ĐIỆN TÂM ĐỒ HỘI CHỨNG RỐI LOẠN NHỊP BẨM SINH

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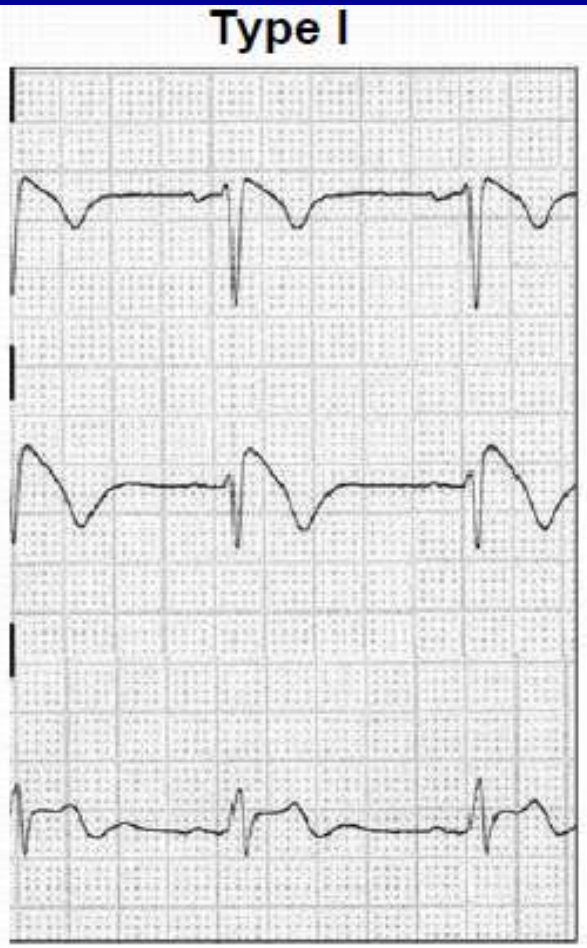
Vietnam National Heart Institute.

BIẾN ĐỔI GENE VÀ CÁC LOẠI RỐI LOẠN NHỊP TIM.

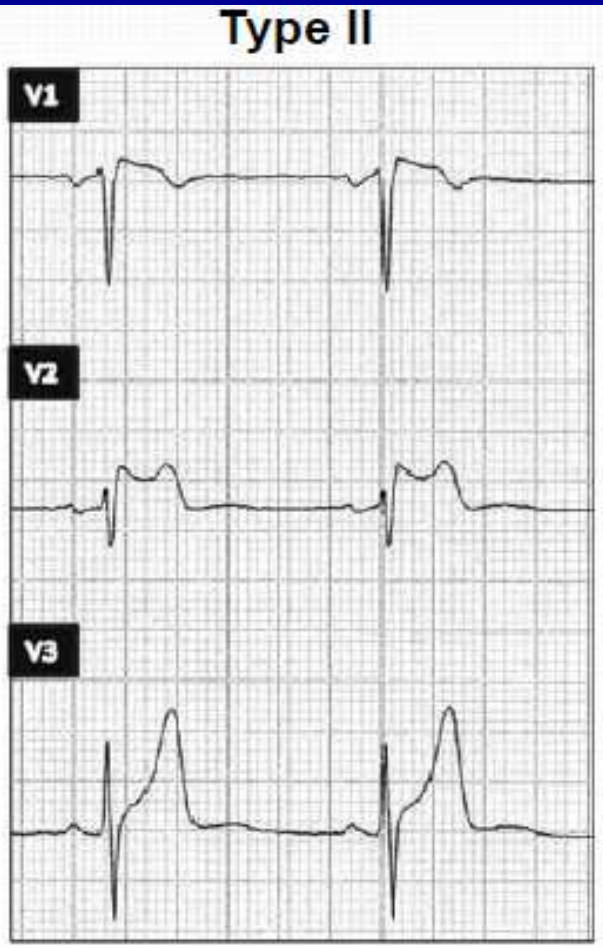
- Biến đổi gen và các rối loạn nhịp tim :
  - ✓ H.c Brugada.
  - ✓ H.c QT dài
  - ✓ H.c QT ngắn
  - ✓ Hc Tái cựu sớm.
  - ✓ Loạn sản thất phải (ARVD)
  - ✓ Tim nhanh thất đa hình
  - ✓ H.c W-P-W
  - ✓ Rung nhĩ

HỘI CHỨNG BRUGADA

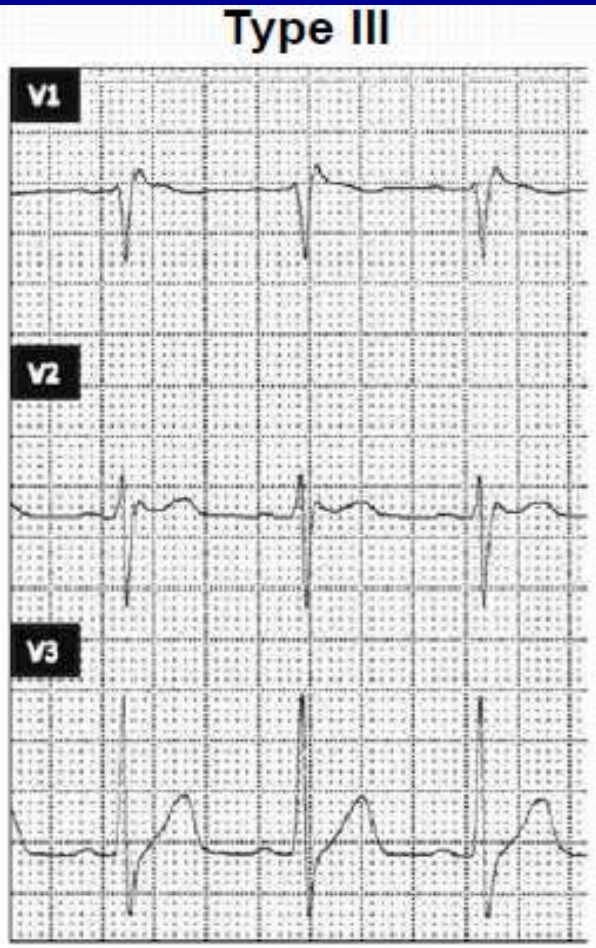
ĐIỆN TÂM ĐỒ TRONG HỘI CHỨNG BRUGADA



coved ST elevation
with inverted T



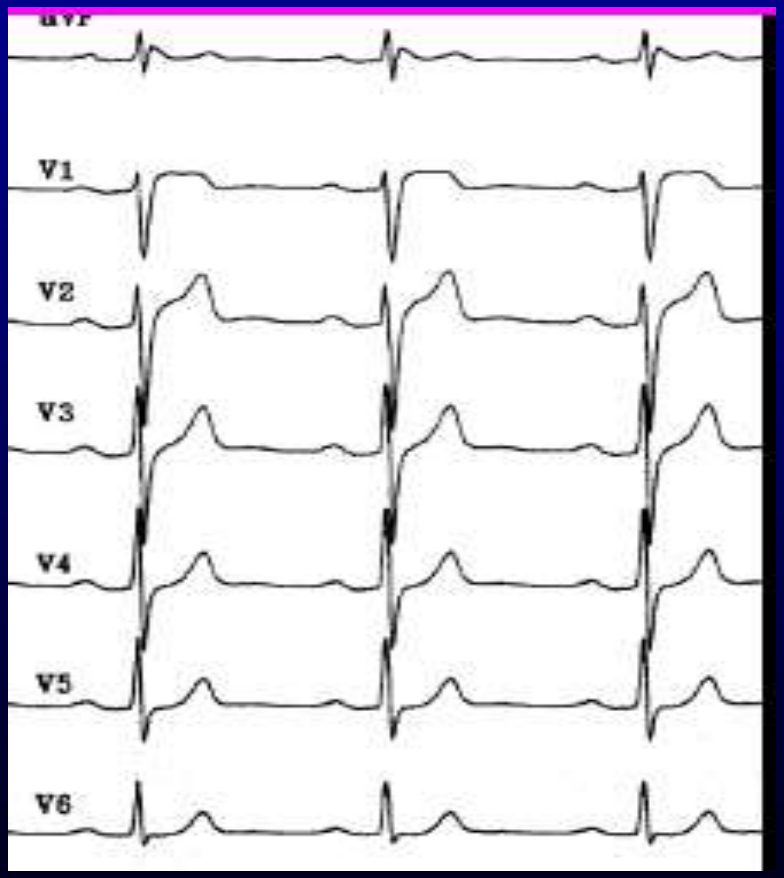
saddled ST elevation
≥ 1 mm with upright or
biphasic T



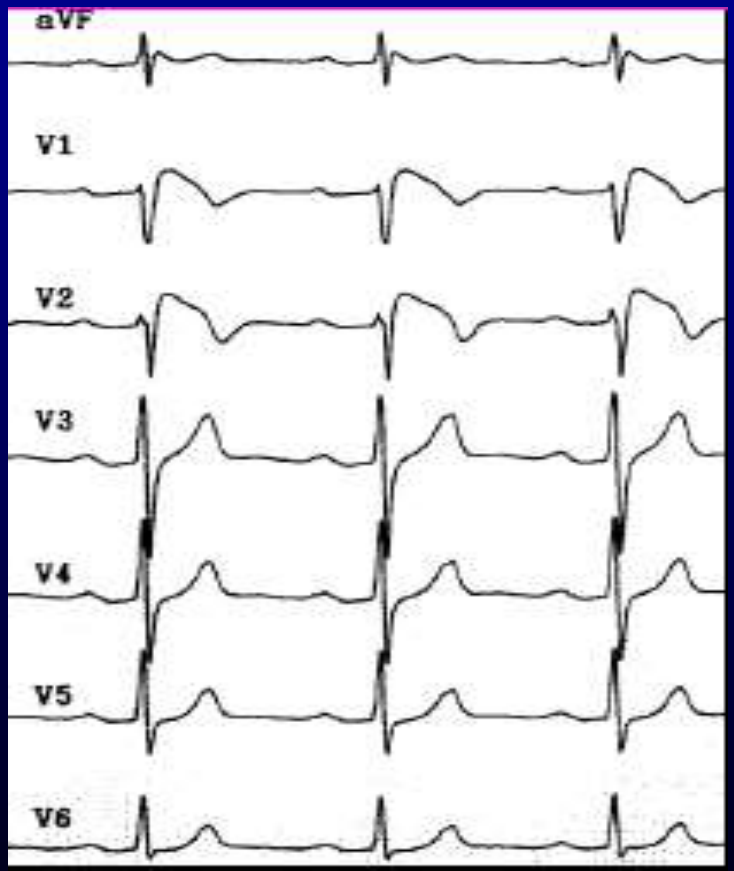
saddled ST elevation
< 1 mm with upright or
biphasic T

VỊ TRÍ ĐẶT ĐIỆN CỰC

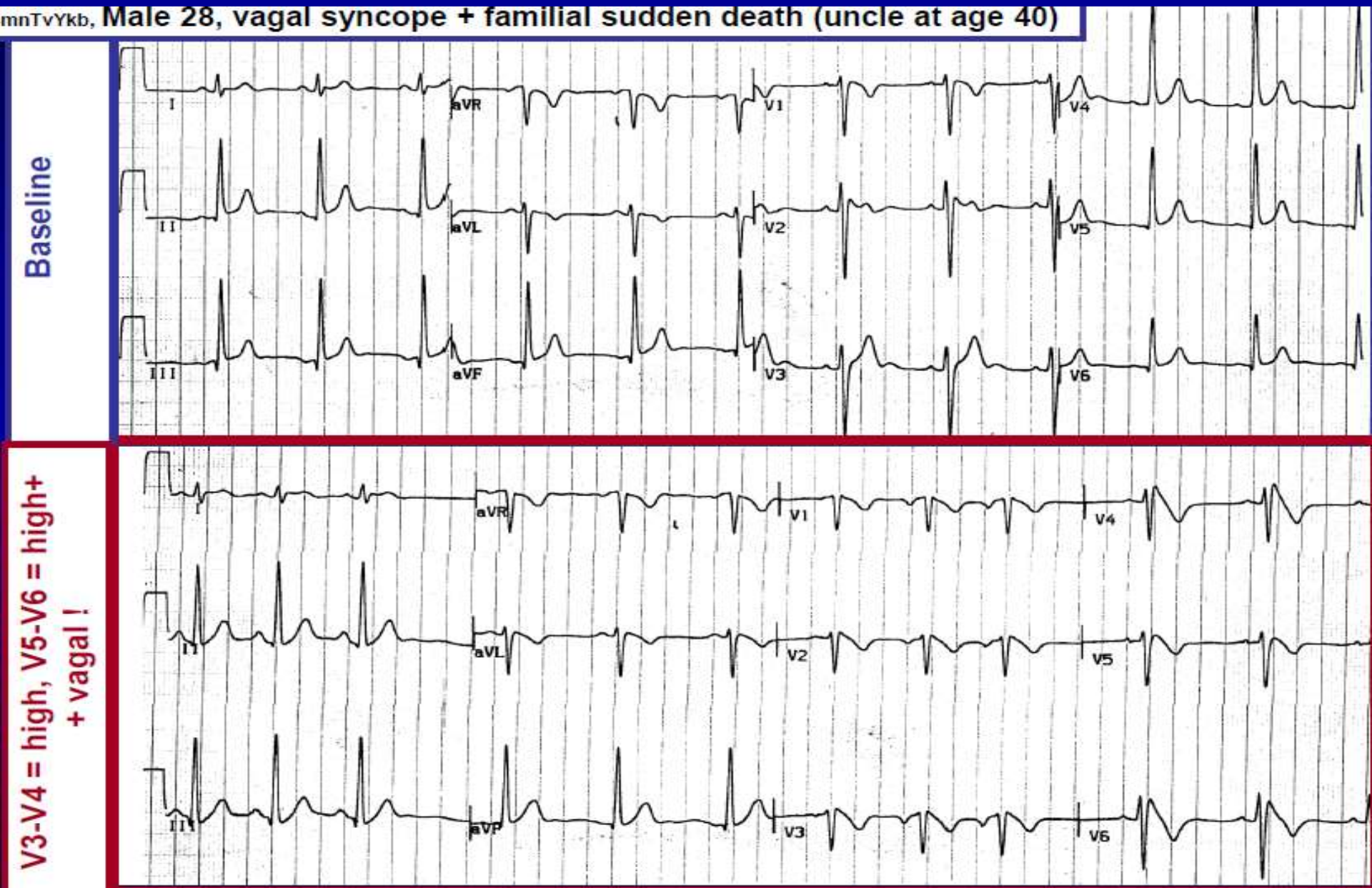
Vị trí V1-V3 bình thường



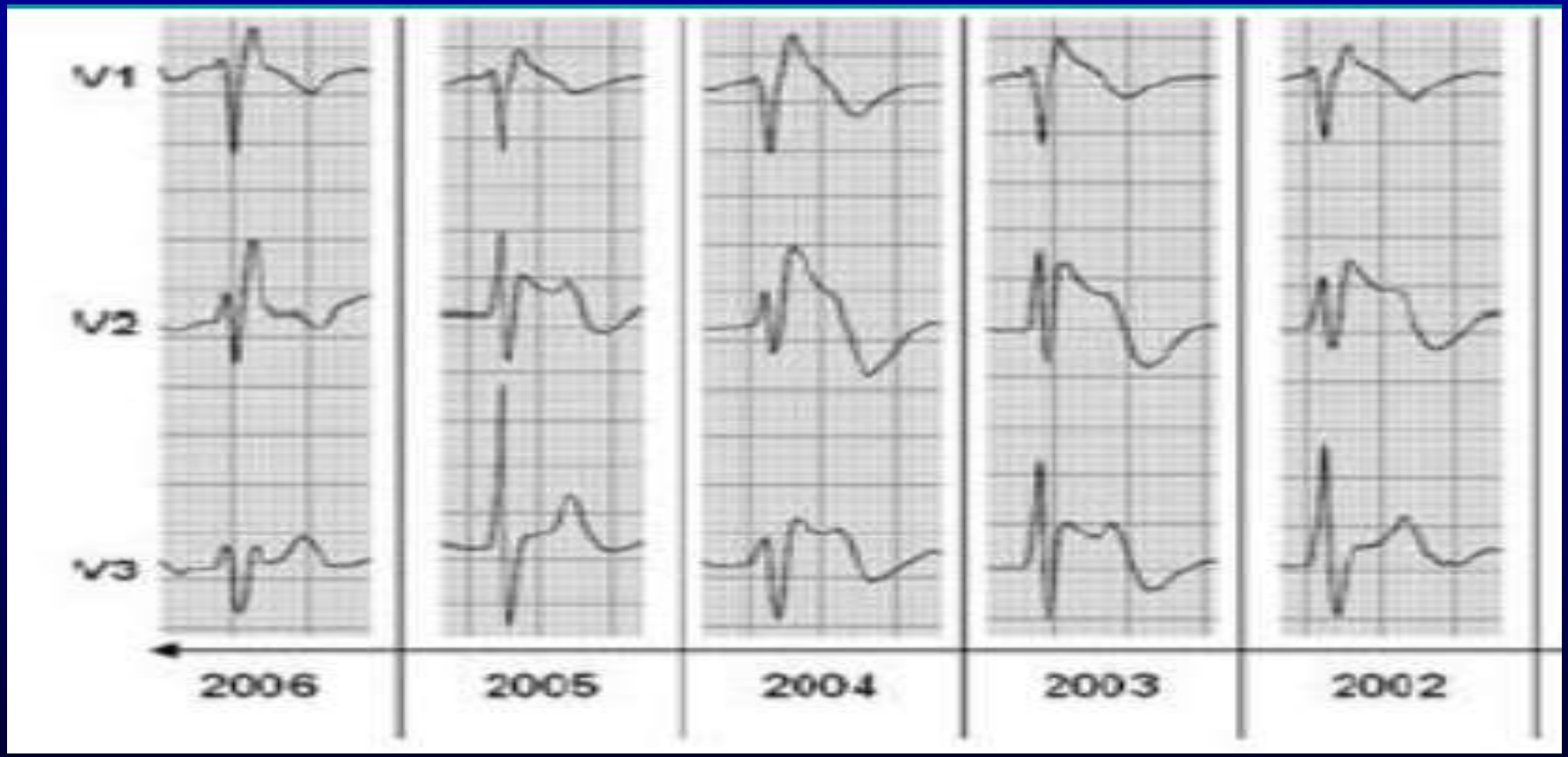
Vị trí V1-V3 cao



HỘI CHỨNG BRUGADA

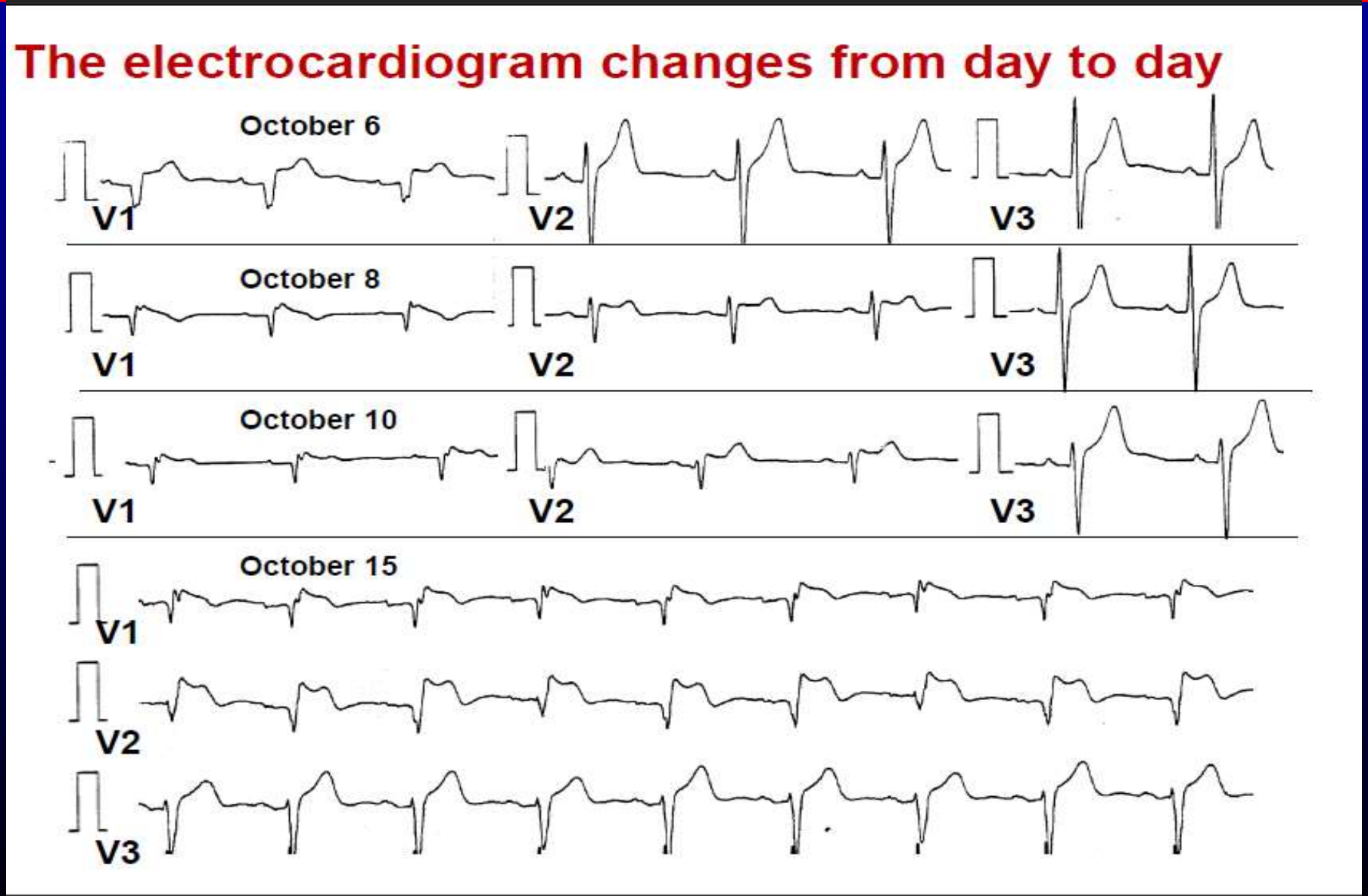


THAY ĐỔI HÌNH ẢNH ĐTĐ QUA NĂM THÁNG



Richter JCE 2009

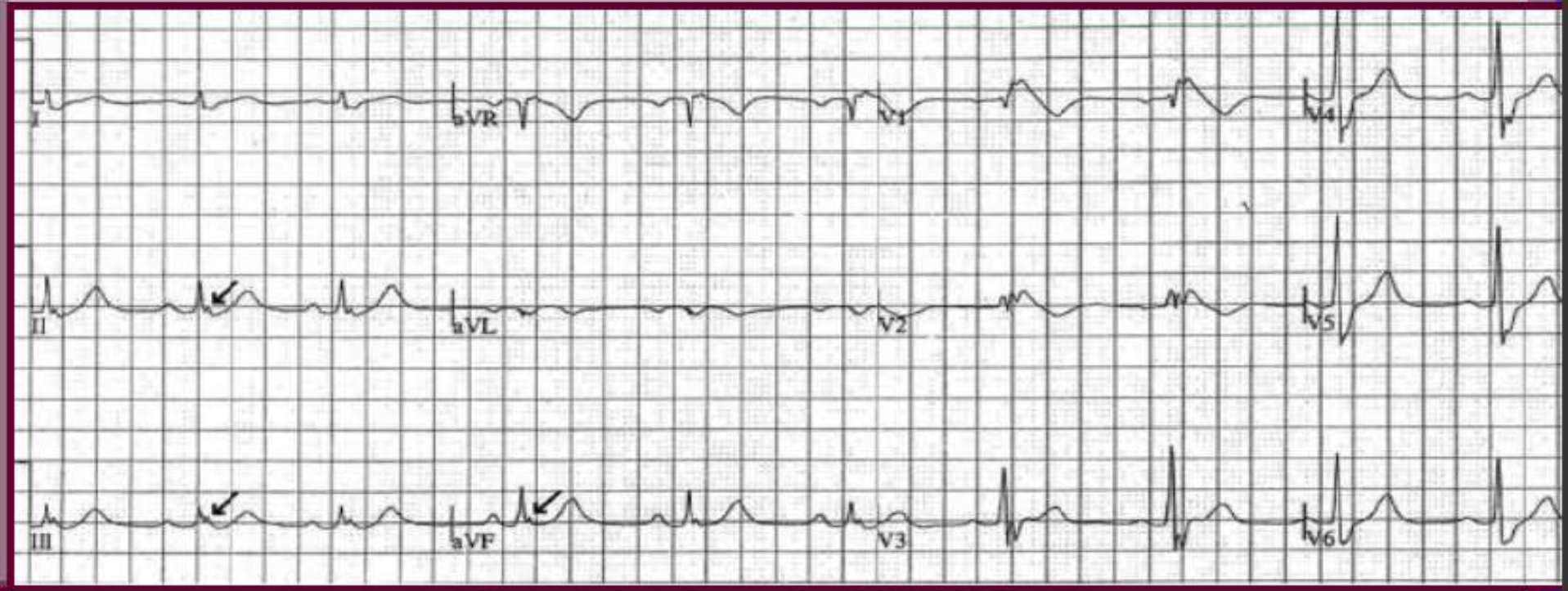
HỘI CHỨNG BRUGAGA



HỘI CHỨNG BRUGADA

Inferior and Lateral Electrocardiographic Repolarization Abnormalities in Brugada Syndrome

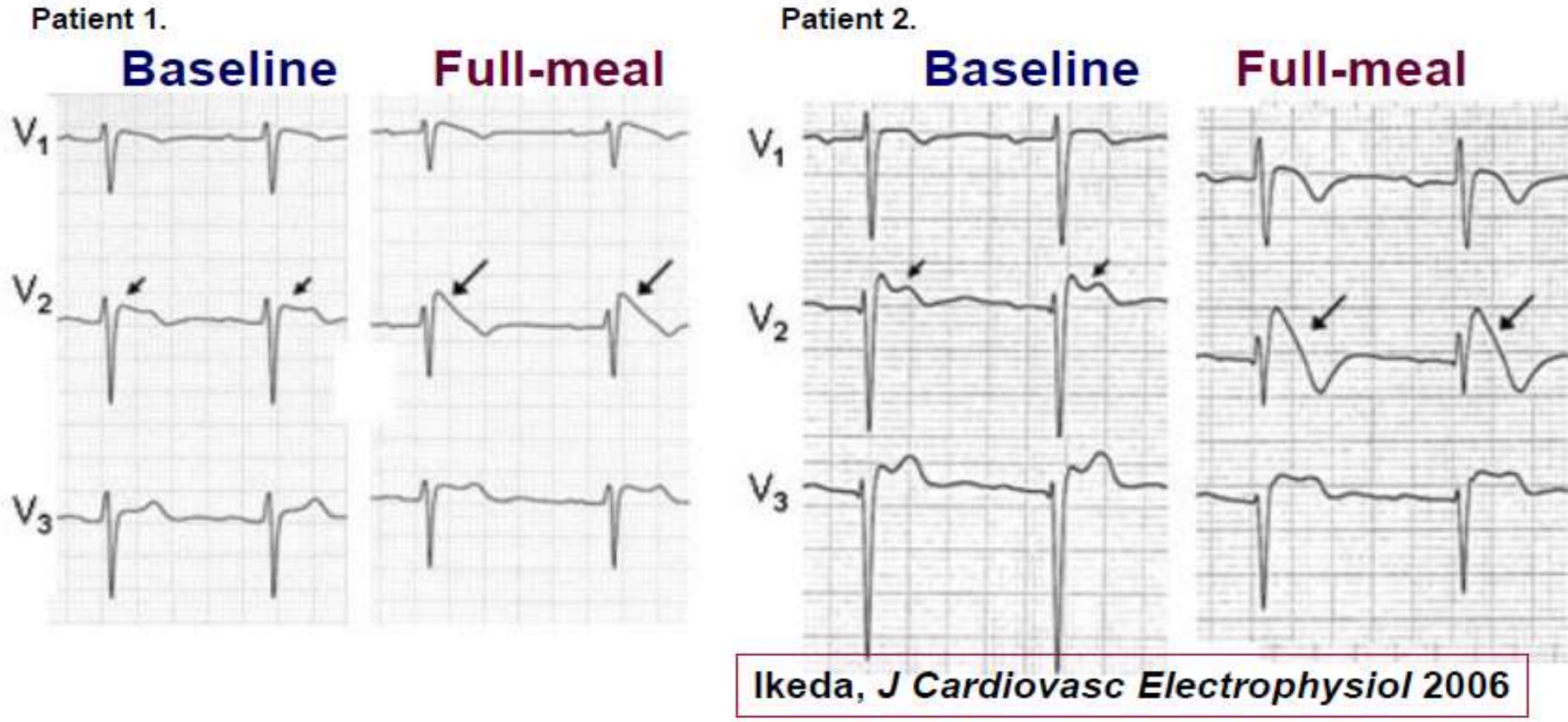
Andrea Sarkozy, MD; Gian-Battista Chierchia, MD; Gaetano Paparella, MD; Tim Boussy, MD; Carlo De Asmundis, MD; Marcus Roos, MD; Stefan Henkens, RN; Leonard Kaufman, PhD; Ronald Buyl, MSc, Ramon Brugada, MD, PhD; Josep Brugada, MD, PhD; Pedro Brugada, MD, PhD



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

HỘI CHỨNG BRUGADA

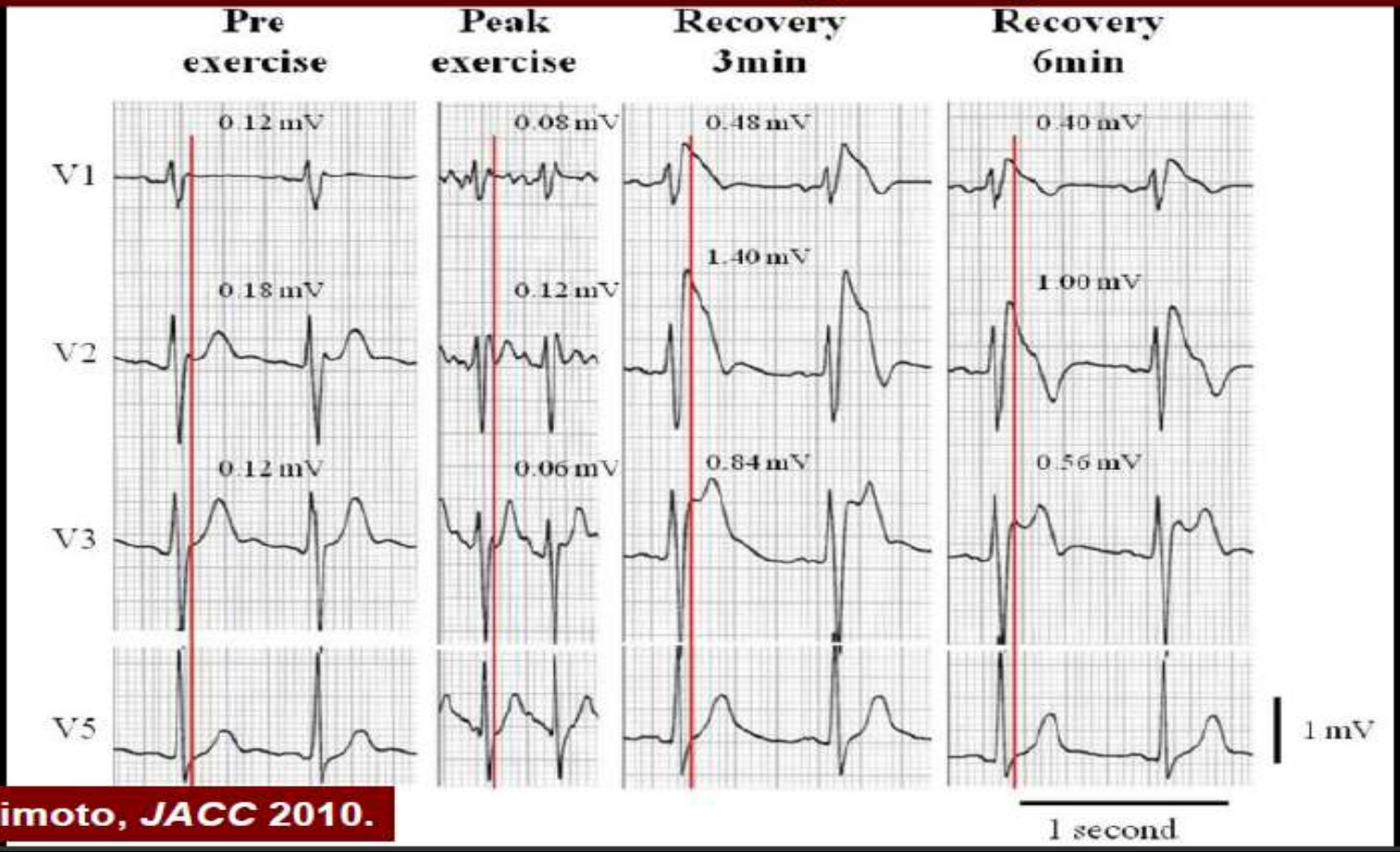
Effects of a large meal on the ST elevation in patients with Brugada syndrome



Ikeda, *J Cardiovasc Electrophysiol* 2006

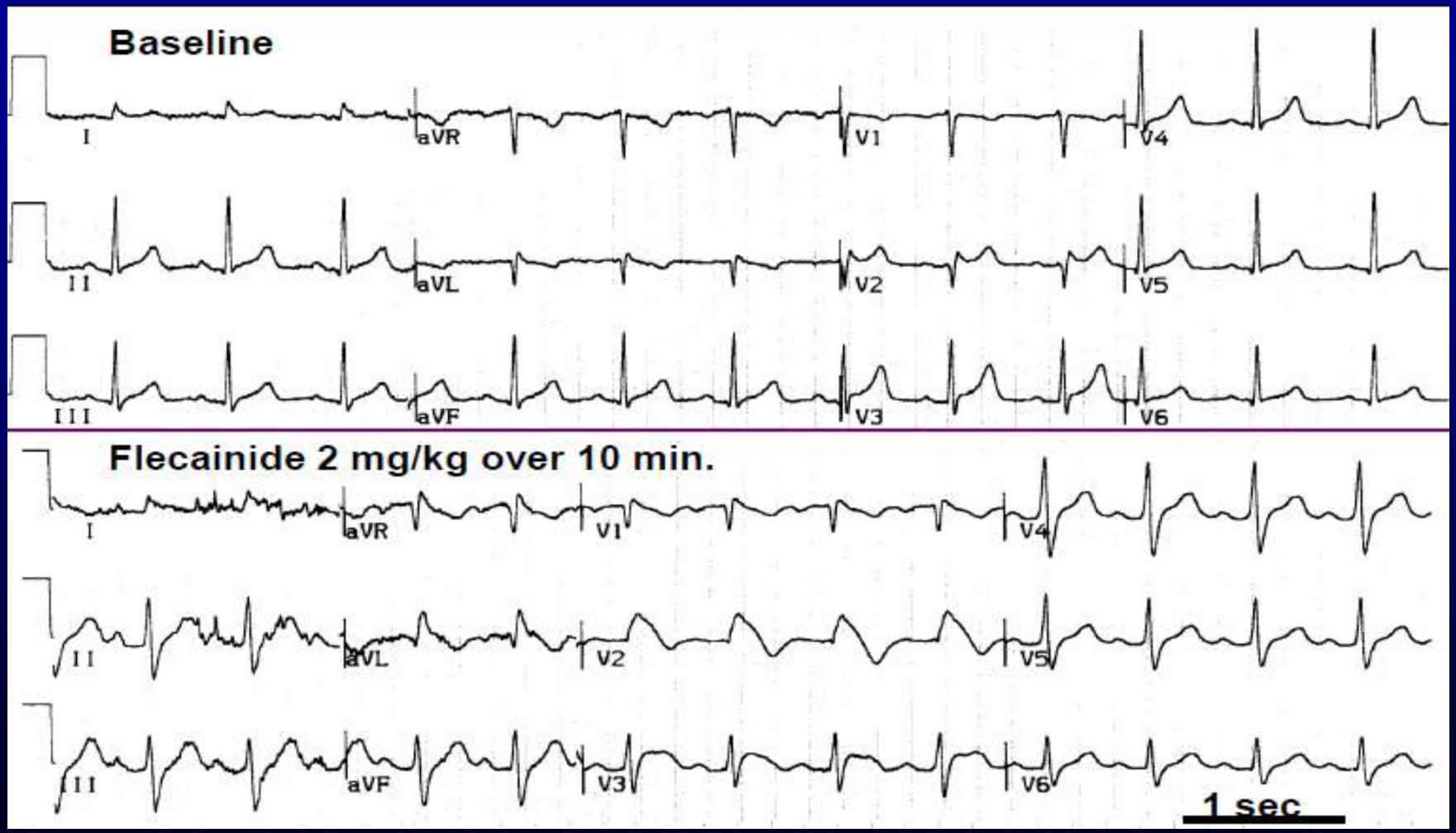
HỘI CHỨNG BRUGADA

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

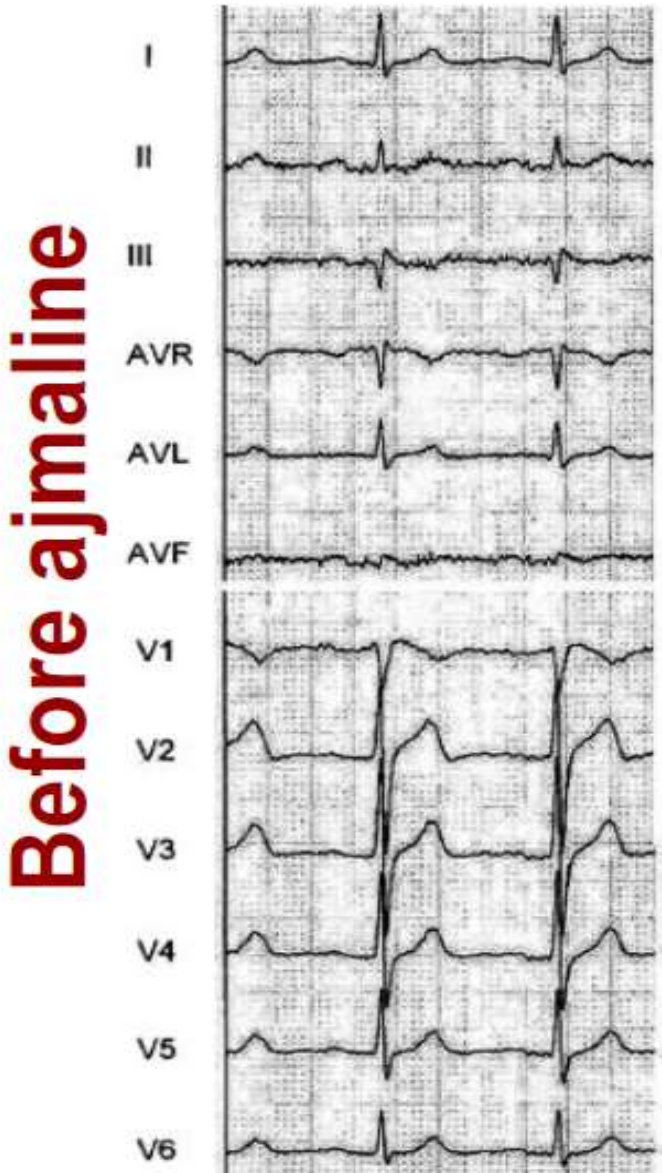


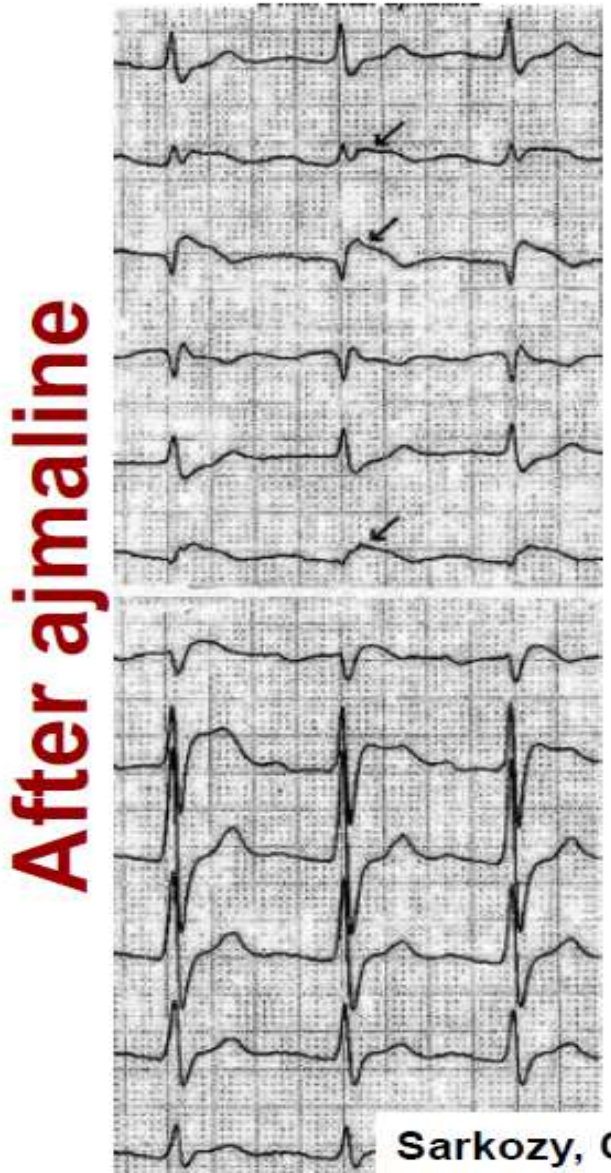
Makimoto, *JACC* 2010.

HỘI CHỨNG BRUGADA



HỘI CHỨNG BRUGADA

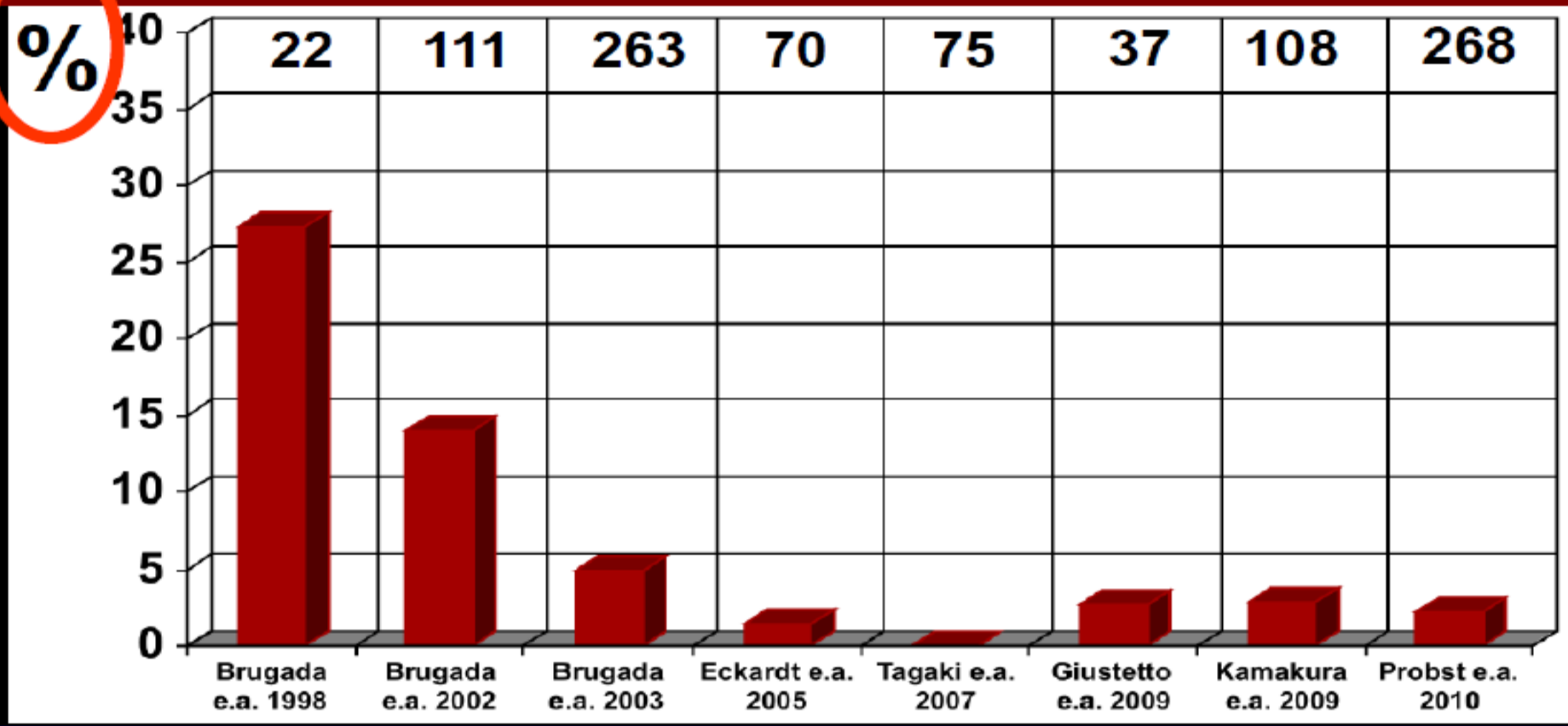




Sarkozy, Circ EP 2009

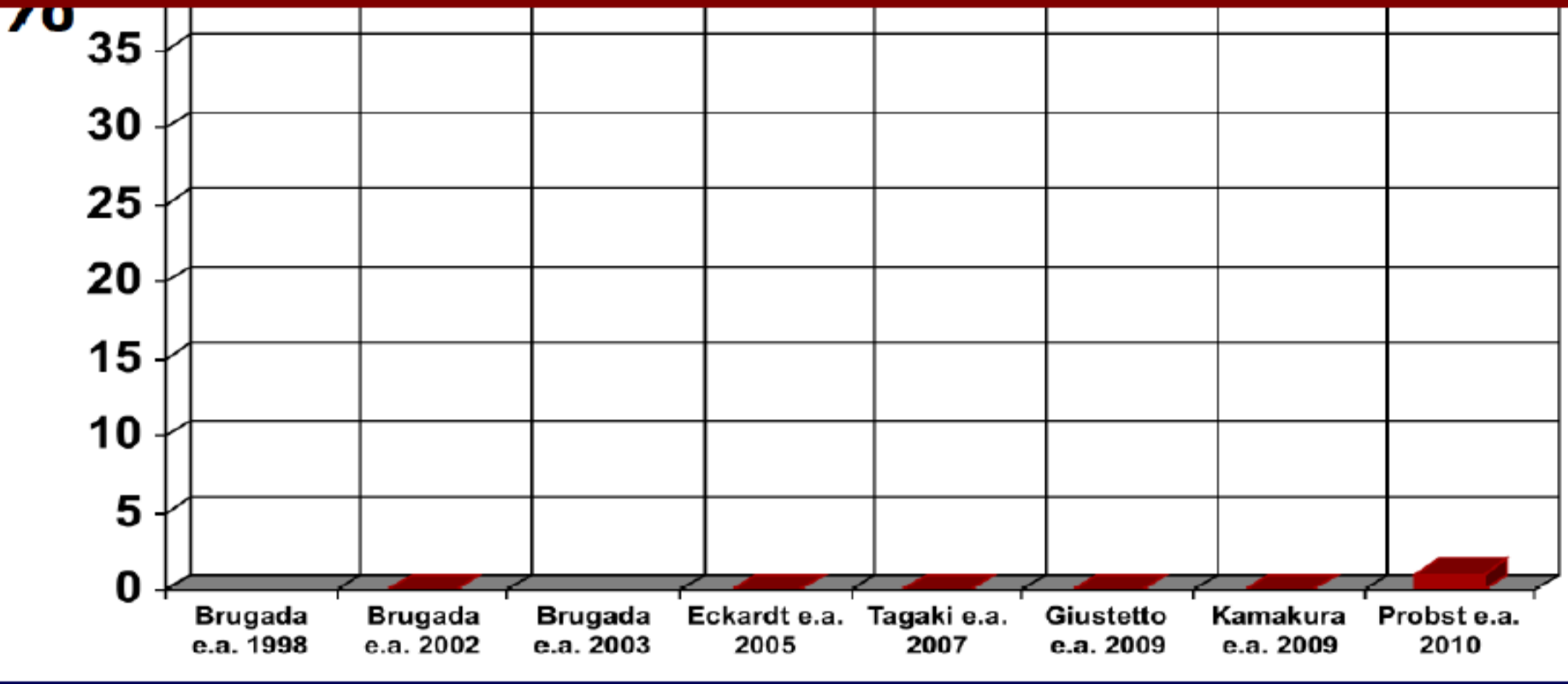
HỘI CHỨNG BRUGADA

Percentage of patients with initially asymptomatic Brugada syndrome who developed spontaneous VF during follow up in different series.



HỘI CHỨNG BRUGADA

Percentage of patients with initially asymptomatic Brugada syndrome (drug-induced Type I) who developed spontaneous VF during follow up in different series.



Special Report

Circulation 2005

Brugada Syndrome

Report of the Second Consensus Conference

Endorsed by the Heart Rhythm Society and the European Heart Rhythm Association

Charles Antzelevitch, PhD; Pedro Brugada, MD, PhD; Martin Borggrefe, MD, PhD; Josep Brugada, MD; Ramon Brugada, MD; Domenico Corrado, MD, PhD; Ihor Gussak, MD, PhD; Herve LeMarec, MD; Koonlawee Nademanee, MD; Andres Ricardo Perez Riera, MD; Wataru Shimizu, MD, PhD; Eric Schulze-Bahr, MD; Hanno Tan, MD, PhD; Arthur Wilde, MD, PhD

Abstract—Since
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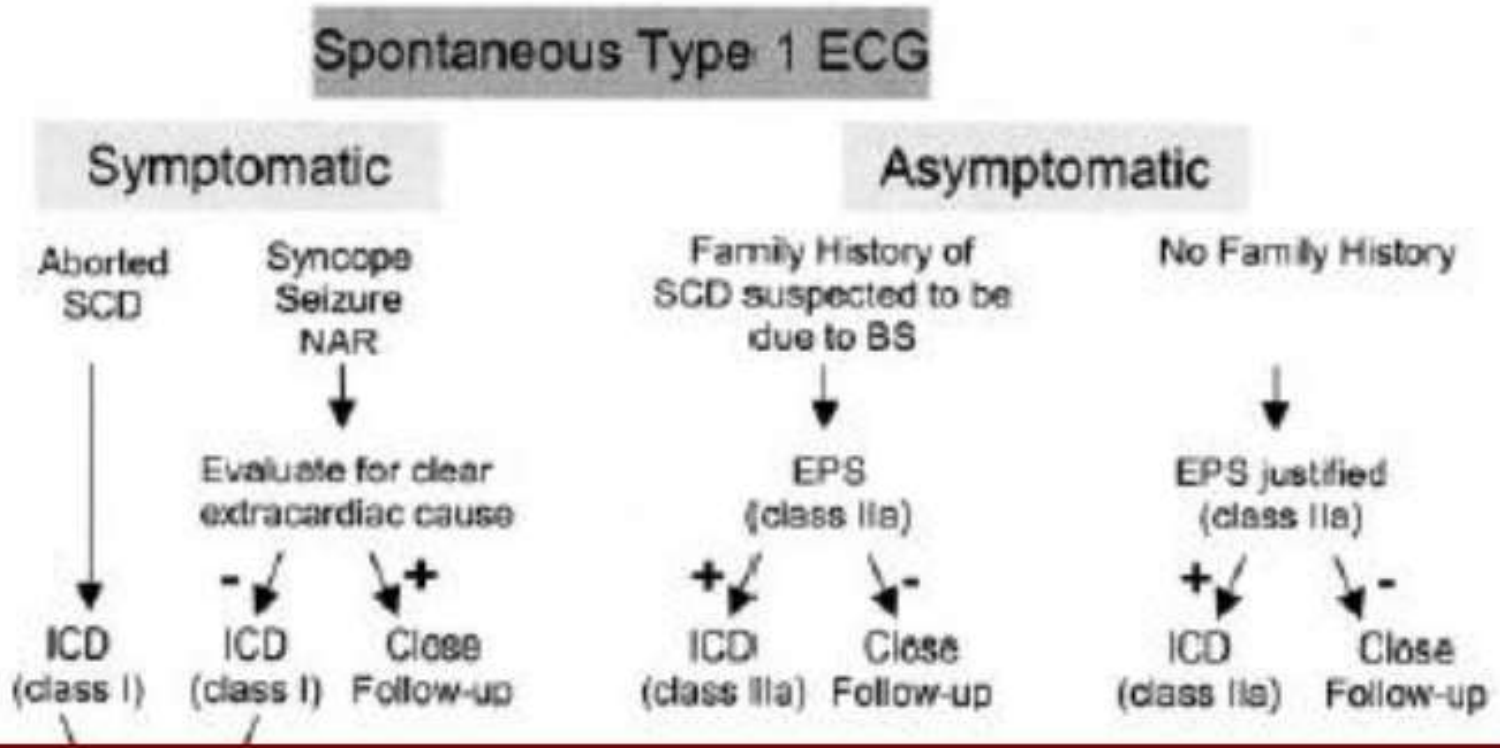


Europace (2009) 11, 412–413
doi:10.1093/europace/eup049

EDITORIAL

Amid the fourth lustrum after the description of Brugada syndrome: controversies over?

Pedro Brugada*

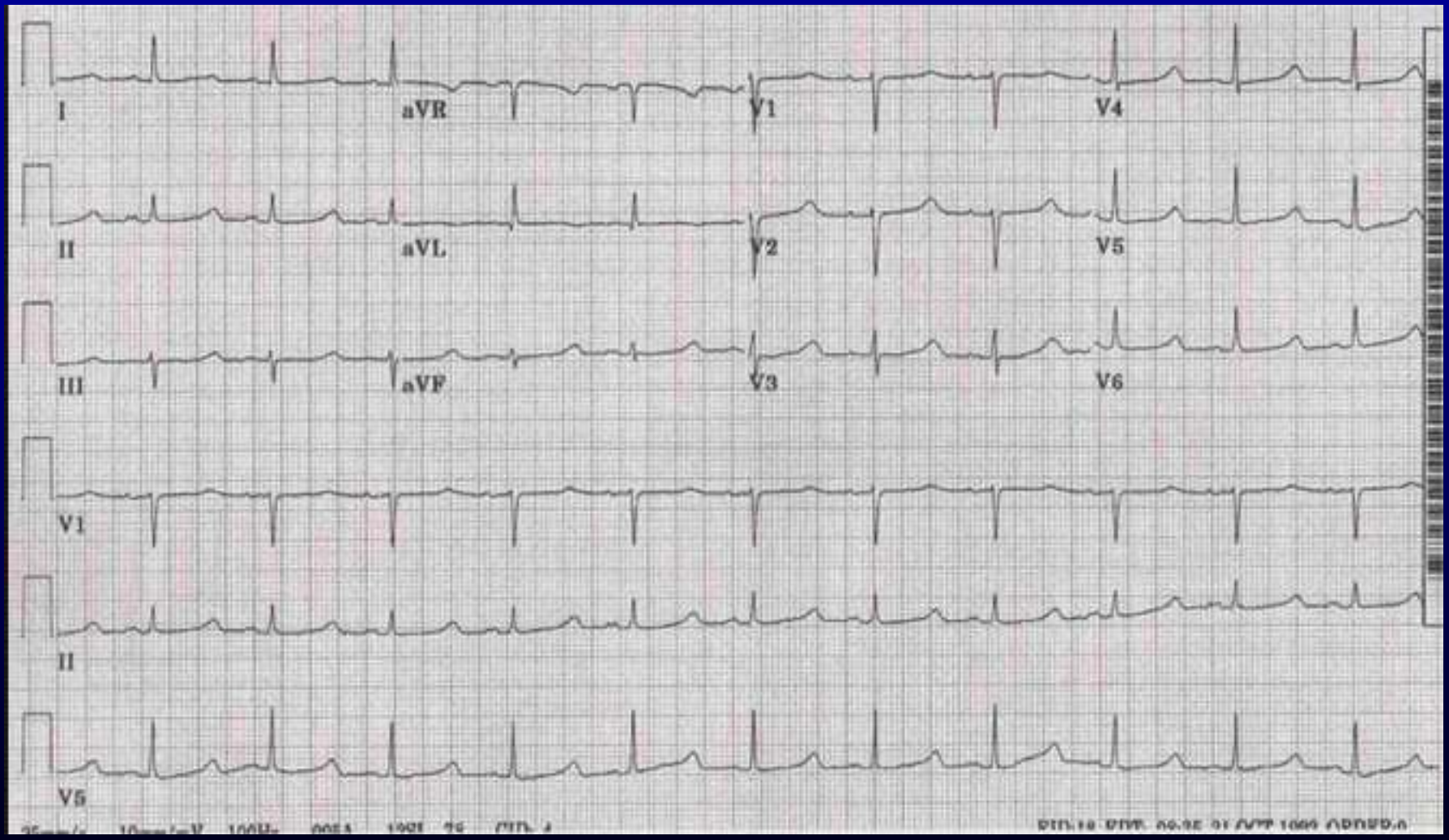
The stratification scheme is now more valid than it ever was.

Table 1 Risk stratification of patients with a Brugada electrocardiogram

Clinical presentation	Results EP	Decision
Aborted sudden death or syncope	Not needed	High risk, ICD
Asymptomatic with spontaneous Brugada ECG	Inducible	High risk, ICD
	Not inducible	Low risk, follow-up
Asymptomatic with Brugada ECG only after drugs	Not needed	Low risk, follow-up

HỘI CHỨNG QT DÀI

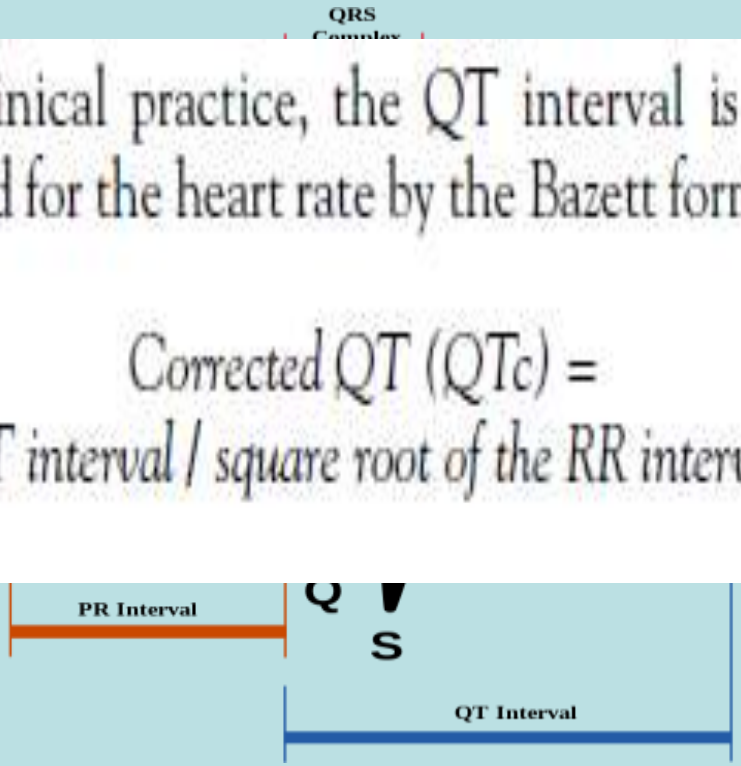
HỘI CHỨNG QT DÀI



ĐO KHOẢNG QT NH THẾ NÀO?

In clinical practice, the QT interval is corrected for the heart rate by the Bazett formula:

Corrected QT (QTc) =
[QT interval / square root of the RR interval]



KHOẢNG QTc ?

http://biostat.mc.vanderbilt.edu/ECGPredictionInterval

Age (years)	57	
Height	1.8	○ Inches ◉ Meters
Weight		○ Lbs ◉ Kg
BMI (kg/m^2)	25	
Gender	○ Female ◉ Male	
Race	White	
History of Type II Diabetes	◉ No ○ Yes	
Heart Rate	70	◉ Unknown **The heart ra** ○ Known **calculations**

CALCULATE

Predicted Value [95% Normal Region]

PR Interval (msec)	**160 [127, 193]**
QRS Duration (msec)	**88 [73, 104]**
Heart Rate (bpm)	**70 [48, 91]**
QTc Interval (msec) (Bazett correction[1])	**404 [359, 448]**

Ramirez, Heart*Rhythm* 2011

TIÊU CHUẨN CHẨN ĐOÁN QT DÀI

Khả năng mắc LQTS:

≤1 : thấp.

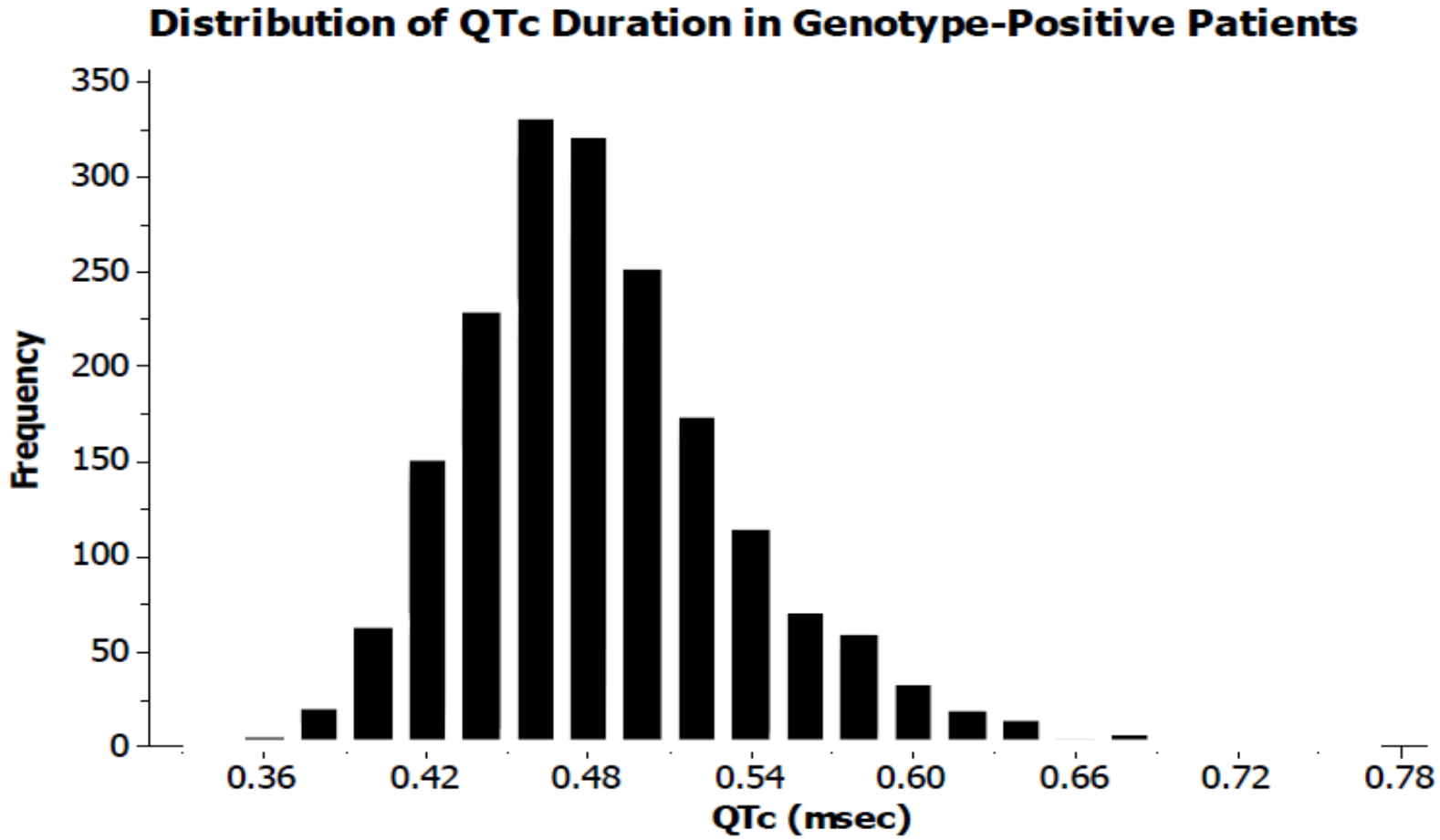
2-3: nguy cơ trung bình.

≥4: nguy cơ cao

Finding	Score
Electrocardiographic†	
Corrected QT-interval, ms	
≥480	3
460–470	2
450 (in males)	1
Torsades de pointes‡	2
T-wave alternans	1
Notched T-wave in 3 leads	1
Low heart rate for age§	0.5
Clinical history	
Syncope‡	
With stress	2
Without stress	1
Congenital deafness	0.5
Family history‖	
Family members with definite LQTS	1
Unexplained SCD in immediate family members <30 yrs old	0.5

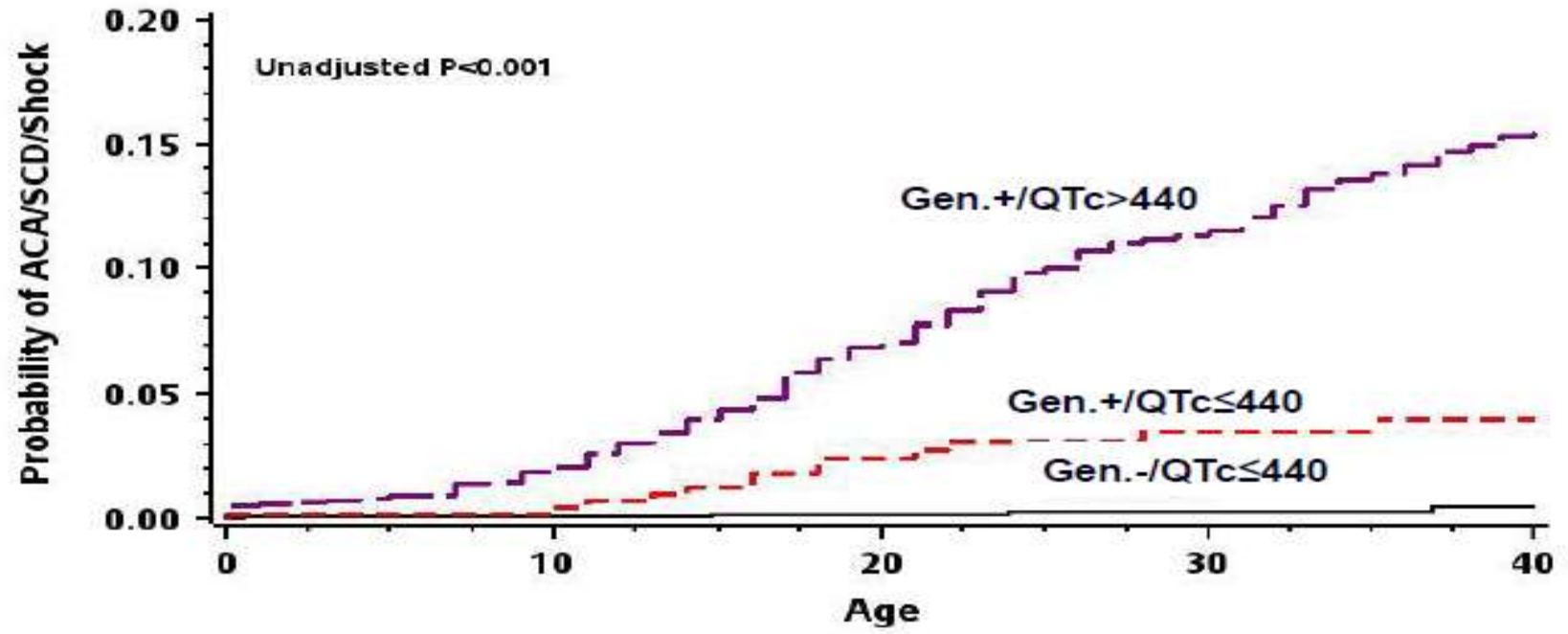
Schwartz PJ, Circulation 1993

HỘI CHỨNG QT DÀI



Goldenberg, JACC 2010

KHẢ NĂNG GÂY ĐỘT TỬ HỘI CHỨNG QT DÀI



Patients at Risk

Gen-/Phen-	1525	1377 (0)	996 (0)	728 (0)	547 (0)
Gen+/Phen-	469	406 (0)	294 (0.02)	236 (0.04)	177 (0.04)
Gen+/Phen+	1392	1235 (0.02)	945 (0.07)	729 (0.11)	543 (0.15)

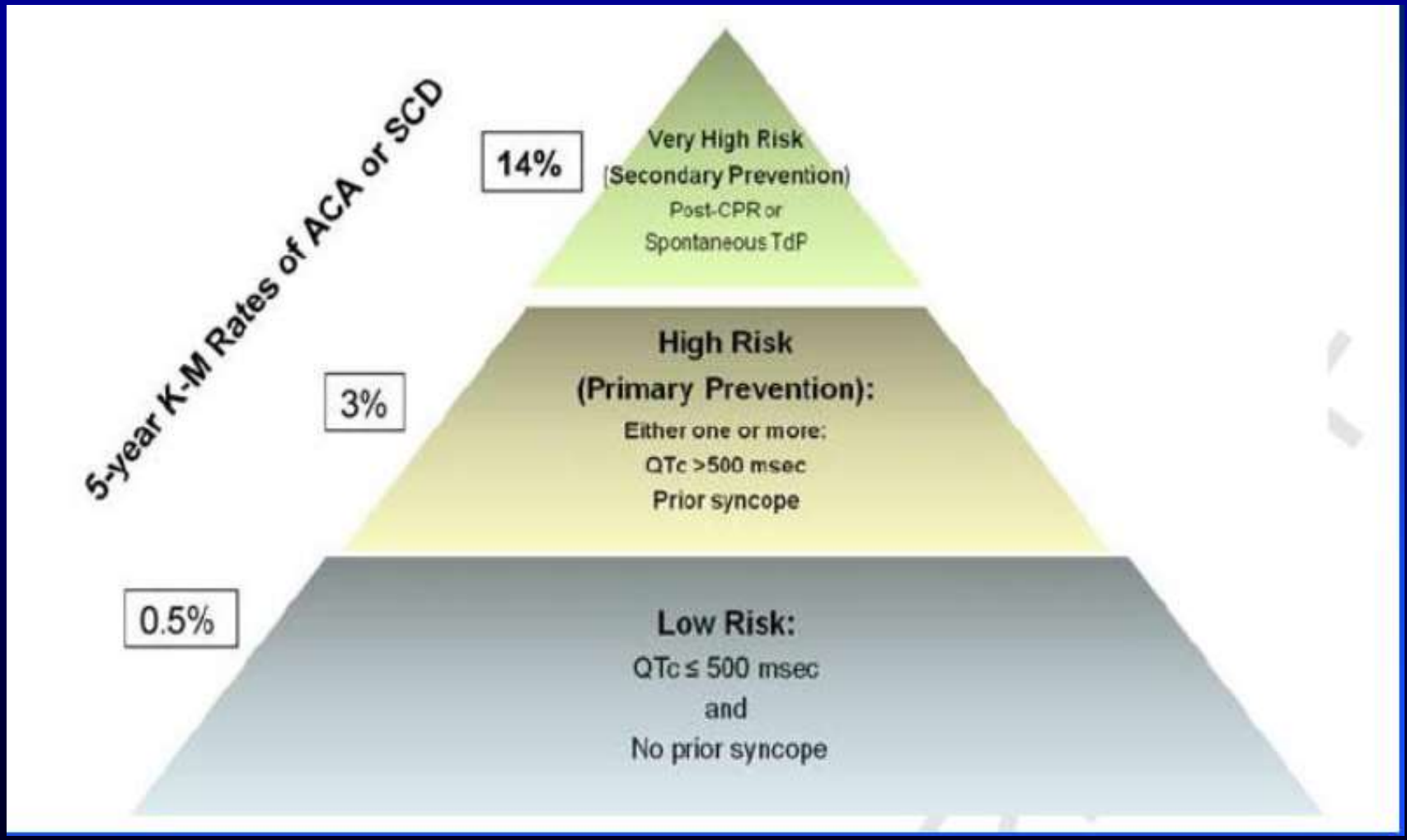
Goldenberg, JACC 2010

NGUY CƠ ĐỘT TỬ HỘI CHỨNG QT DÀI

Age Group (Ref. #)	Risk Factor	Hazard Ratio (p Value)	Beta-Blocker Efficacy, % Reduction (p Value)
Childhood (1–12 yrs) (33)	Male gender	3.96 (<0.001)	73% (0.002)
	QTc >500 ms	2.12 (0.02)	
	Prior syncope:		
	Recent (<2 yrs)	14.34 (<0.001)	
	Remote (≥2 yrs)	6.45 (<0.001)	
Adolescence (10–20 yrs) (28)	QTc >530 ms	2.3 (<0.001)	64% (0.01)
	Syncope		
	≥2 syncopal events in past 2 yrs	18.1 (<0.001)	
	1 syncopal event in past 2 yrs	11.7 (<0.001)	
	≥2 syncopal events in past 2–10 yrs	5.8 (<0.001)	
	1 syncopal events in past 2–10 yrs	2.7 (<0.001)	
Adulthood (18–40 yrs) (29)	Female gender	2.68 (<0.05)	60% (<0.01)
	QTc duration		
	QTc ≥500 ms	6.35 (<0.01)	
	QTc 500–549 ms	3.34 (<0.01)	
	Prior syncope	5.10 (<0.01)	
Adulthood (41–60 yrs) (53)†	Recent syncope (<2 yrs)	9.92 (<0.001)	42% (0.40)‡
	QTc >530 ms	1.68 (0,06)	
	LQT3 genotype	4.76 (0.02)	

Goldenberg, JACC 2008

ĐÁNH GIÁ NGUY CƠ ĐỘT TỬ HỘI CHỨNG QT DÀI



Goldenberg, JACC 2008

HỘI CHỨNG QT NGẮN

Arrhythmias, Electrophysiology and Electrocardiography

CARDIOLOGY

Cardiology 2000;94:99–102

Received: May 22, 2000
Accepted after revision: August 3, 2000

Idiopathic Short QT Interval: A New Clinical Syndrome?

Ihor Gussak[a] Pedro Brugada[b] Josep Brugada[c] R. Scott Wright[a]
Stephen L. Kopecky[a] Bernard R. Chaitman[d] Preben Bjerregaard[d]

[a]Mayo Physician Alliance for Clinical Trials, Mayo Clinic and Mayo Foundation, Rochester, Minn., USA
[b]Cardiovascular F
Barcelona, Spain,

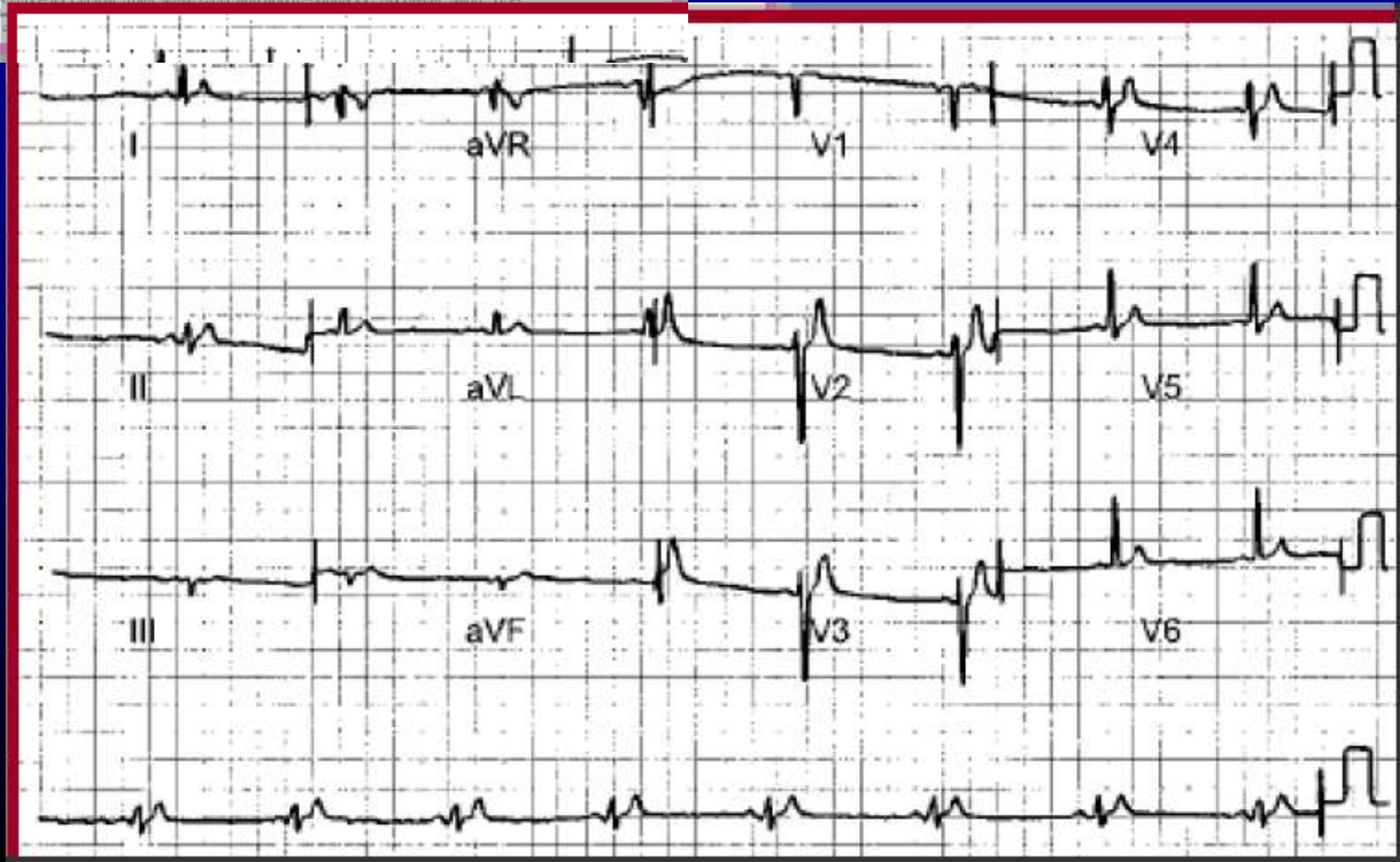


TABLE 1

Diagnostic criteria for short QT syndrome

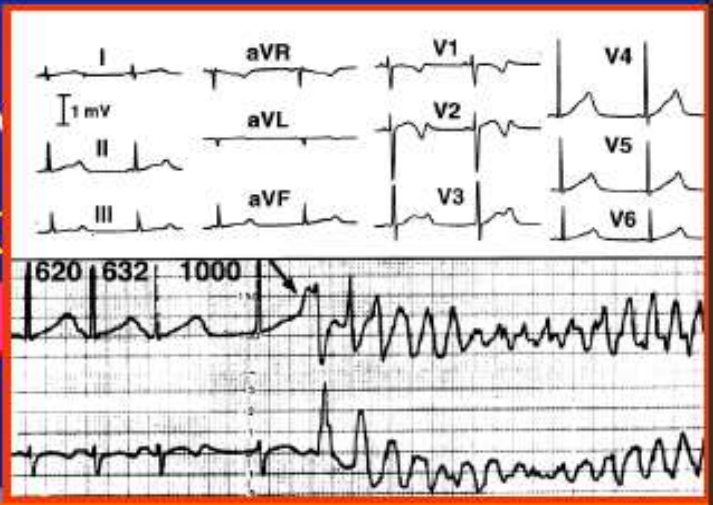
CRITERIA	POINTS
Corrected QT interval [a]	
< 370 ms	1
< 350 ms	2
< 330 ms	3
Interval from J point to T peak < 120 ms [a,b]	1
Clinical history [c]	
History of sudden cardiac arrest	2
Documented polymorphic ventricular tachycardia or ventricular fibrillation	2
Unexplained syncope	1
Atrial fibrillation	1
Family history [d]	
First- or second-degree relative with high probability of short QT syndrome	2
First- or second-degree relative with autopsy-negative sudden cardiac death	1
Sudden infant death syndrome	1
Genotype	
Genotype-positive	2
Mutation of undetermined significance in a culprit gene	1
TOTAL	____
Probability of short QT syndrome	
High	4 points
Intermediate	3 points
Low	2 points

HỘI CHỨNG QT NGẮN

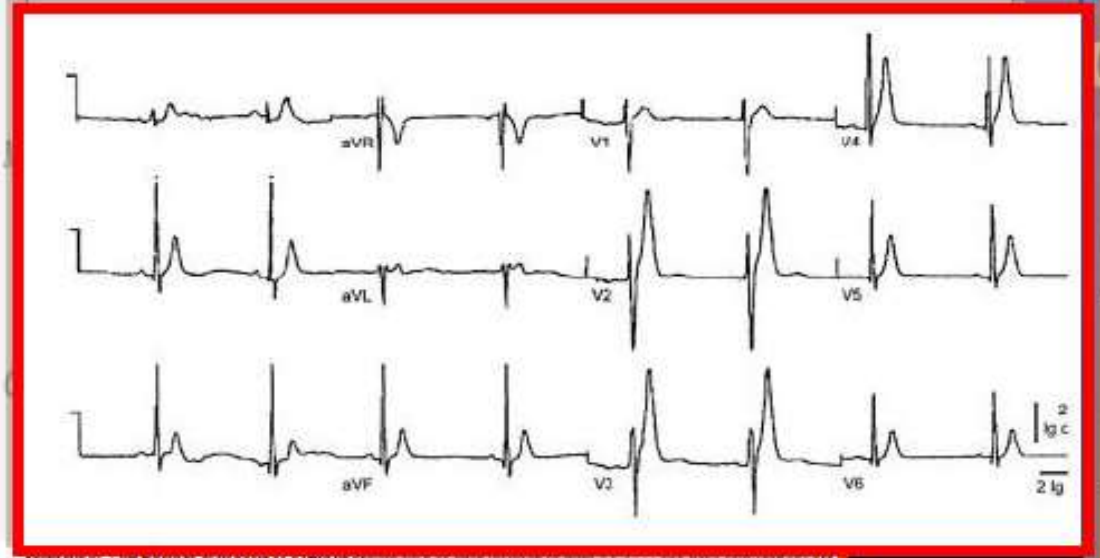
Sudden Death Associated With Short-QT Syndrome Linked to Mutations in HERG

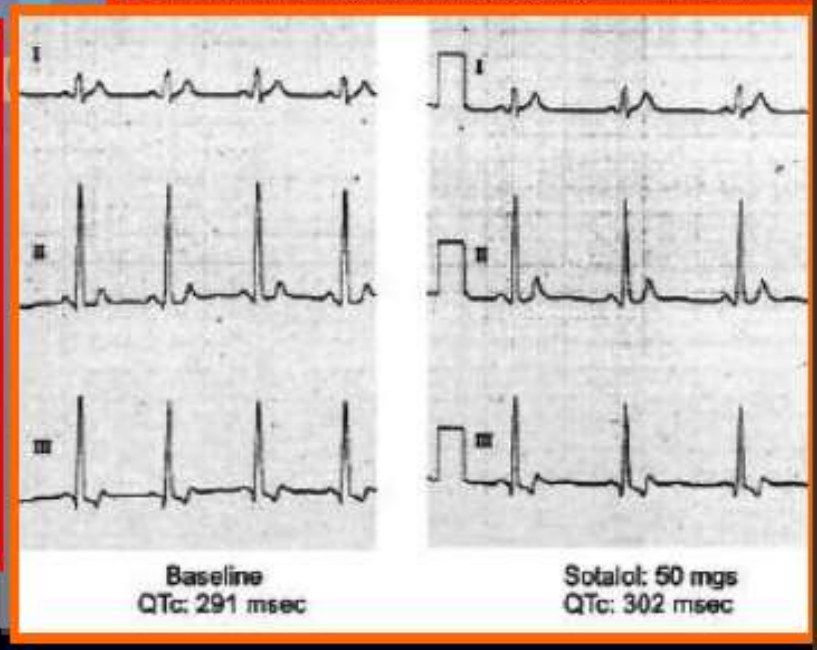
Ramon Brugada, MD*; Kui Hong, MD, PhD*; Robert Dumaine, PhD; Jonathan Cordeiro, PhD; Fiorenzo Gaita, MD; Martin Borggrefe, MD; Teresa M. Menendez, MD; Josep Brugada, MD, PhD; Guido D. Pollevick, PhD; Christian Wolpert, MD; Elena Burashnikov, MS; Kiyotaka Matsuo, MD, PhD; Yue Sheng Wu, MD; Alejandra Guerchicoff, PhD; Francesca Bianchi, MD; Carla Giustetto, MD; Rainer Schimpf, MD; Pedro Brugada, MD, PhD; Charles Antzelevitch, PhD

LQT2 = Loss of function of HERG



SQT1 = Gain of function of HERG





diagnosis and therapy of this and other arrhythmogenic

Circulation 2004

HỘI CHỨNG QT NGẮN

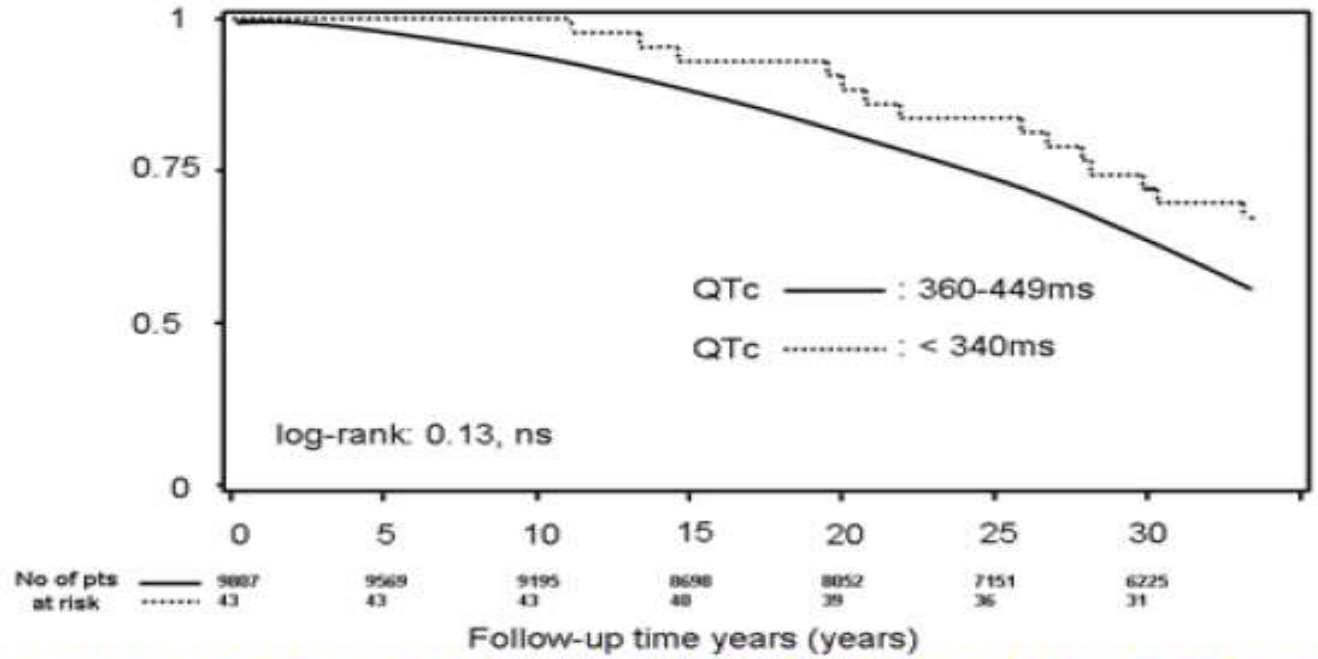
Based on 10,822 ECGs (Age 44 8 years):

95% CI for QTc <320 is <0.2%

4 in 1000 healthy men have QTc <340 msec

2% of men had QTc 340-360 msec

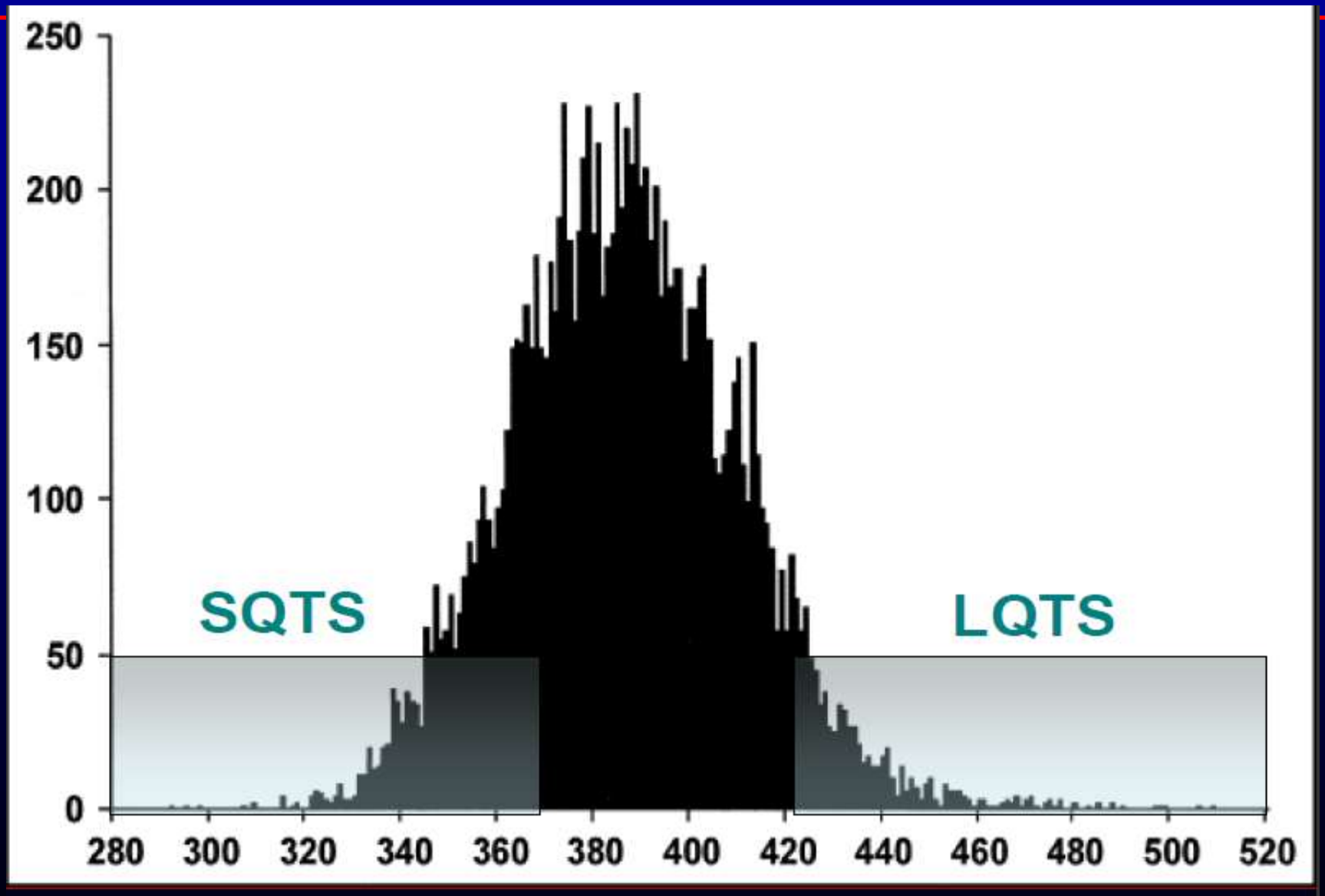
Anttonen, *Circulation* 2007.



Survival of healthy individuals with QTc<340 msec

HỘI CHỨNG QT NGẮN

HỘI CHỨNG QT NGẮN



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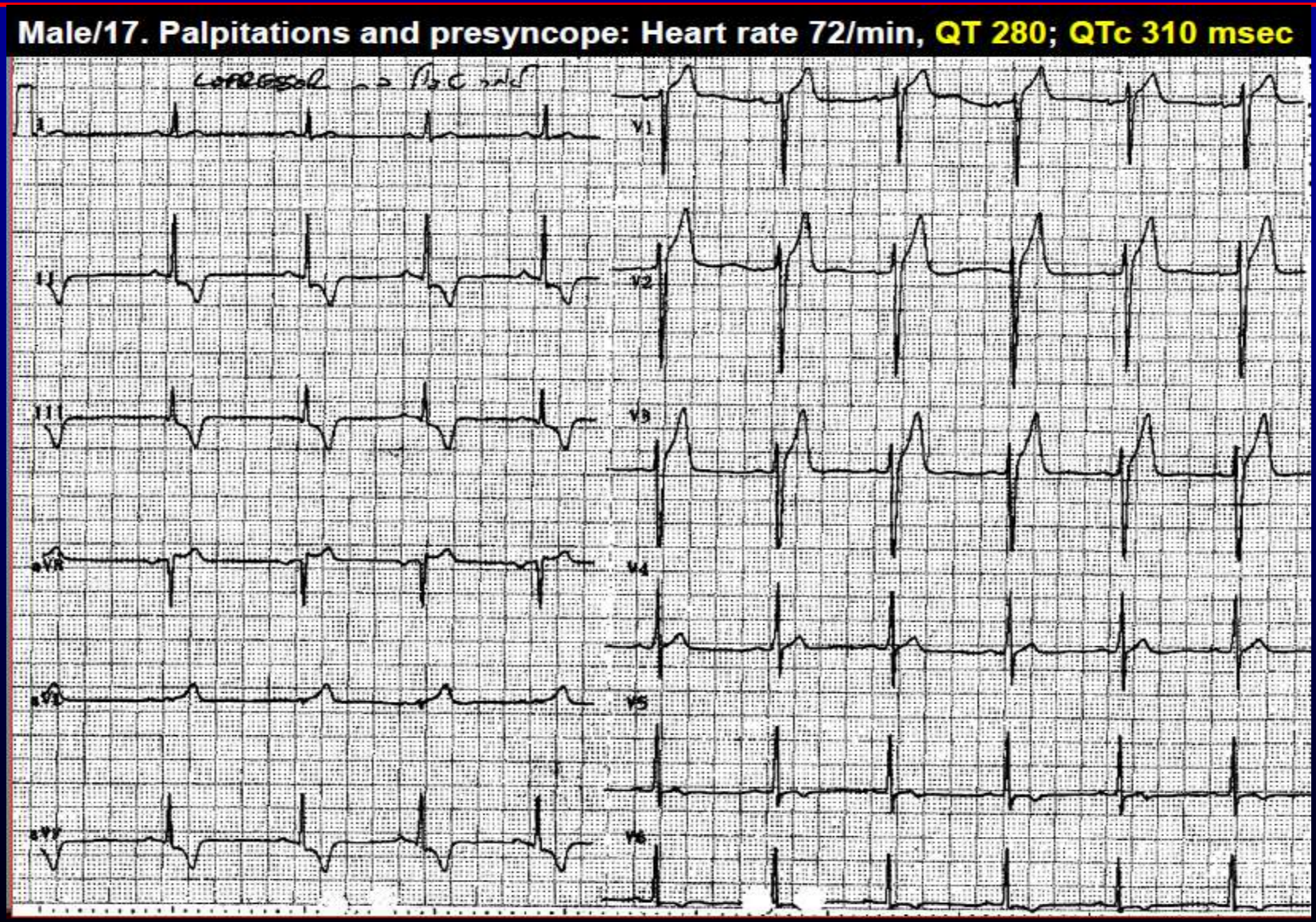
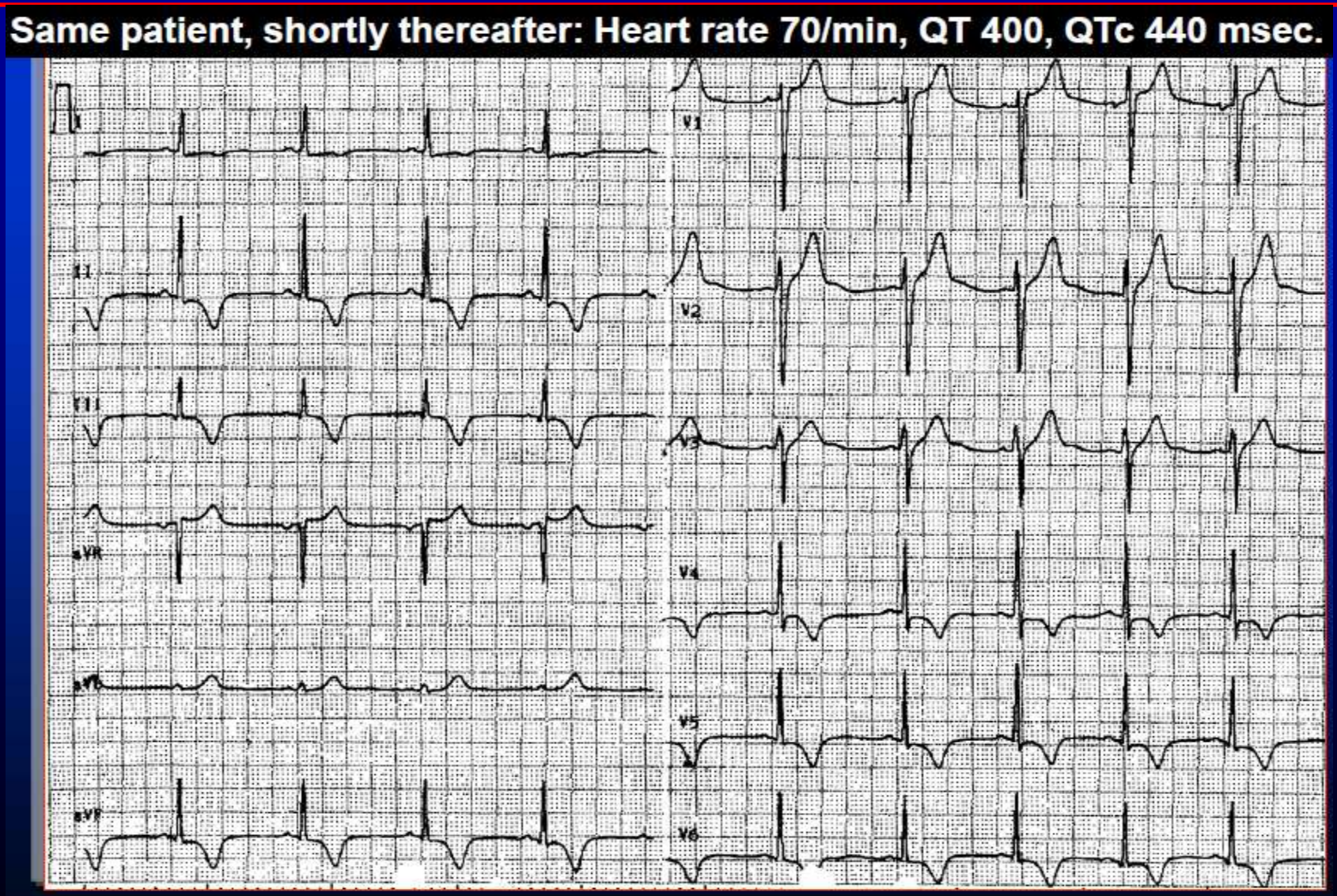


HỘI CHỨNG QT NGẮN



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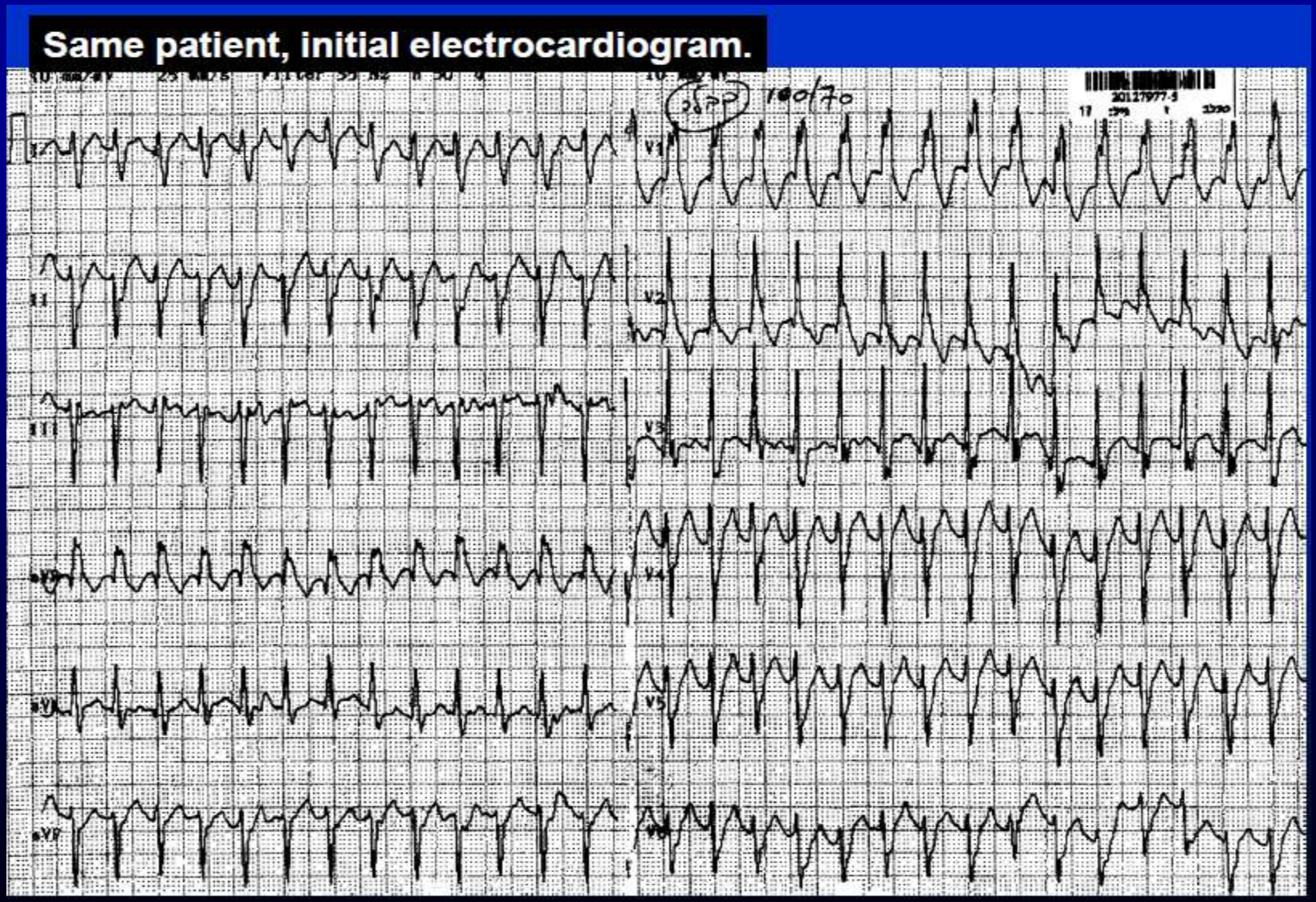
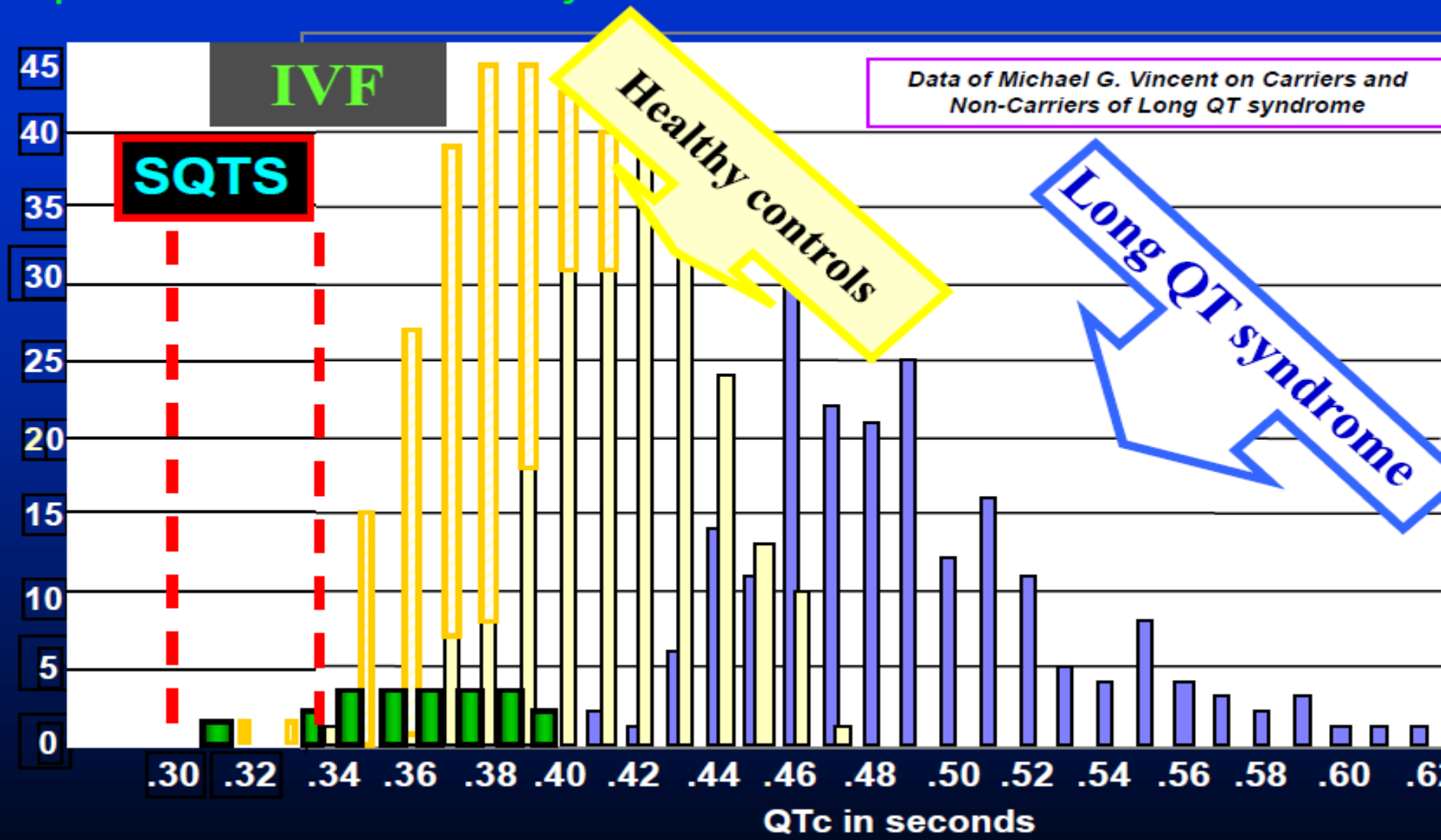


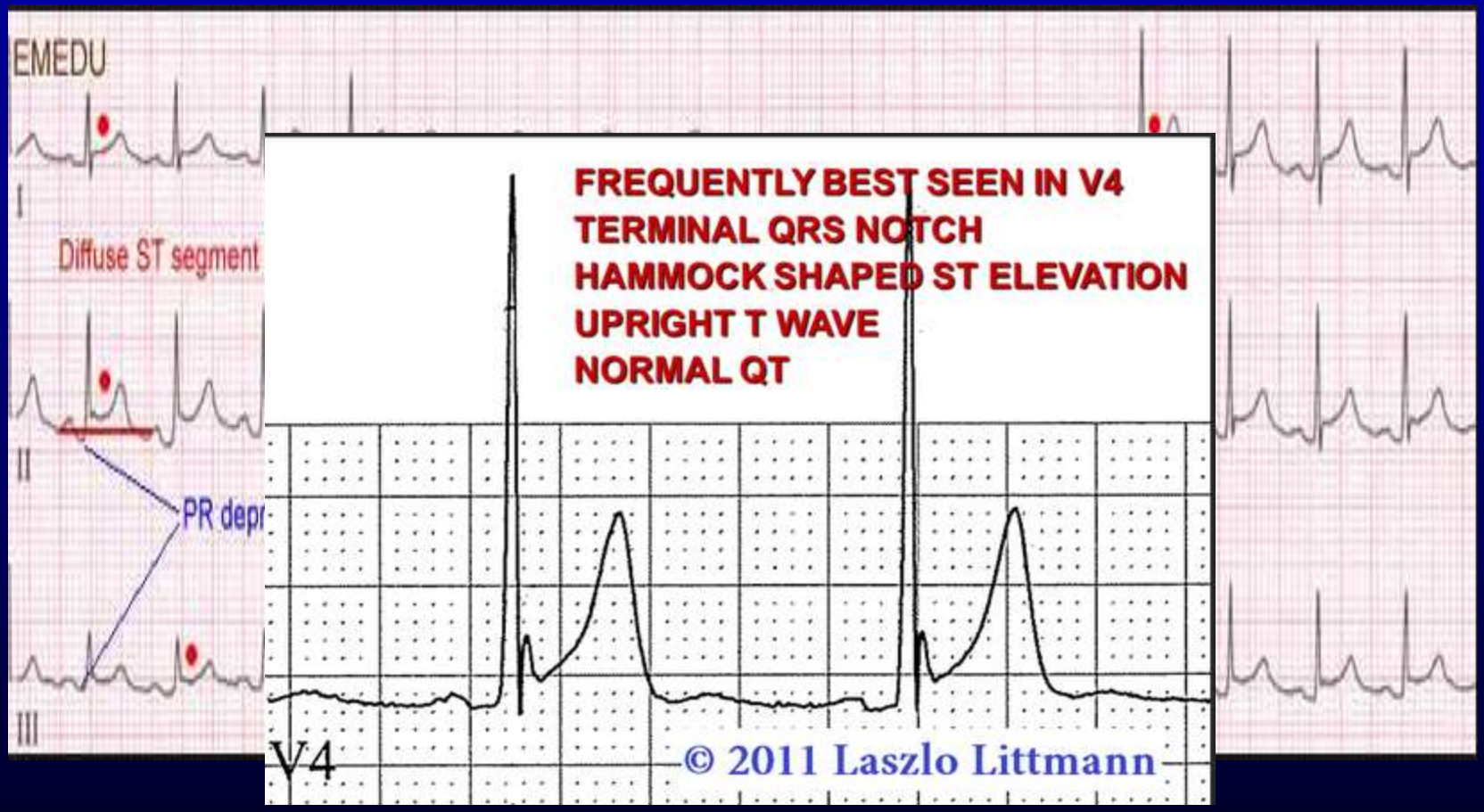
HỘI CHỨNG QT NGẮN

Idiopathic VF: A short QT syndrome with not-so-short QT interval.

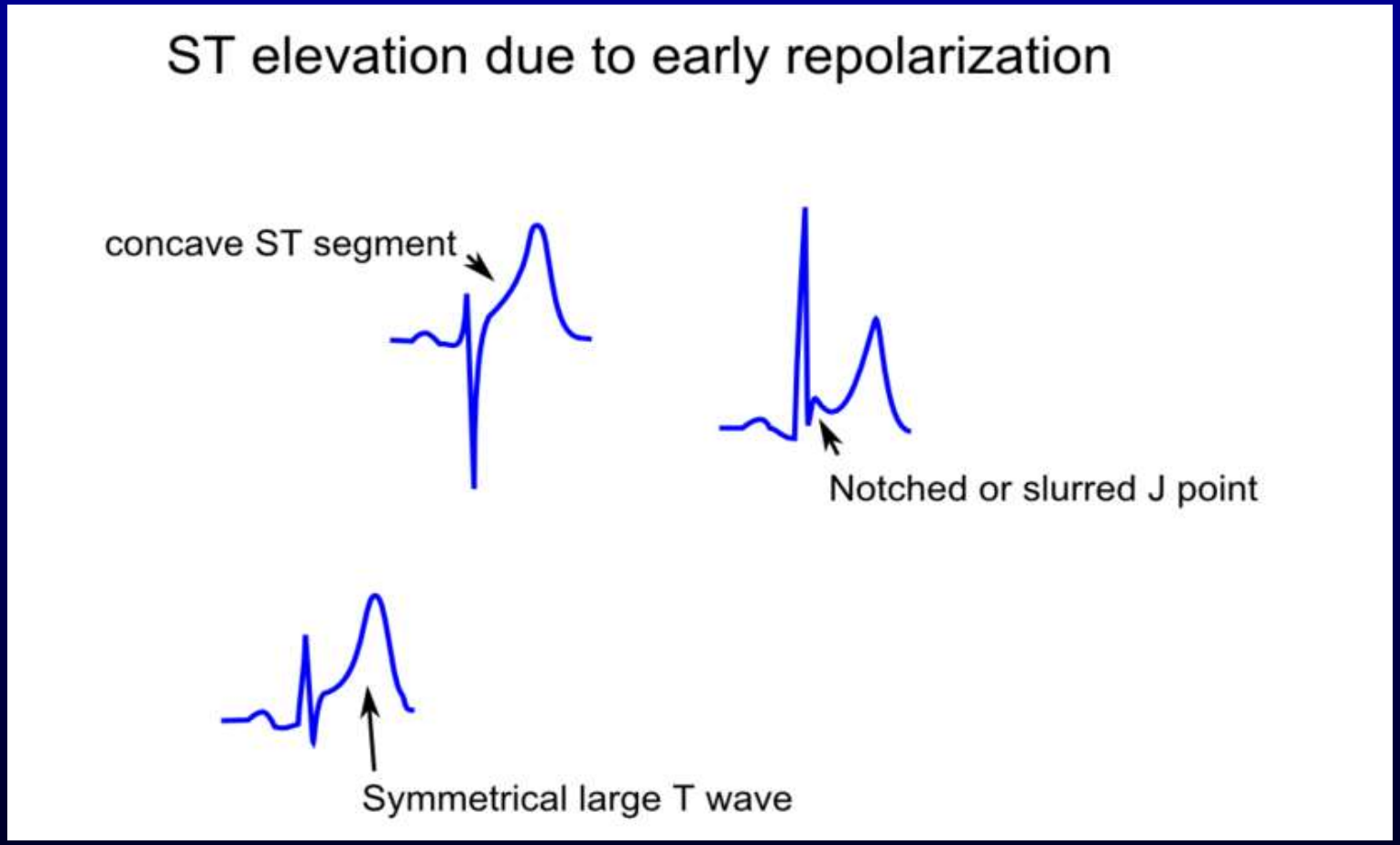


HỘI CHỨNG TÁI CỰC SỚM

HỘI CHỨNG TÁI CỨU SỚM

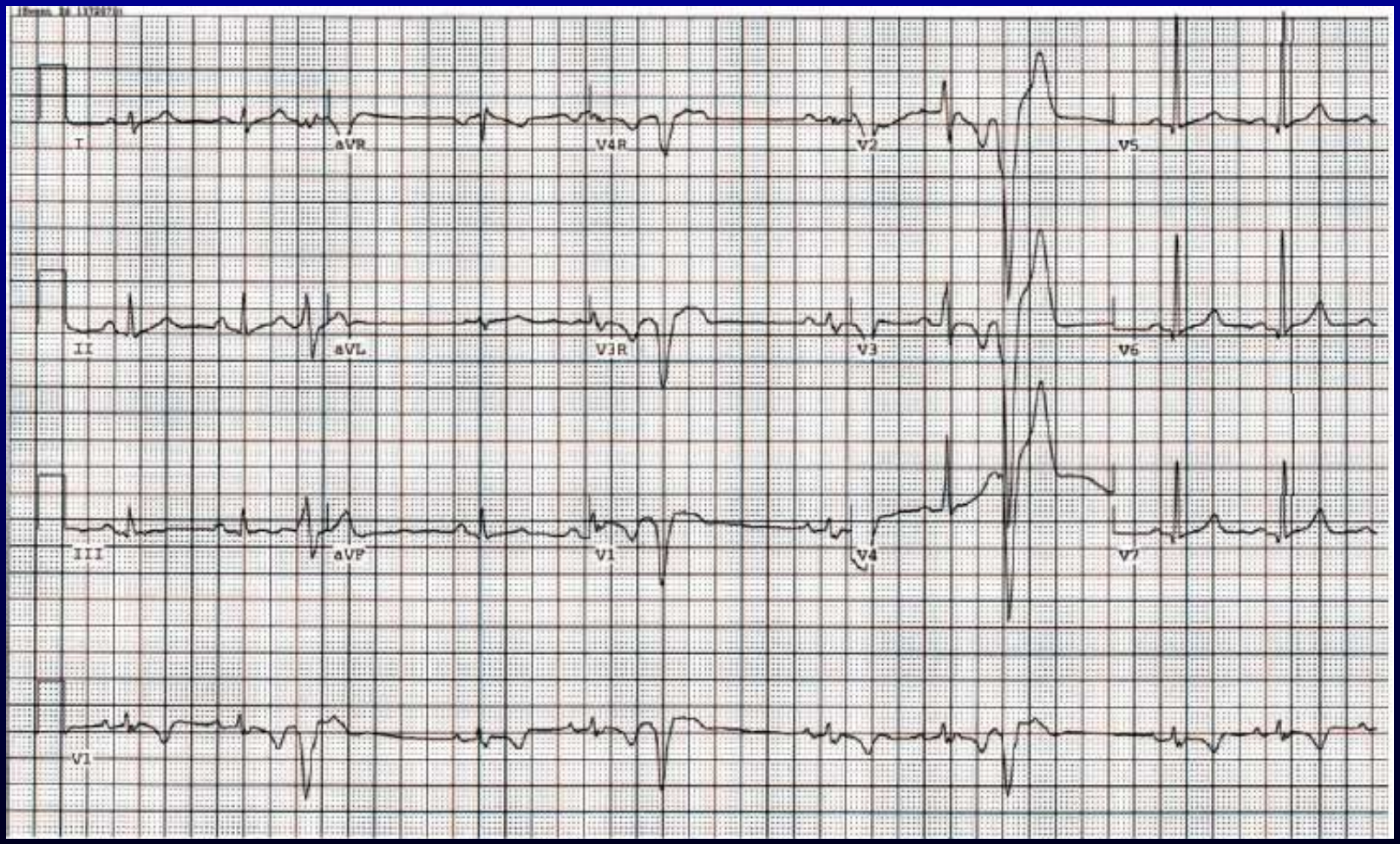


HỘI CHỨNG TÁI CỨU SỚM

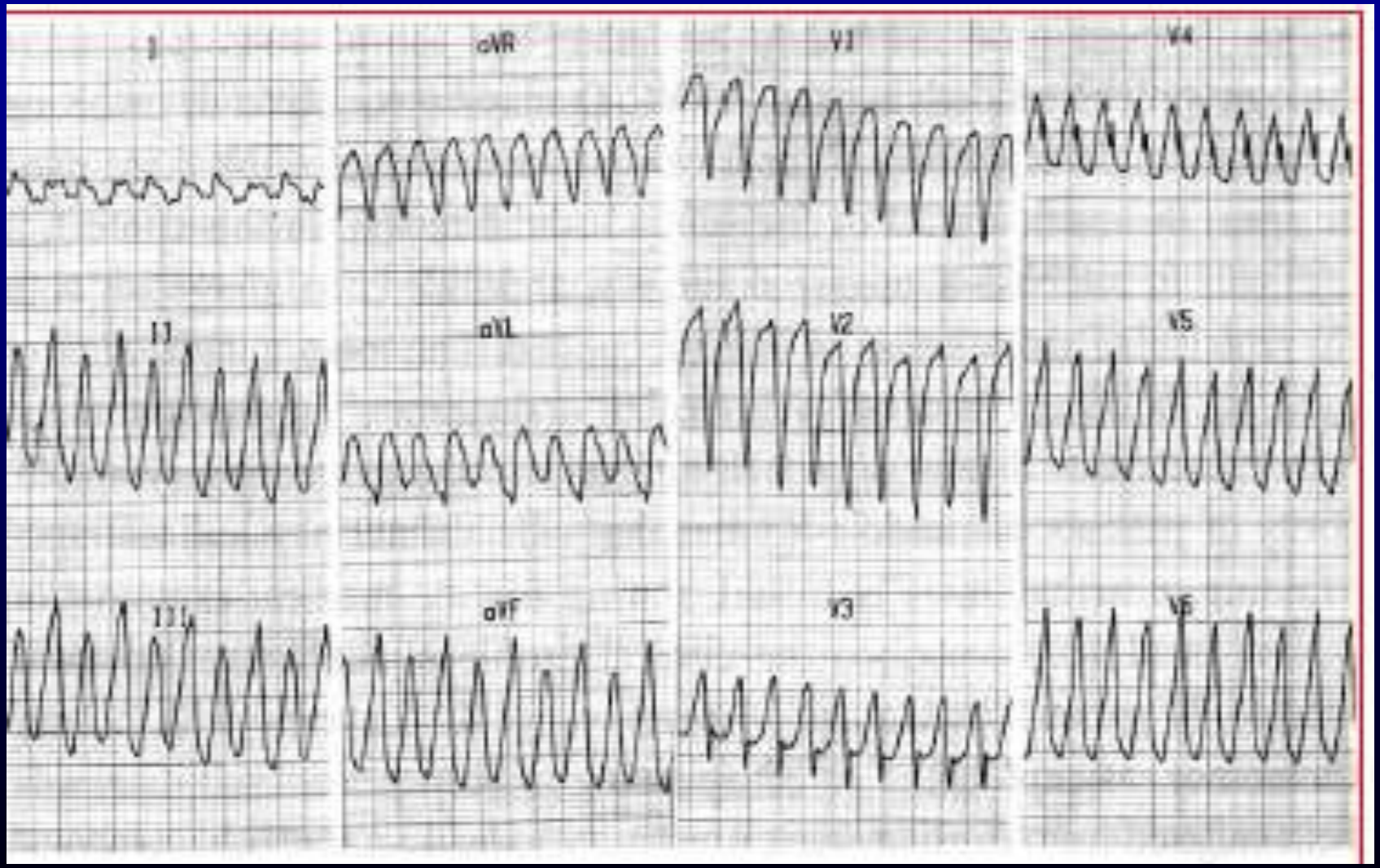


LOẠN SẢN THẤT PHẢI

NTT/T TRÊN BỆNH NHÂN ARVD



TIM NHANH THẤT TRÊN BỆNH NHÂN ARVD



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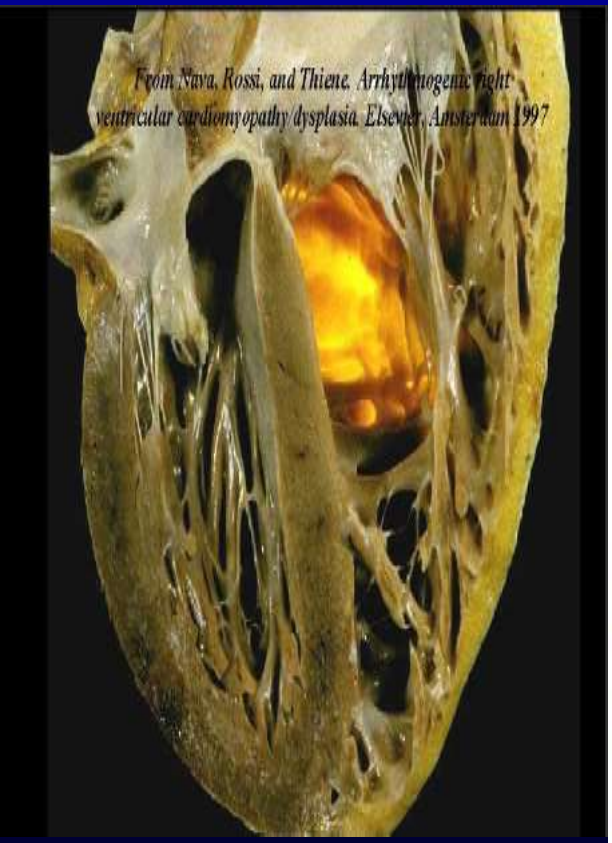

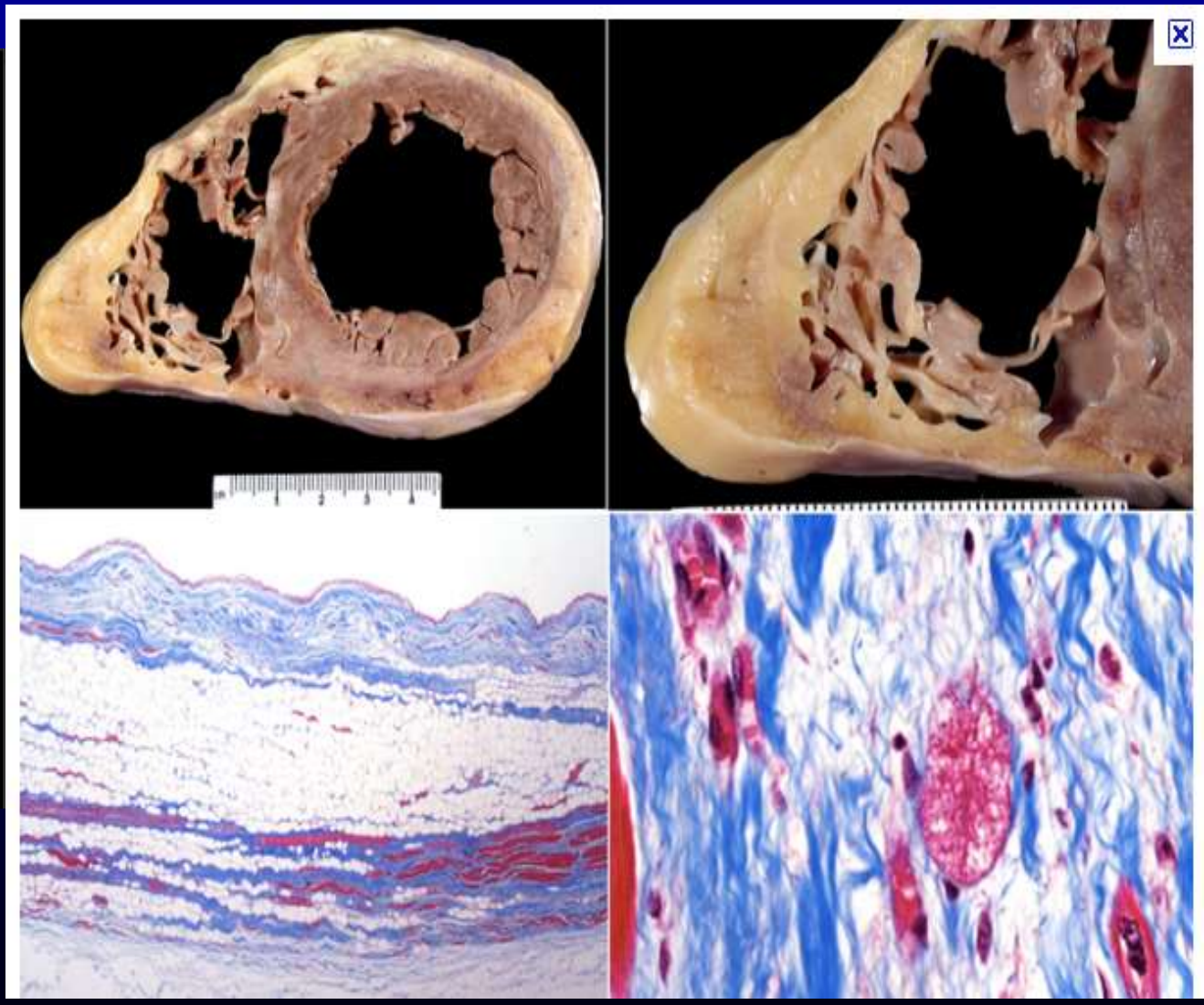

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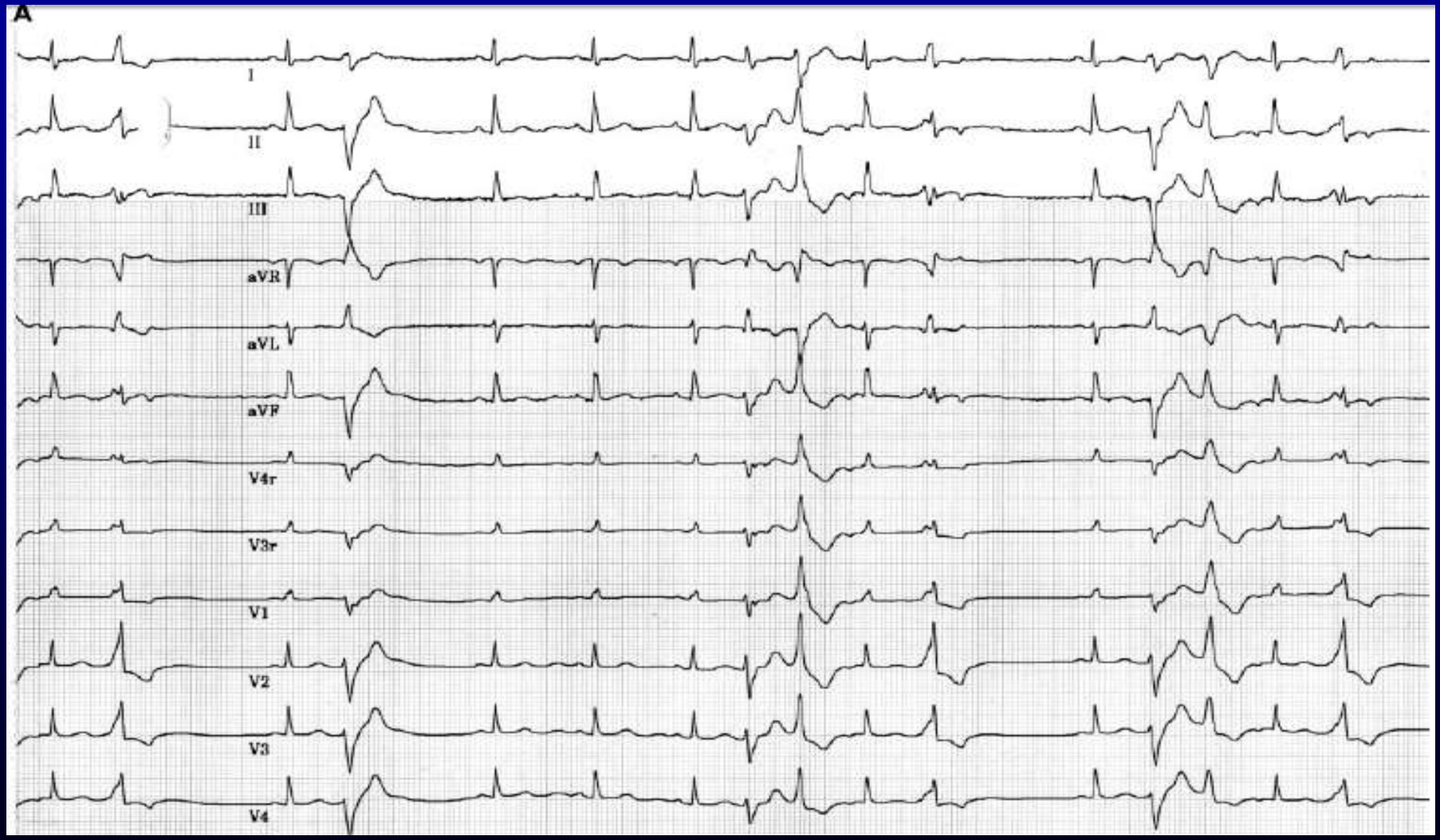
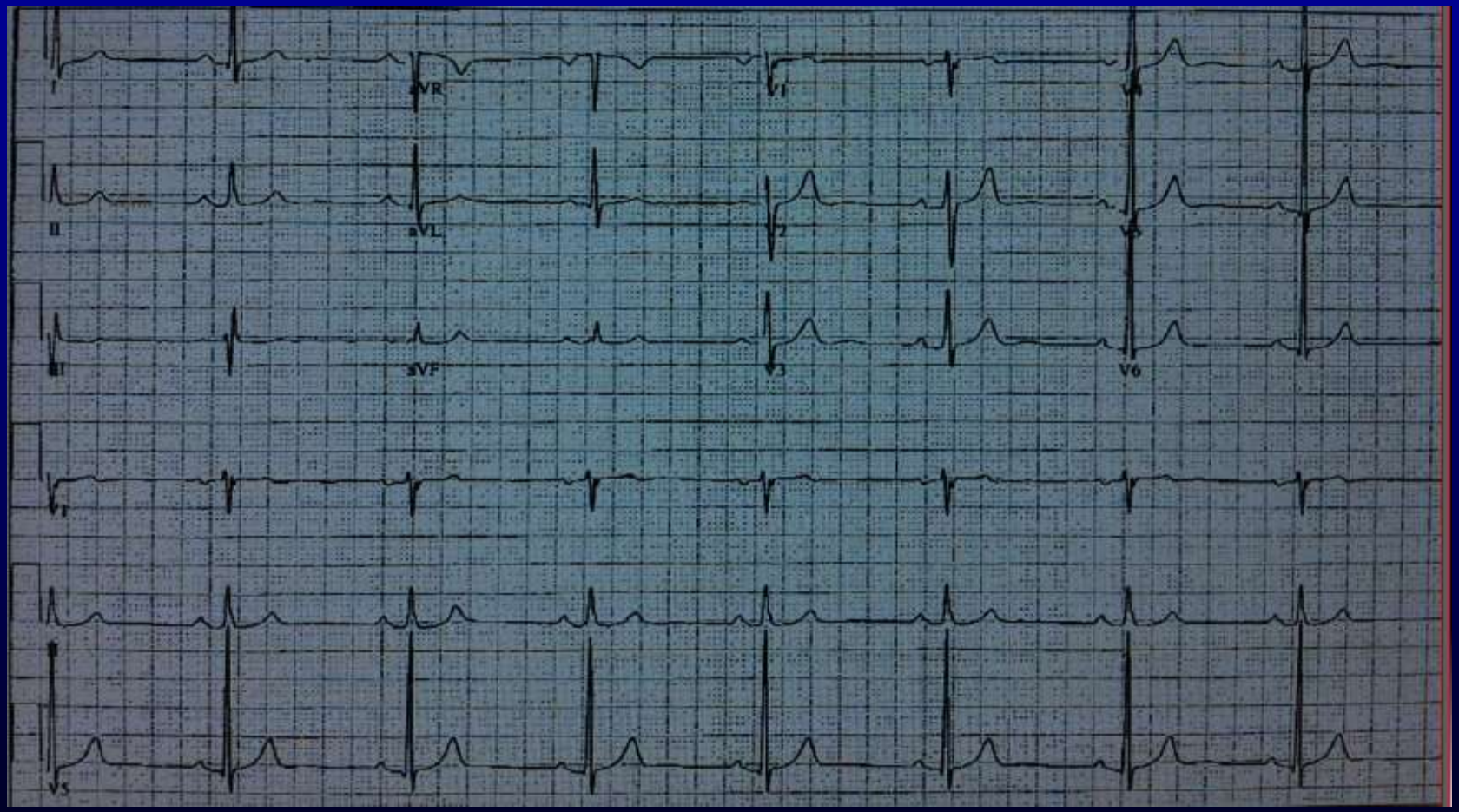
NTT/T ĐA Ổ



BN NAM 38 TUỔI



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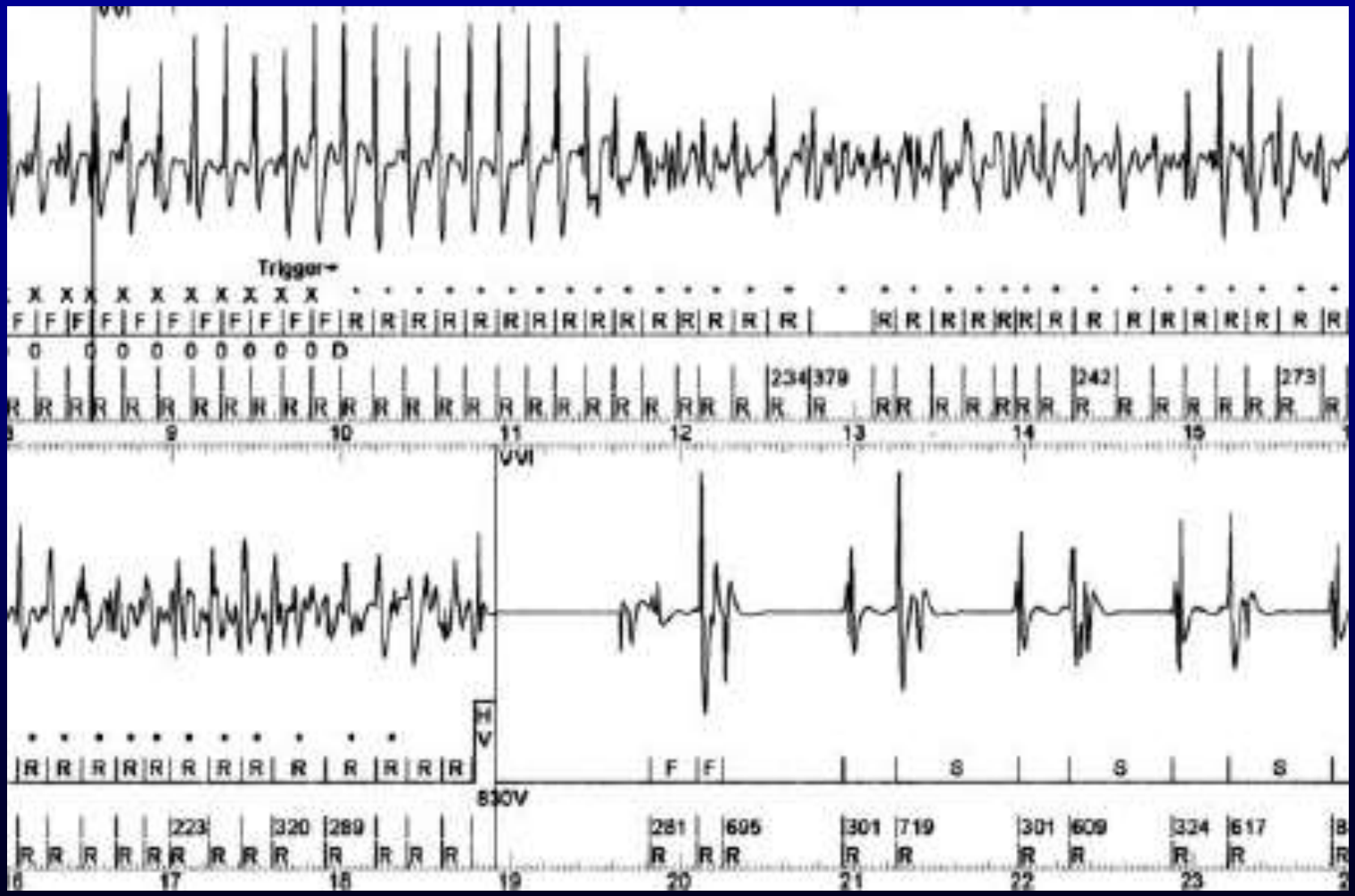

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