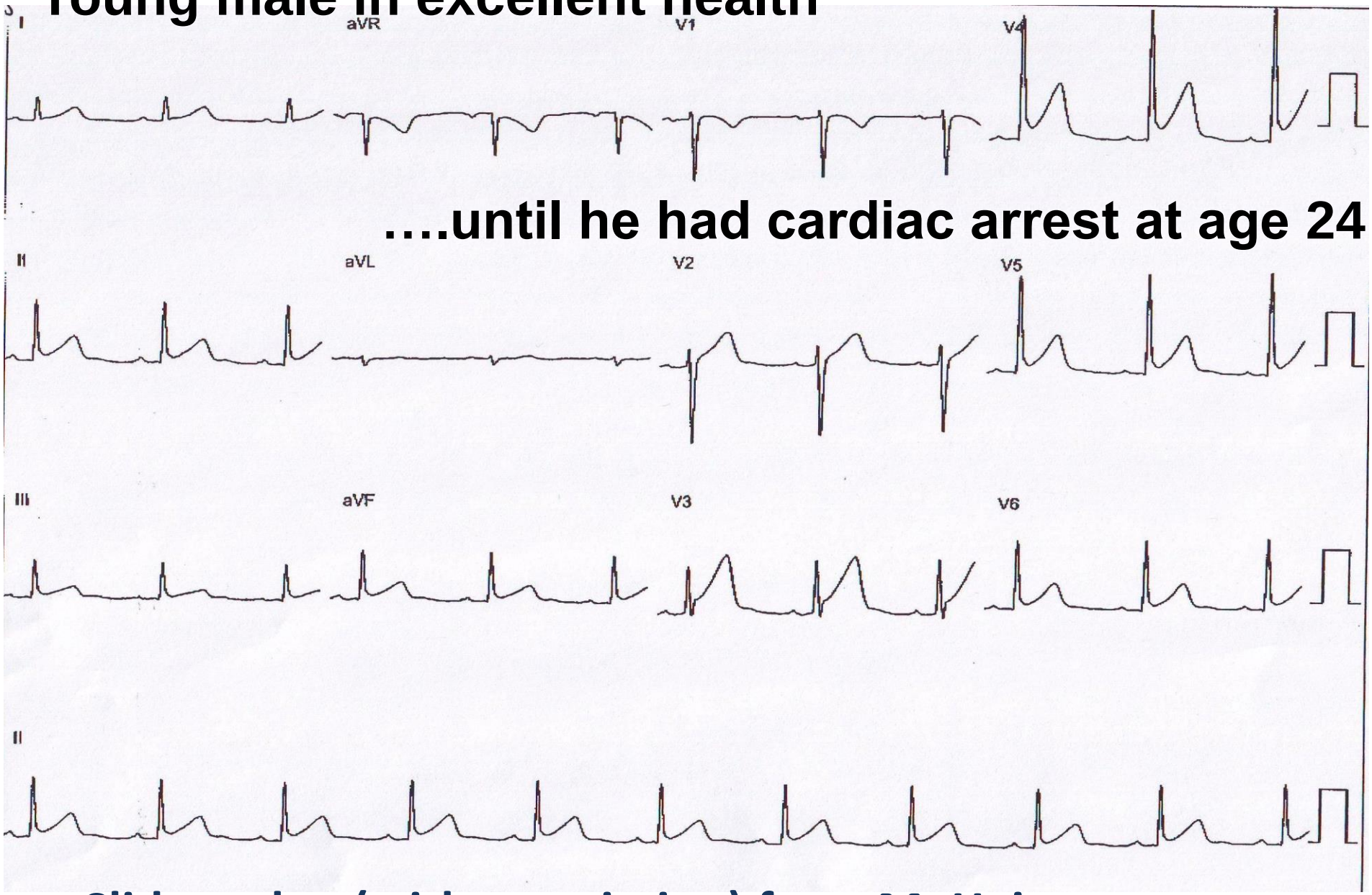
Rosso (Viskin), Heart*Rhythm* 2011 (in press).

State of the art: What do we know about the malignant form early repolarization.



Adler (Viskin), *JACC* 2013

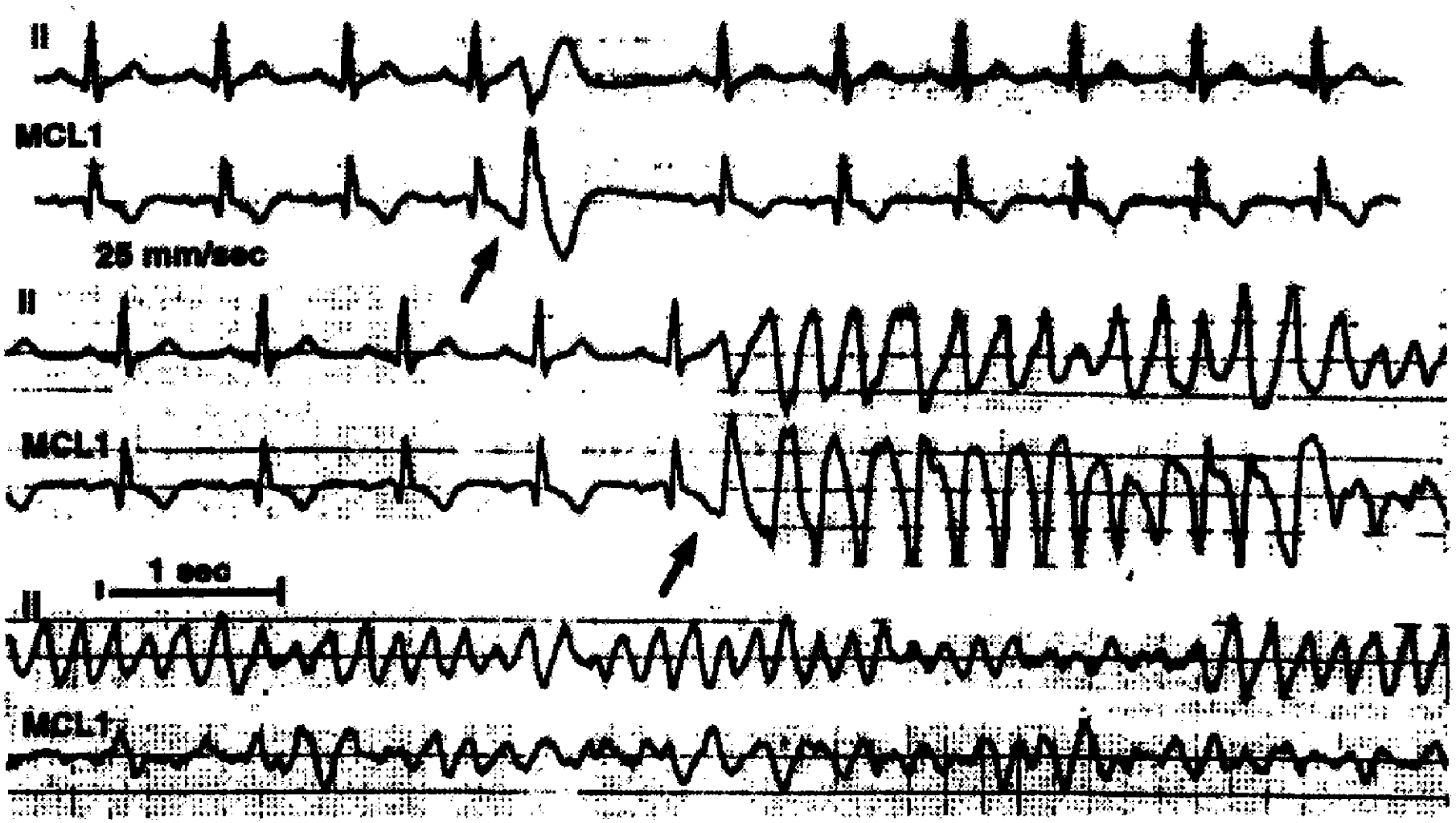
Young male in excellent health



….until he had cardiac arrest at age 24

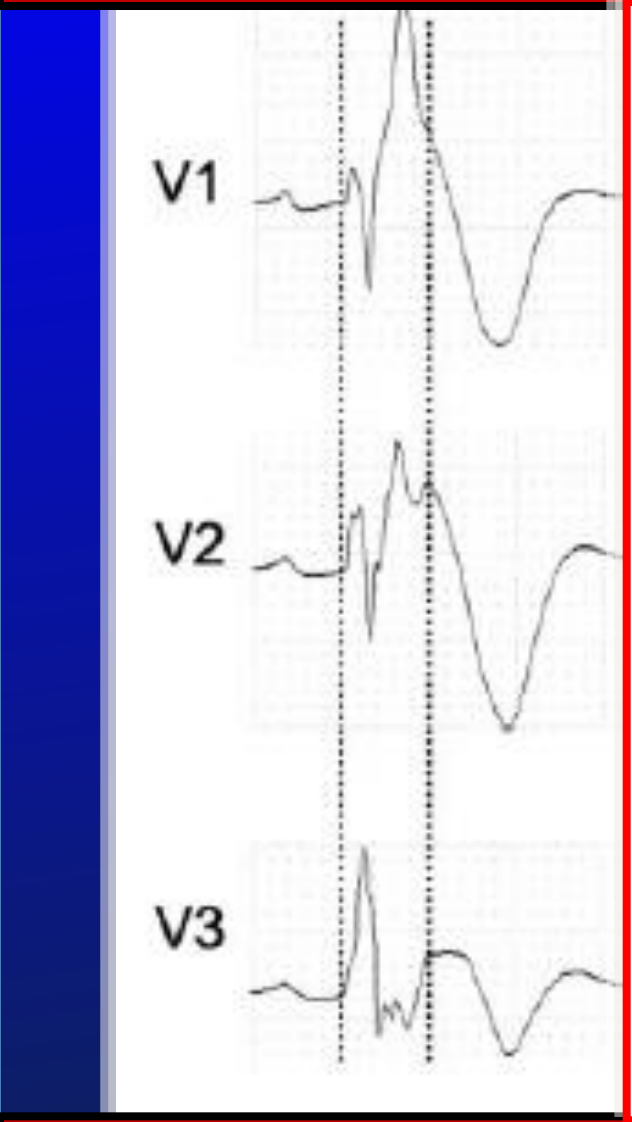
Slide stolen (with permission) from M. Haissaguerre.

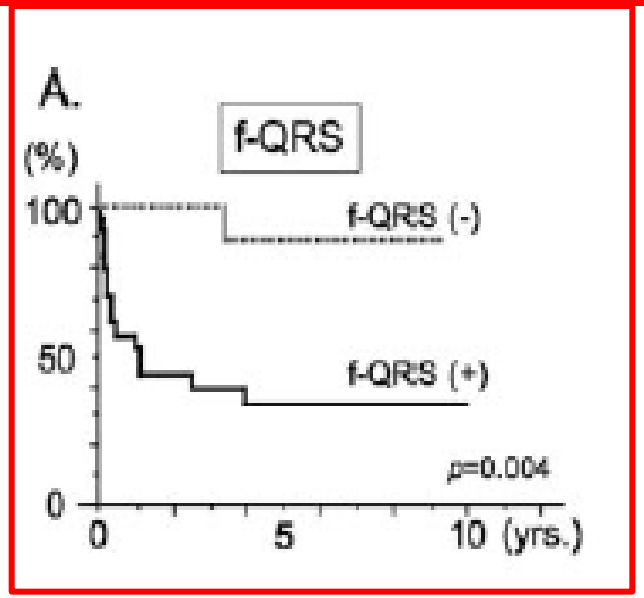
ECG MARKERS OF INCREASED RISK IN BRUGADA SYNDROME

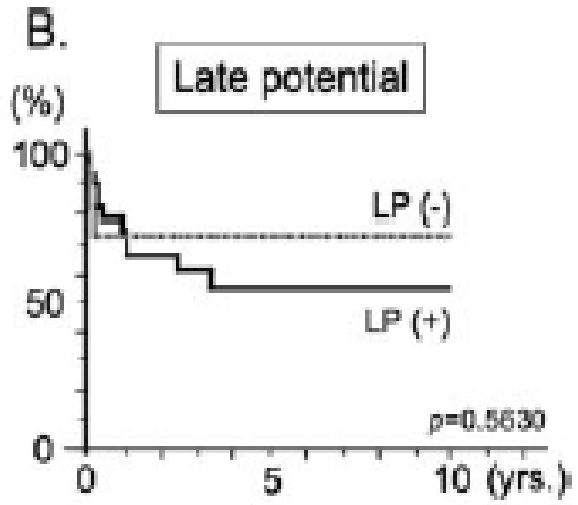


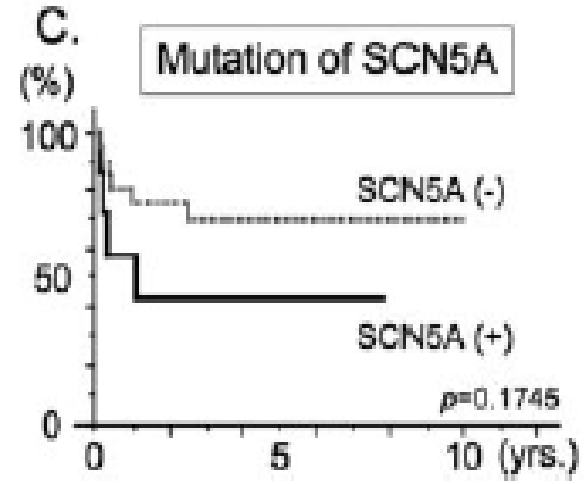
Viskin, *J Cardiovasc Electrophysiol* 1997

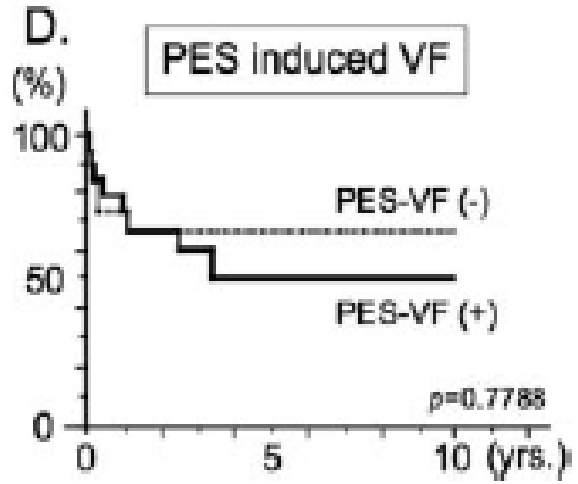
Fragmentation of the QRS complex in Brugada syndrome





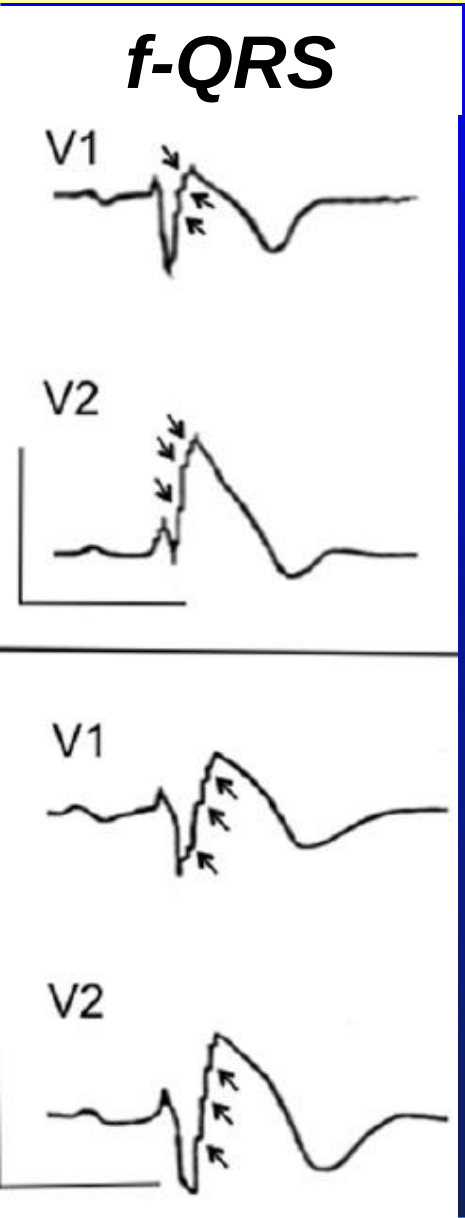


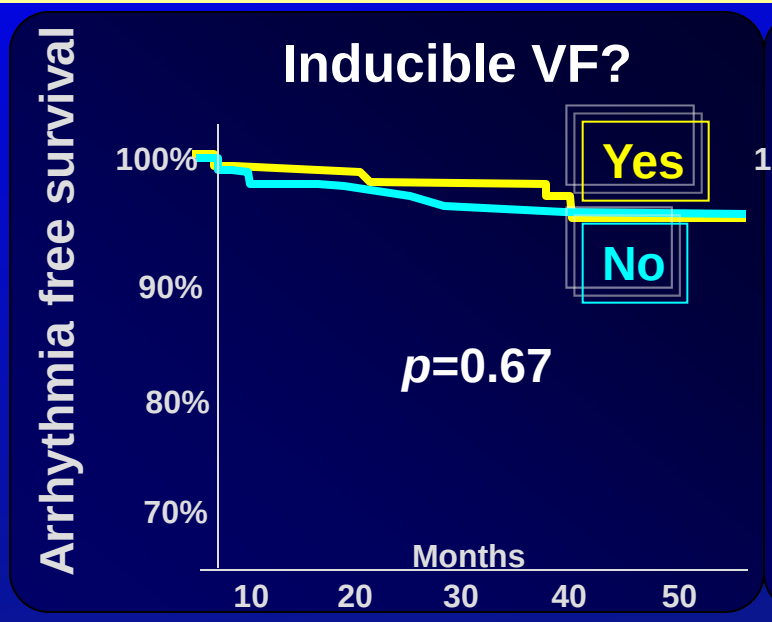


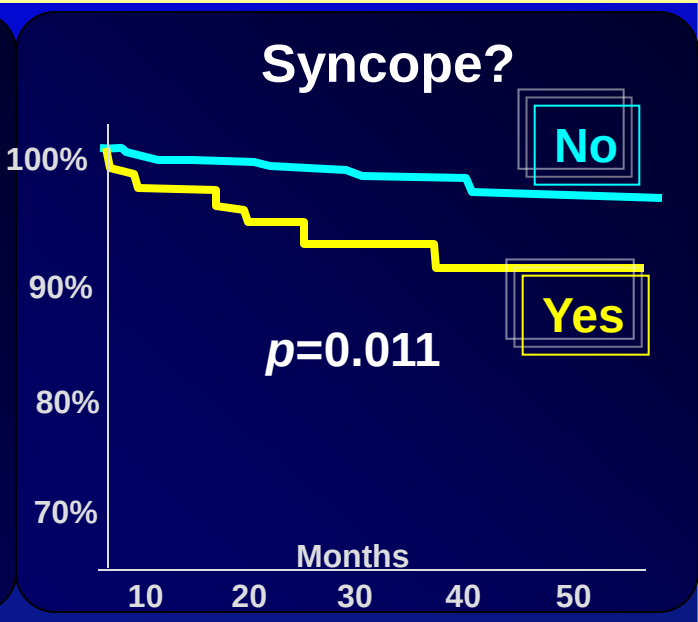


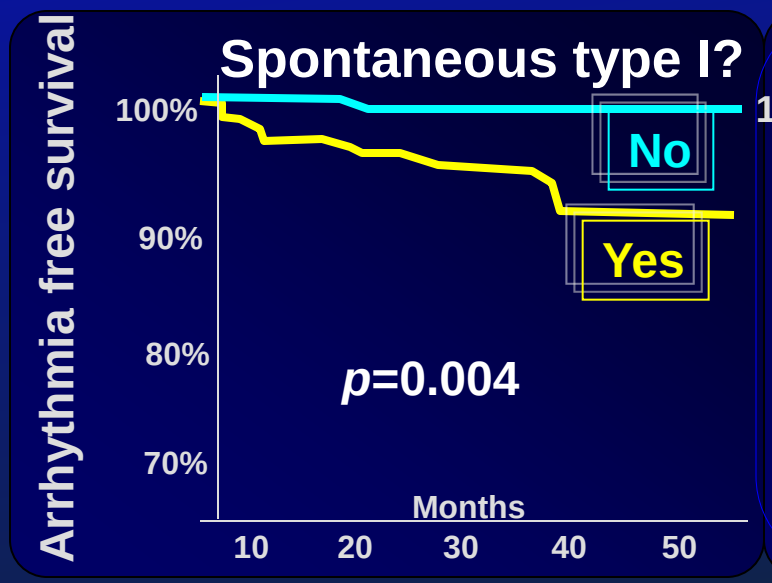
Morita, *Circulation* 2008

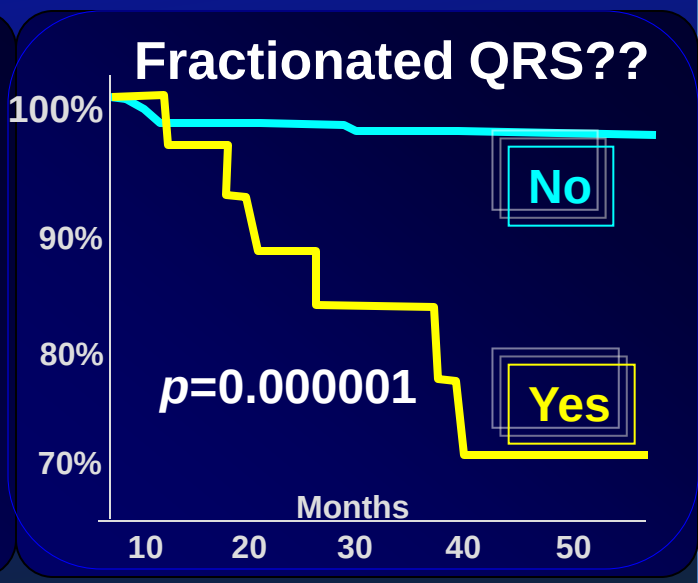
Risk stratification of Brugada syndrome:
The PRELUDE study (Priori, *JACC* 2012)





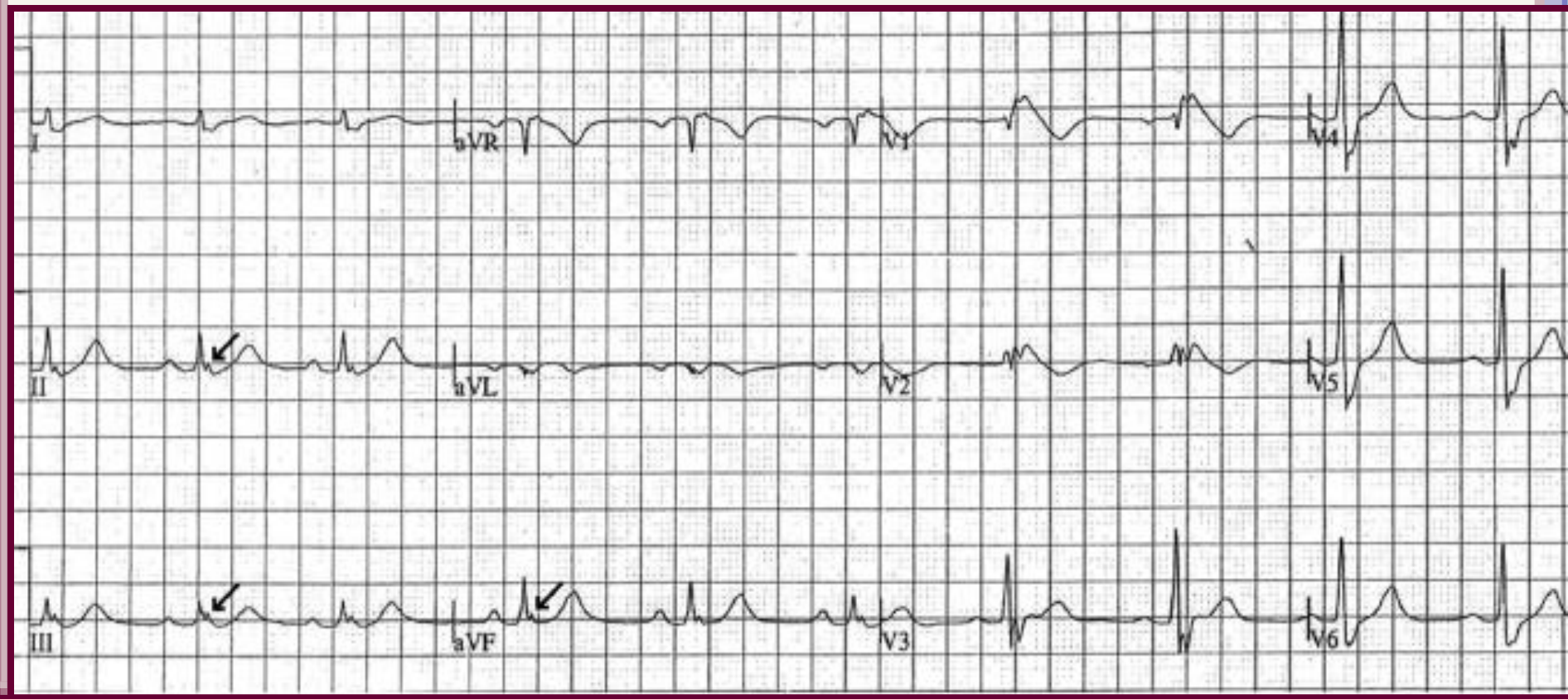






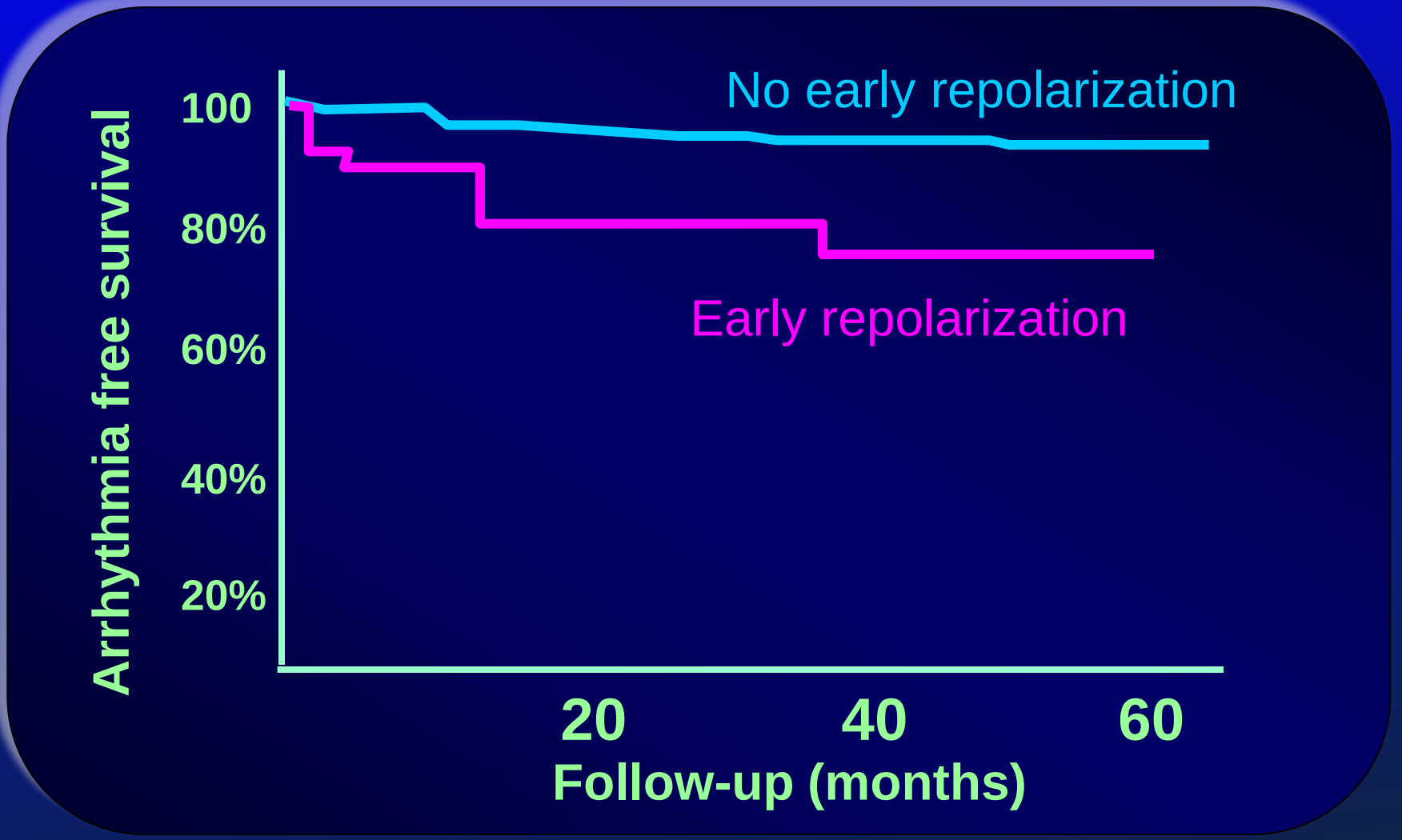
Inferior and Lateral Electrocardiographic Repolarization Abnormalities in Brugada Syndrome

Andrea Sarkozy, MD; Gian-Battista Chierchia, MD; Gaetano Paparella, MD; Tim Boussy, MD; Carlo De Asmundis, MD; Marcus Roos, MD; Stefan Henkens, RN; Leonard Kaufman, PhD; Ronald Buyl, MSc; Ramon Brugada, MD, PhD; Josep Brugada, MD, PhD; Pedro Brugada, MD, PhD



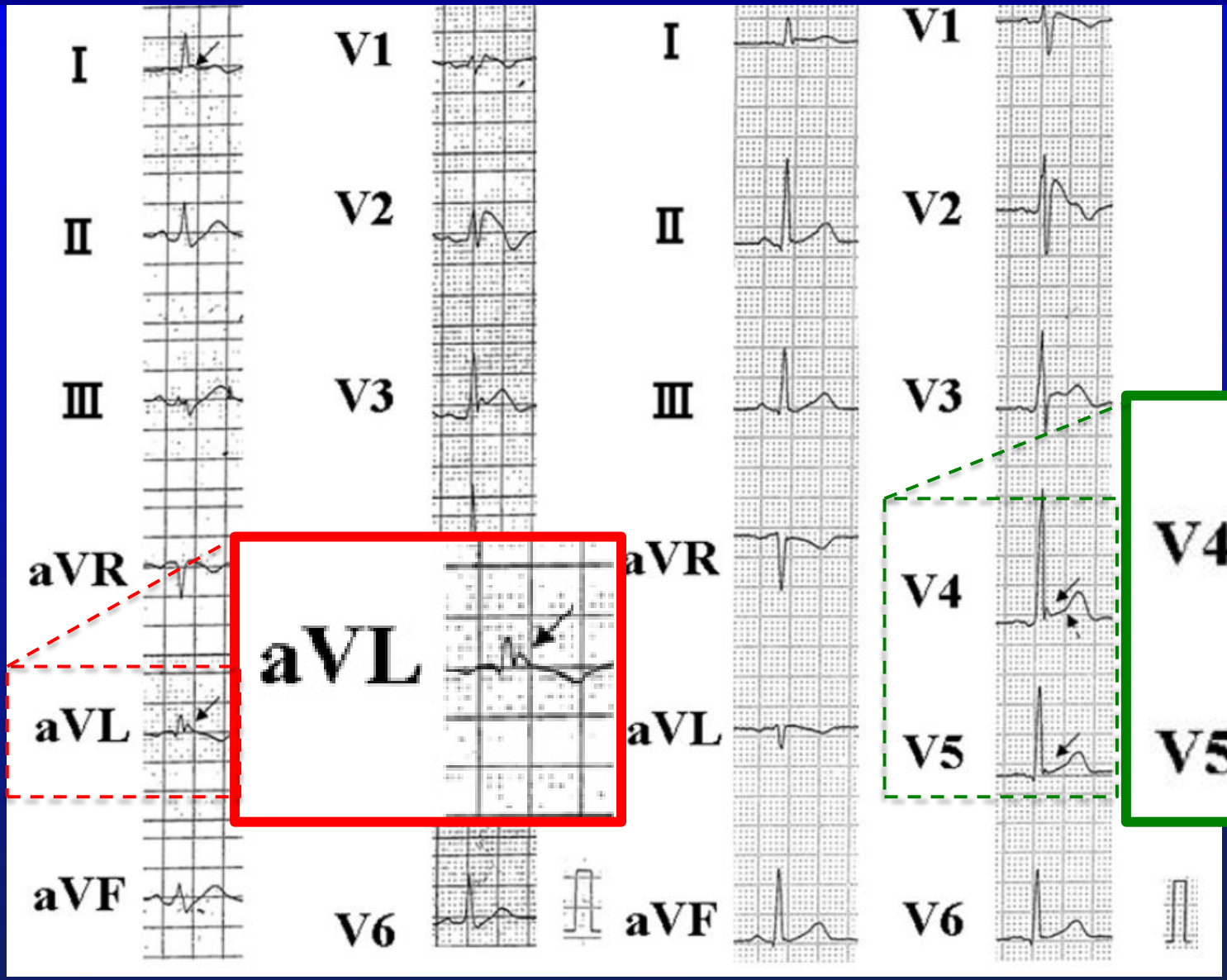
observed in the inferior leads. (*Circ Arrhythmia Electrophysiol.* 2009;2:154-161.)

Arrhythmia free survival in patients with Brugada syndrome with and without early-repolarization abnormalities in the inferior leads.



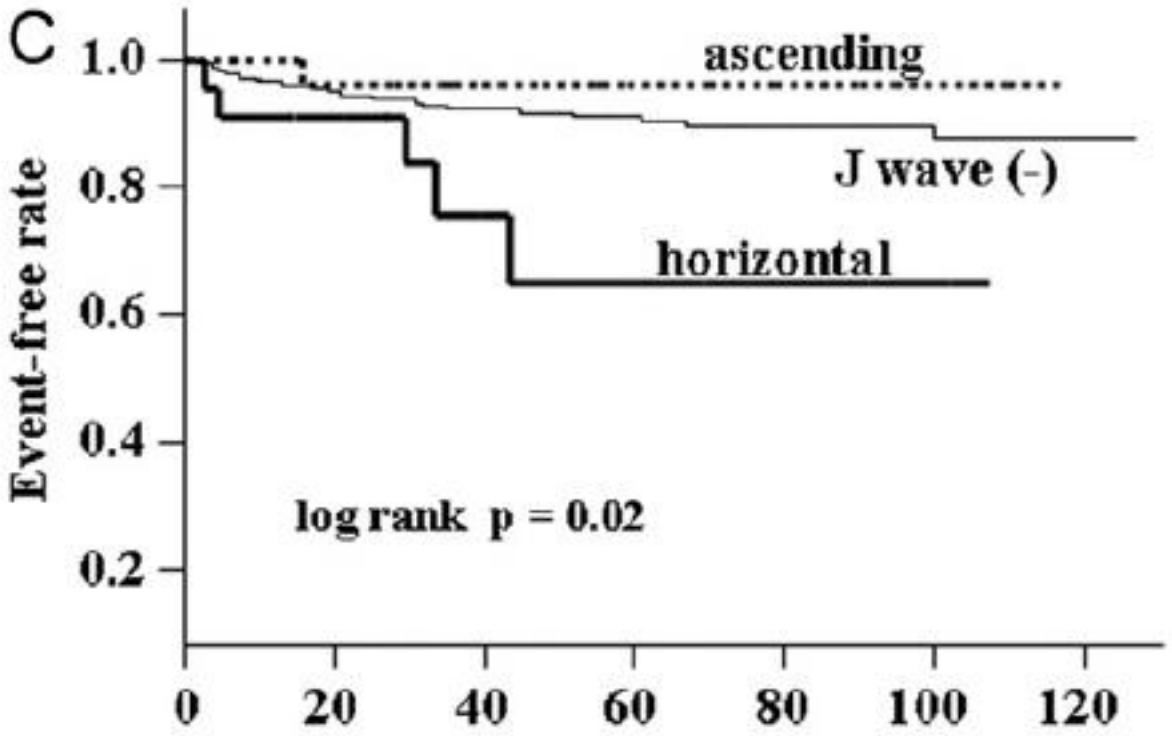
Kamakura, *Circ-EP* 2009

Prognostic value of early repolarization (J wave) and ST-segment morphology after J wave in Brugada syndrome.



Takagi, Heart*Rhythm* 2013

Prognostic value of early repolarization (J wave) and ST-segment morphology after J wave in Brugada syndrome.



Number at risk

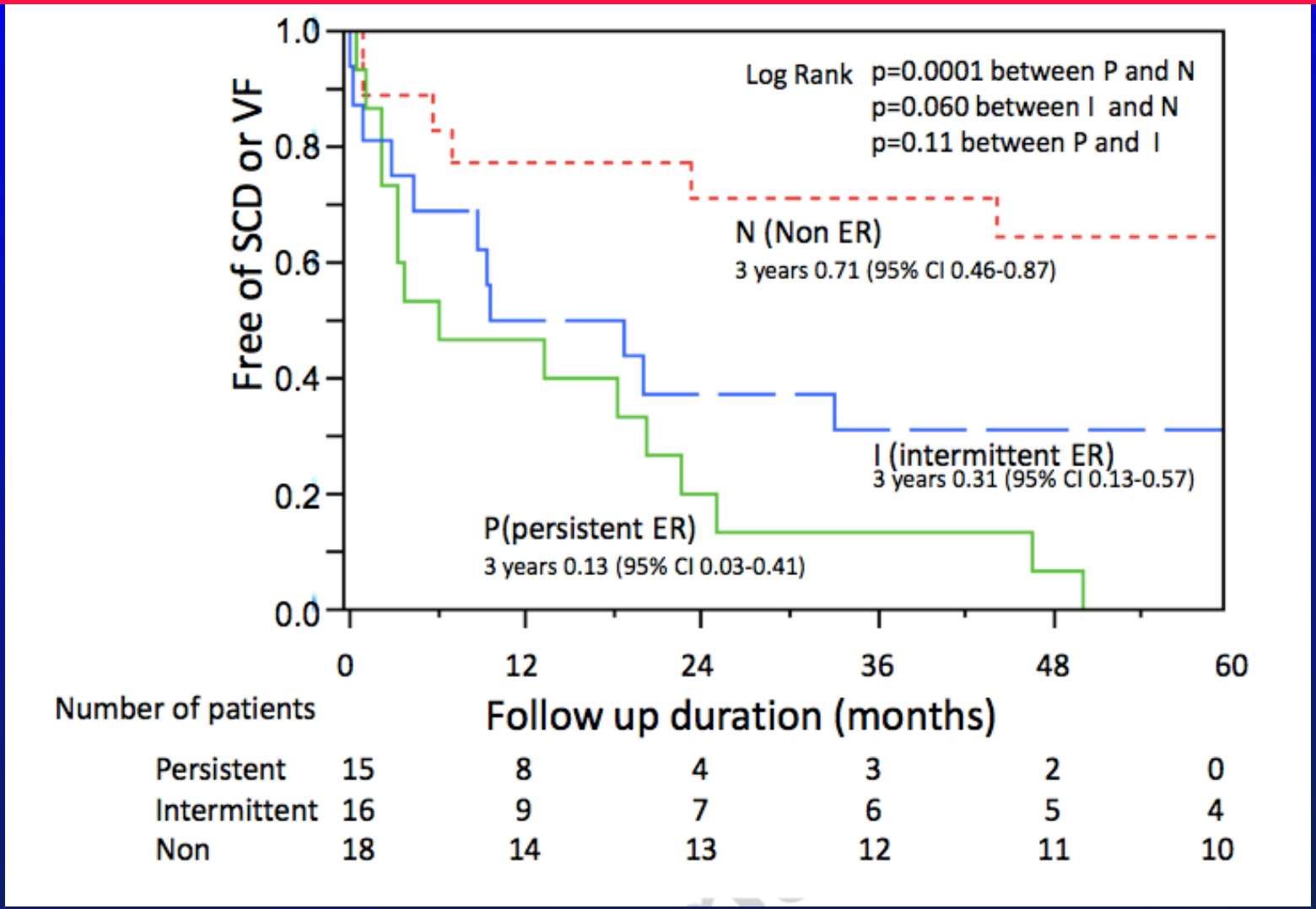
ascending	30	26	17	12	10	7	1
J wave (-)	407	339	212	139	88	44	2
horizontal	23	20	10	7	5	3	1

Takagi, Heart*Rhythm* 2013

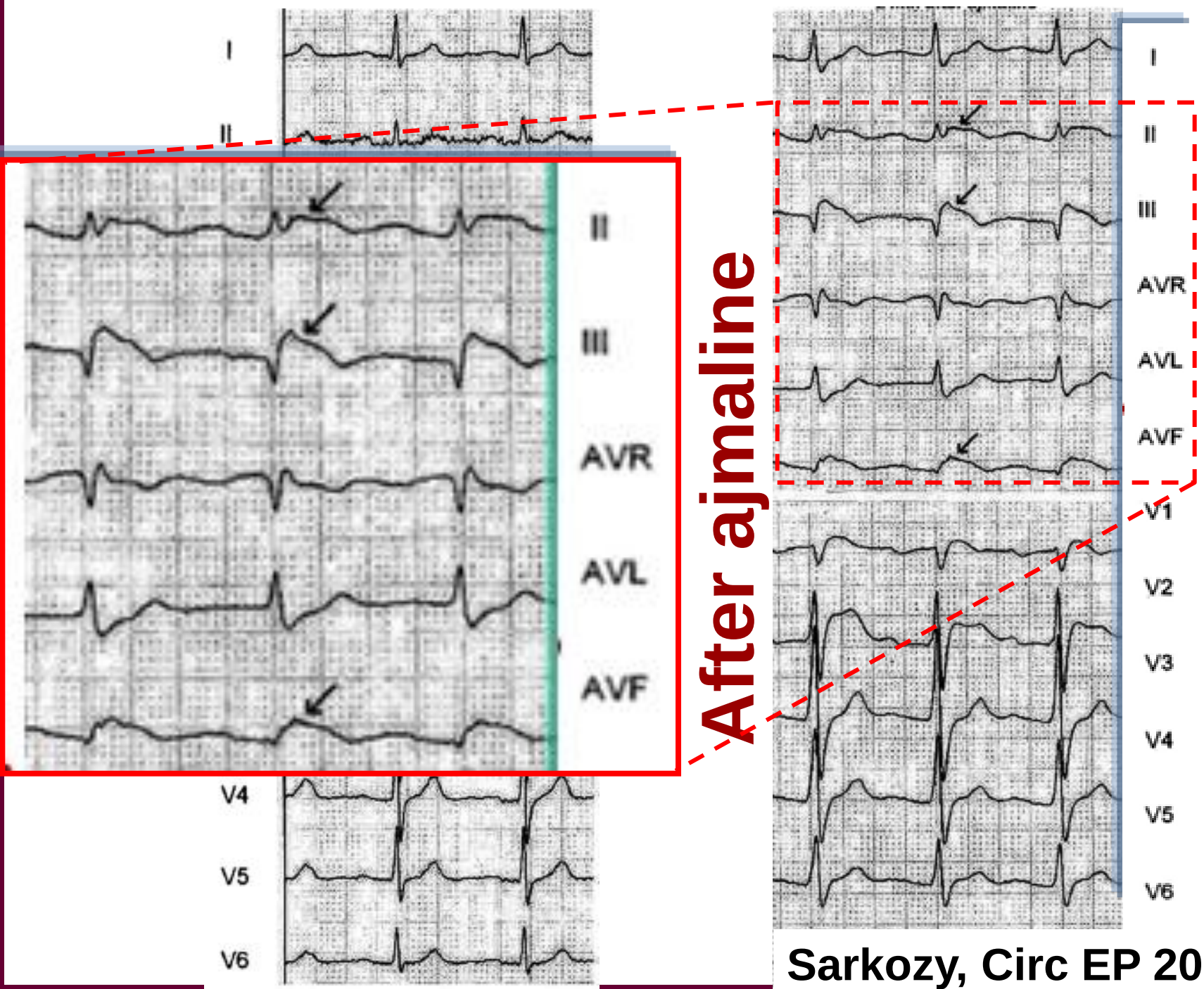
Prognostic significance of early repolarization in infero-lateral leads in Brugada patients with documented ventricular fibrillation
~A novel risk factor for Brugada syndrome ~

Kawata, Heart*Rhythm* 2013

Prognostic significance of early repolarization in infero-lateral leads in Brugada patients with documented ventricular fibrillation ~A novel risk factor for Brugada syndrome ~



Kawata, Heart*Rhythm* 2013

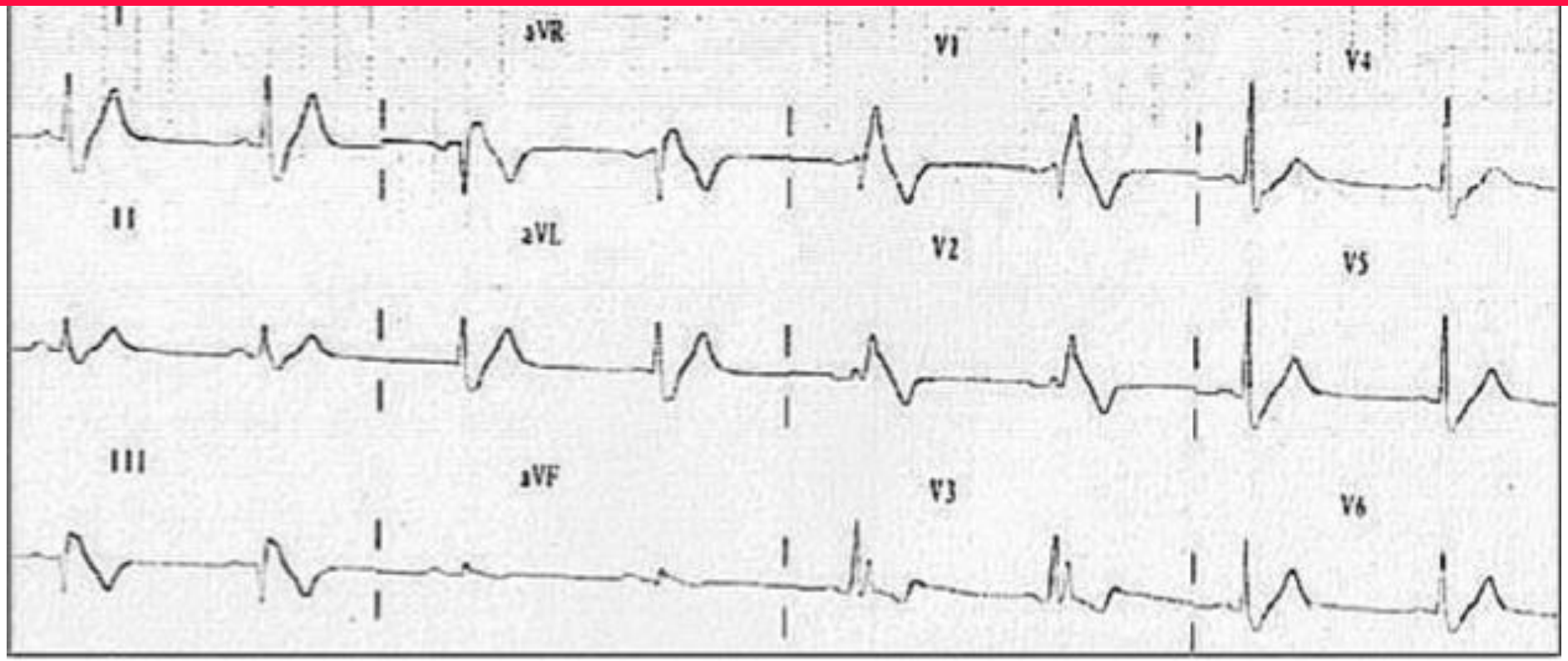


Sarkozy, Circ EP 2009

Type I Brugada pattern in the peripheral leads.

Rollin, Heart*Rhythm* 2013

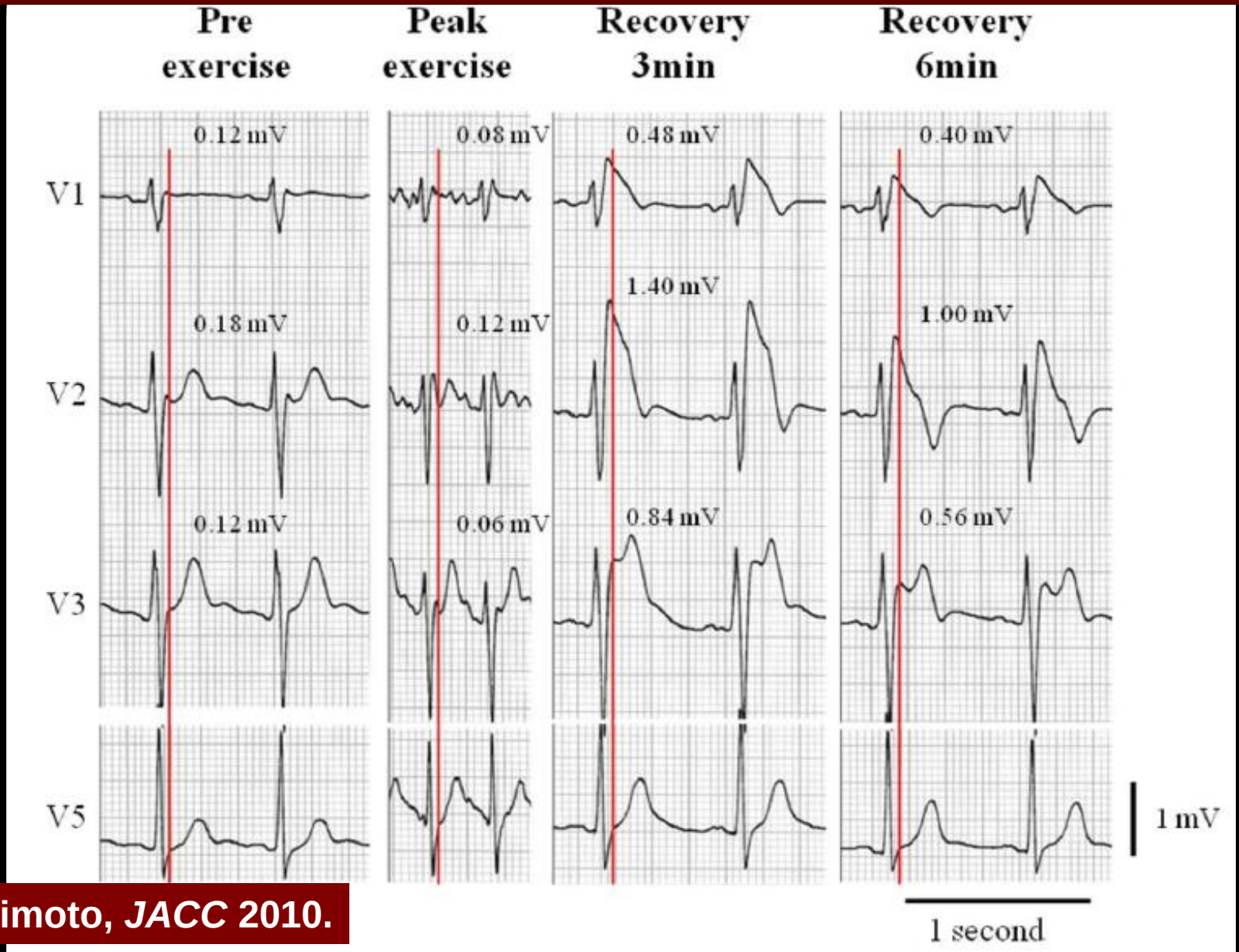
Type I Brugada pattern in the peripheral leads.



Multivariate analysis	OR (95%CI)	p =
Type 1 ST elevation in peripheral leads	4.58 (1.70-12.32)	0.0025
Spontaneous type 1 ST elevation	2.43 (1.01-5.84)	0.047
Syncope	2.34 (0.99-5.50)	0.051
Familial SD	1.99 (0.84-4.69)	0.11

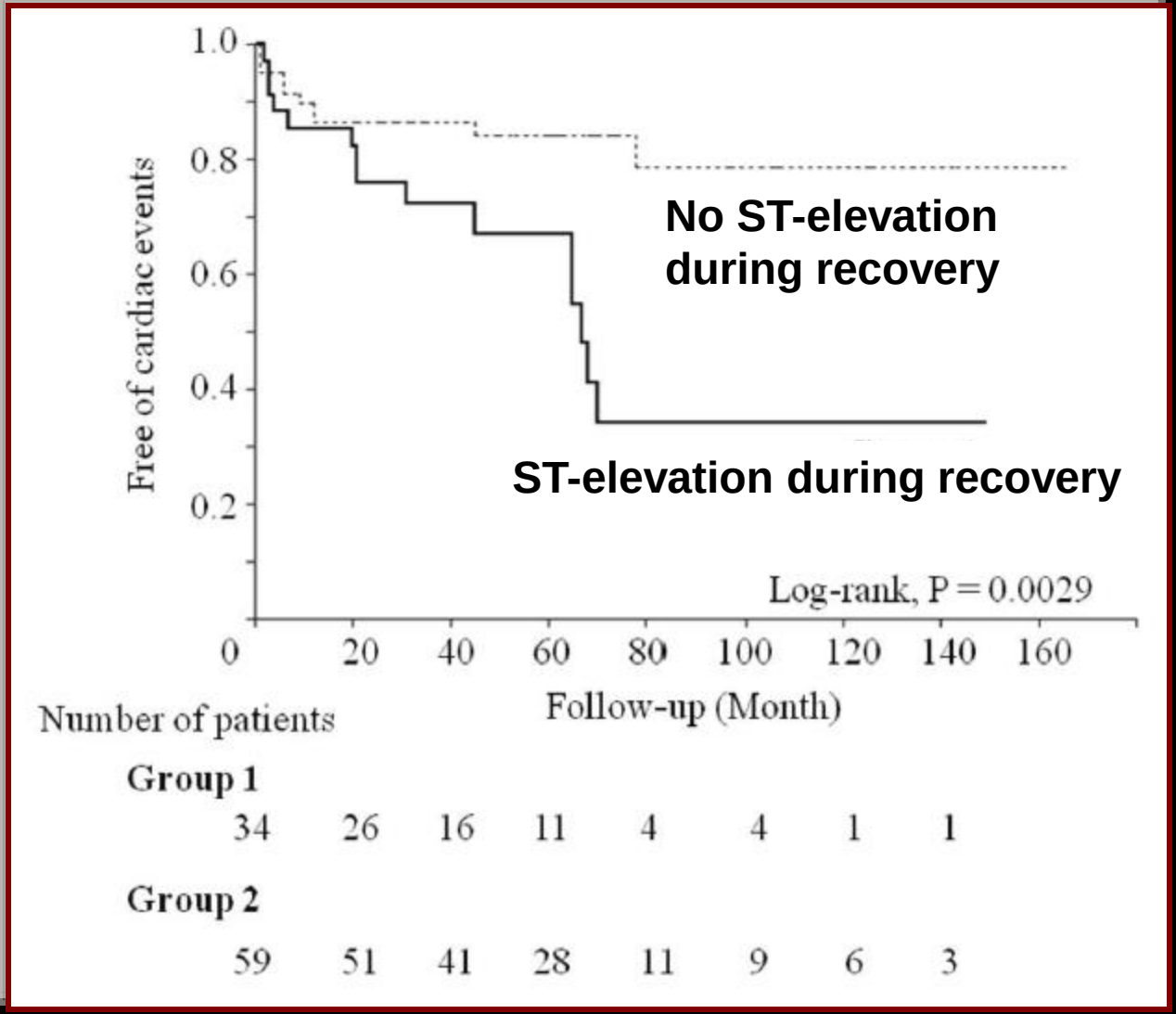
Rollin, Heart*Rhythm* 2013

ST-segment elevation during the recovery phase of exercise test in Brugada syndrome



Makimoto, *JACC* 2010.

ST-segment elevation during the recovery phase of exercise test in Brugada syndrome



Makimoto, *JACC* 2010.

Thank you