

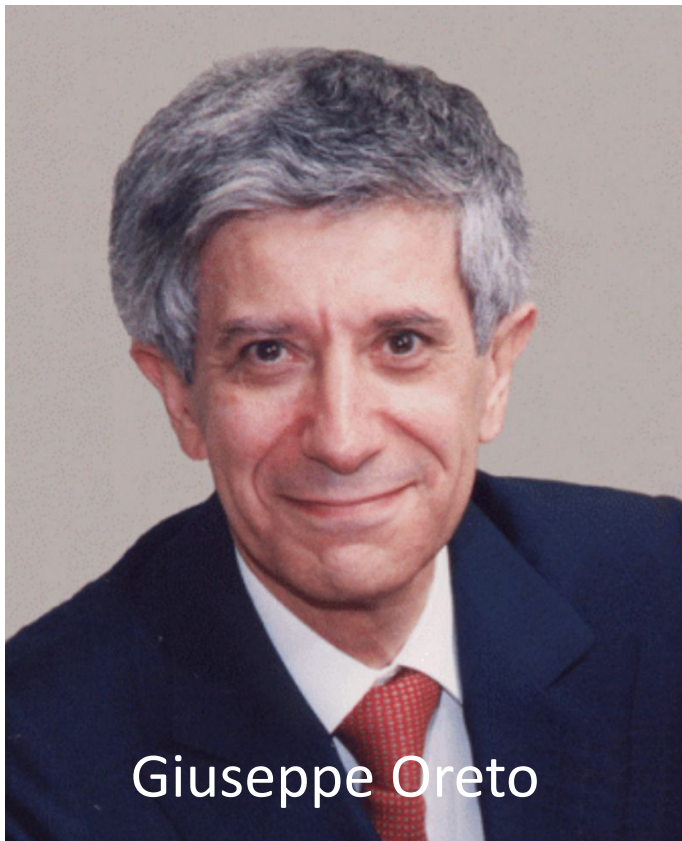
L'ECG BASALE NELLA PRATICA CLINICA
Precision Electrocadiology Course

**La diagnosi differenziale
delle tachicardie a QRS largo,
tra vecchi e nuovi criteri.**

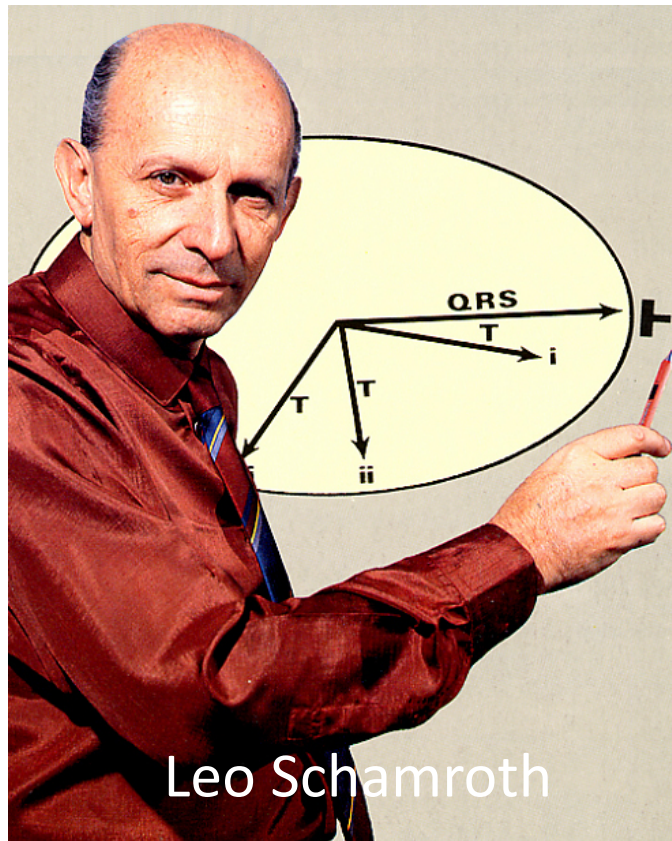


Vincenzo Carbone

IL DILEMMA DEL QRS LARGO



Giuseppe Oreto



Leo Schamroth



QRS largo: principali meccanismi elettrogenetici

✓ *Origine ectopica ventricolare dell'impulso.*



TACHICARDIA VENTRICOLARE

vecchi e nuovi criteri ECG

- ❖ dissociazione atrio-ventricolare
- ❖ battiti di fusione e di cattura
- ❖ blocco ventricolo-atriale di II grado
- ❖ morfologia del QRS in V1 e V6 non coerente con un vero blocco di branca
- ❖ concordanza dei QRS nelle precordiali
- ❖ intervallo inizio QRS-nadir onda S >100 ms in almeno una precordiale (segno di Brugada)
- ❖ morfologia del QRS in aVR (Vereckei)
- ❖ tempo al picco dell'onda R in II derivazione (Pava)
- ❖ polarità del QRS nelle derivazioni periferiche (Chen-Natale)

Precordiali
(p. orizzontale)

Periferiche
(p. frontale)



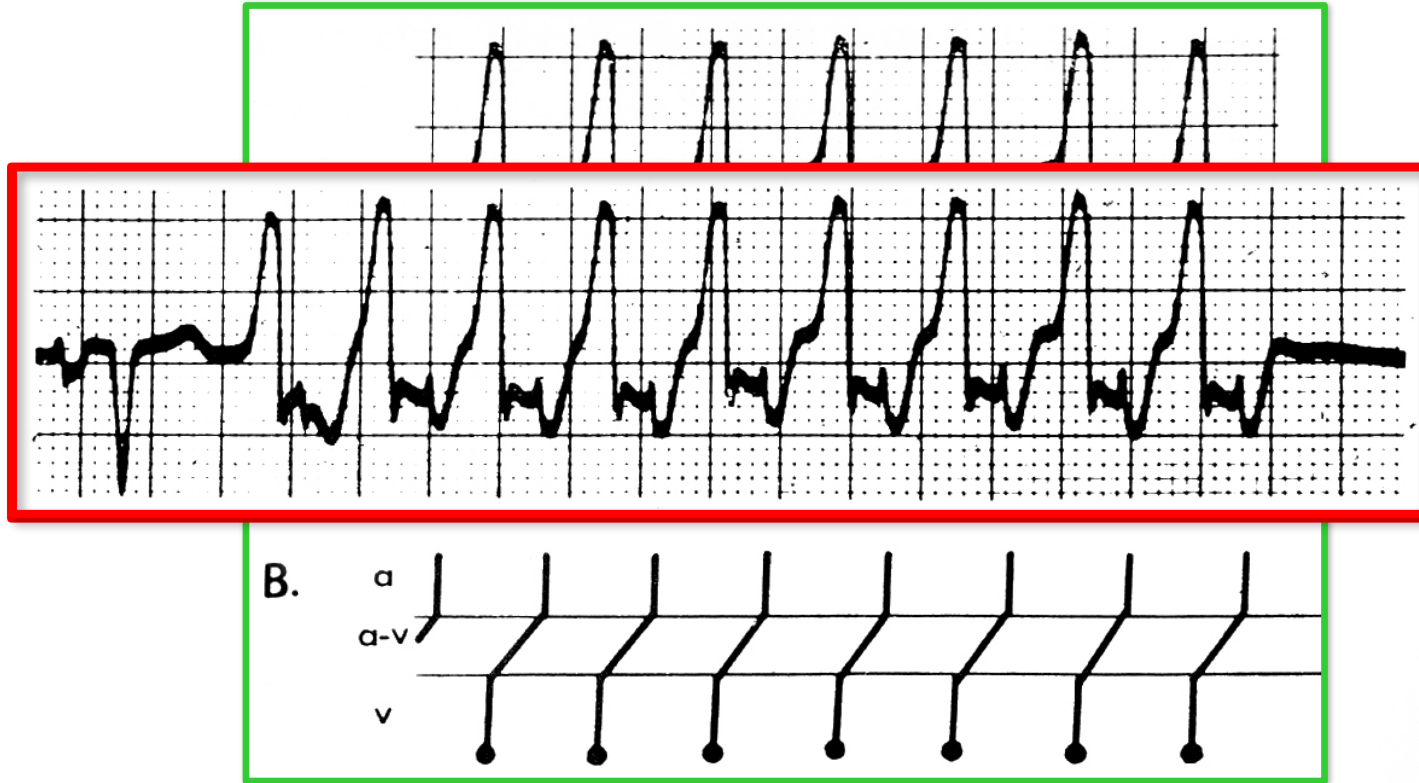
Dissociazione A-V



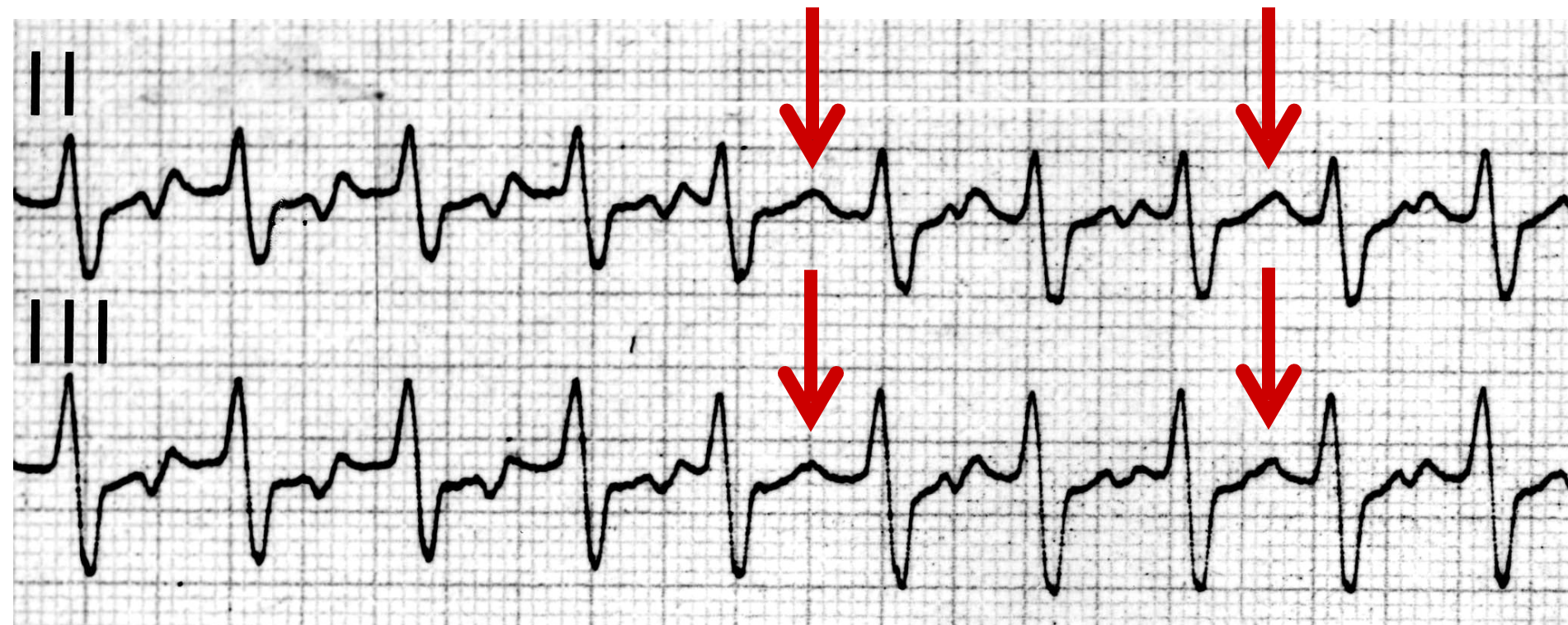
II

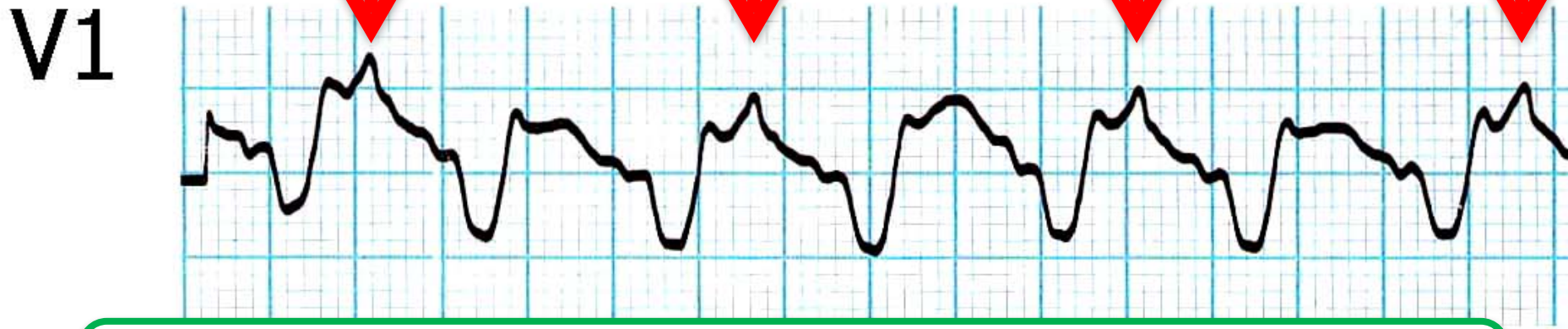


Rapporto P/QRS

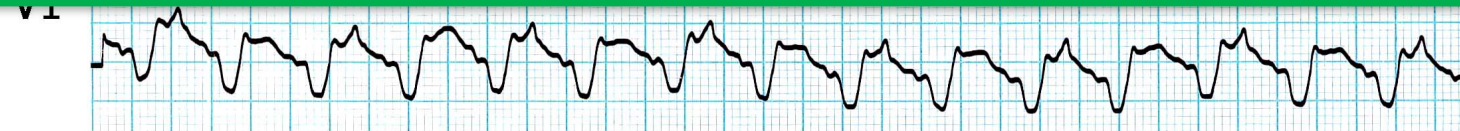


Rapporto P/QRS < 1 (blocco Ventricolo-Atriale di II grado)





BLOCCO VENTRICOLO-ATRIALE 2:1



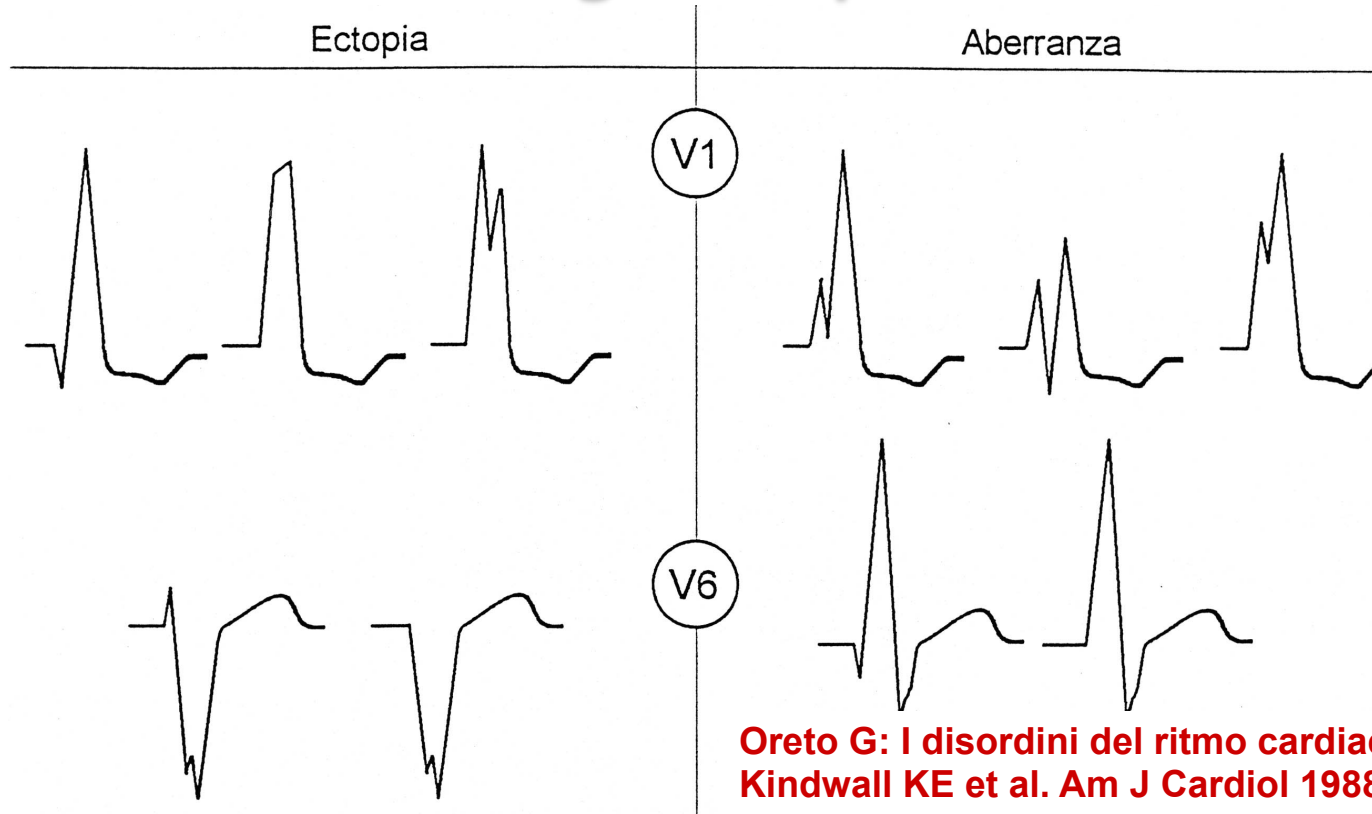
Analisi morfologica del QRS in V1 e V6

Quanto più un quadro di blocco di branca è ***tipico***, tanto più è probabile l'aberranza, mentre un blocco di branca ***atipico*** suggerisce ectopia.

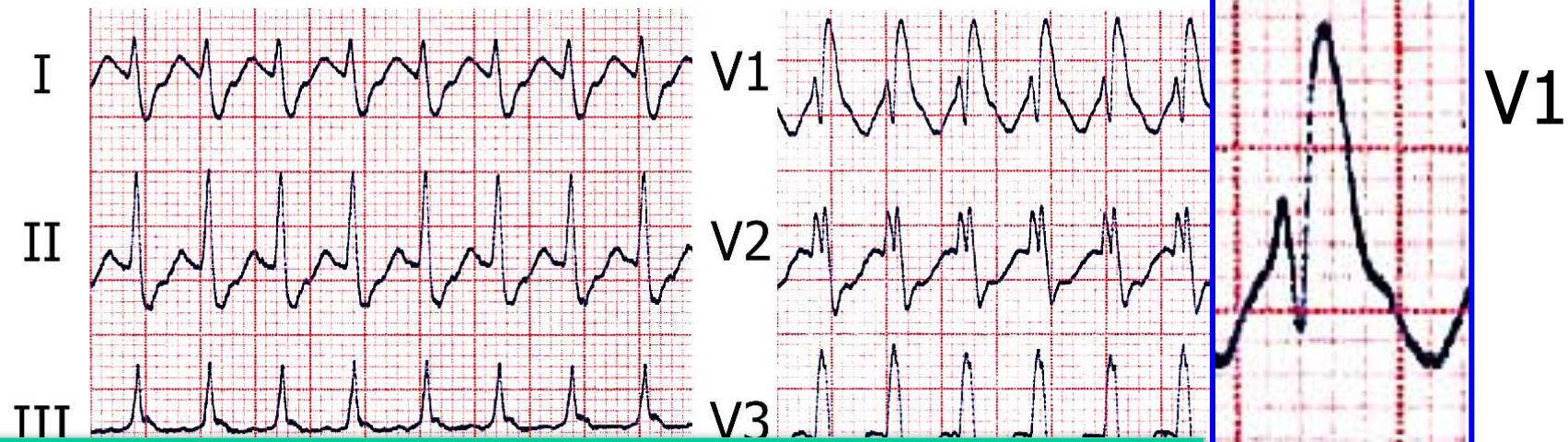


DISTINZIONE DELL'ECTOPIA DALL'ABERRANZA

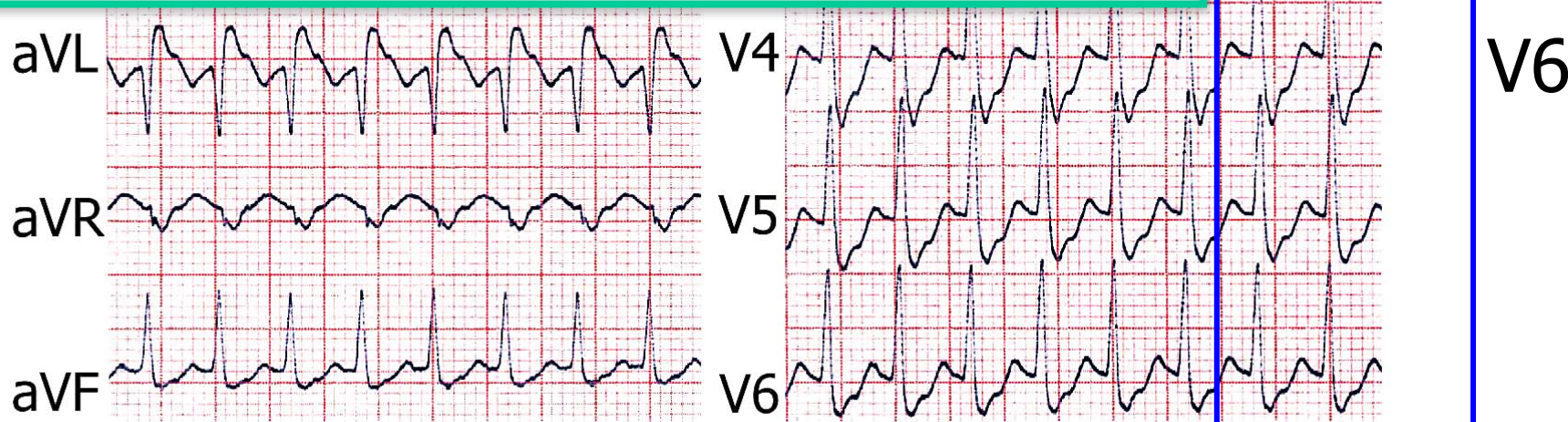
morfologia a tipo BBD



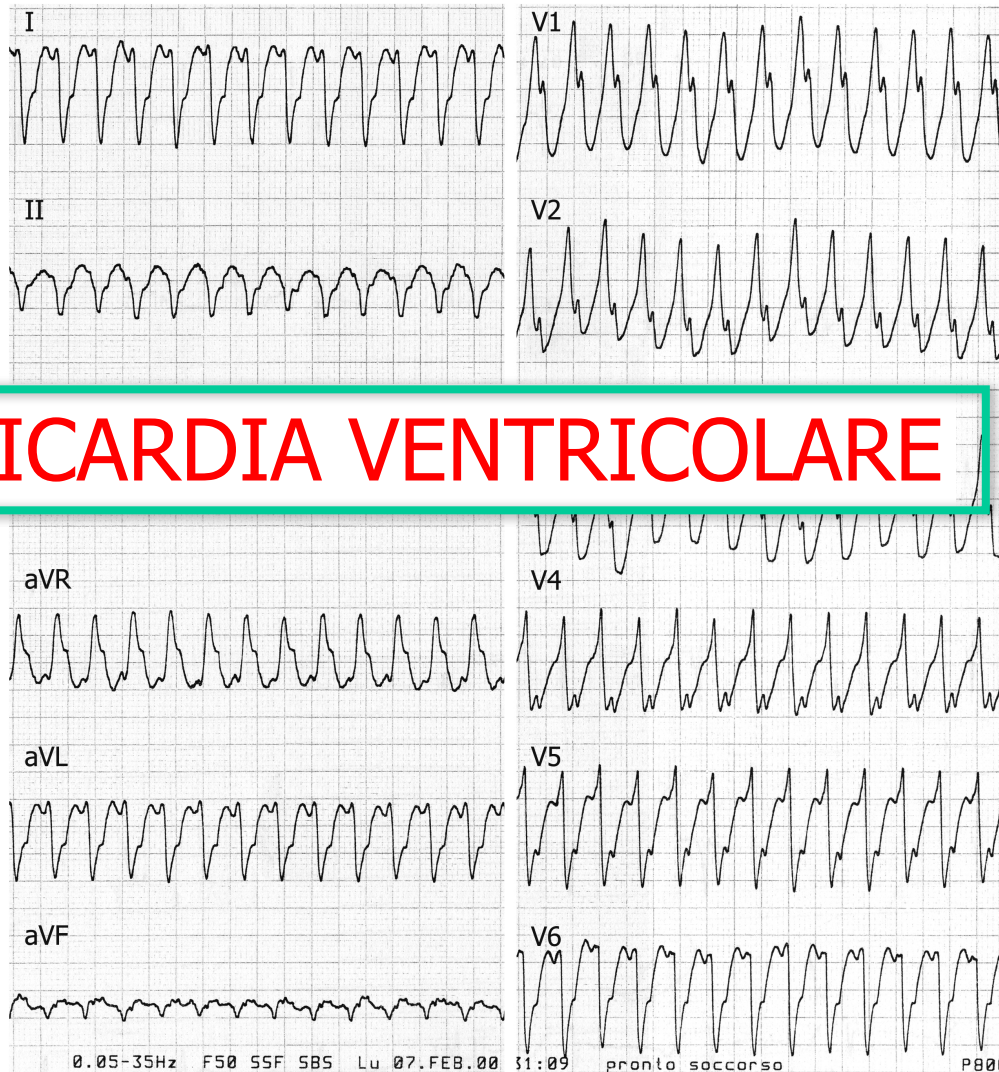
**Oreto G: I disordini del ritmo cardiaco, CSE 1997
Kindwall KE et al. Am J Cardiol 1988;61:1279-1283**



TACHICARDIA SOPRAVENTRICOLARE



TACHICARDIA VENTRICOLARE



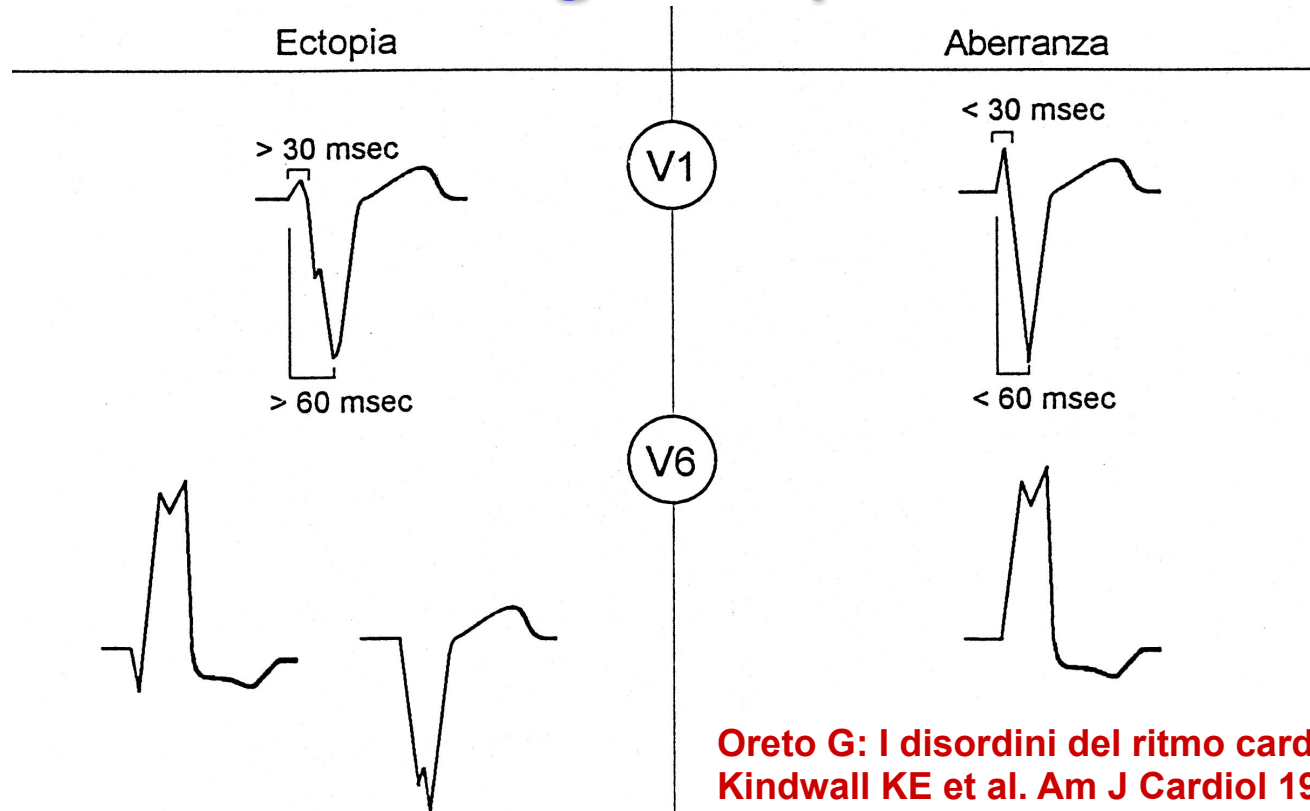
V1



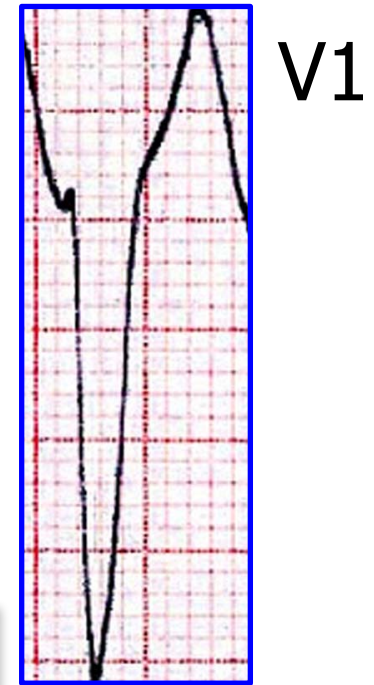
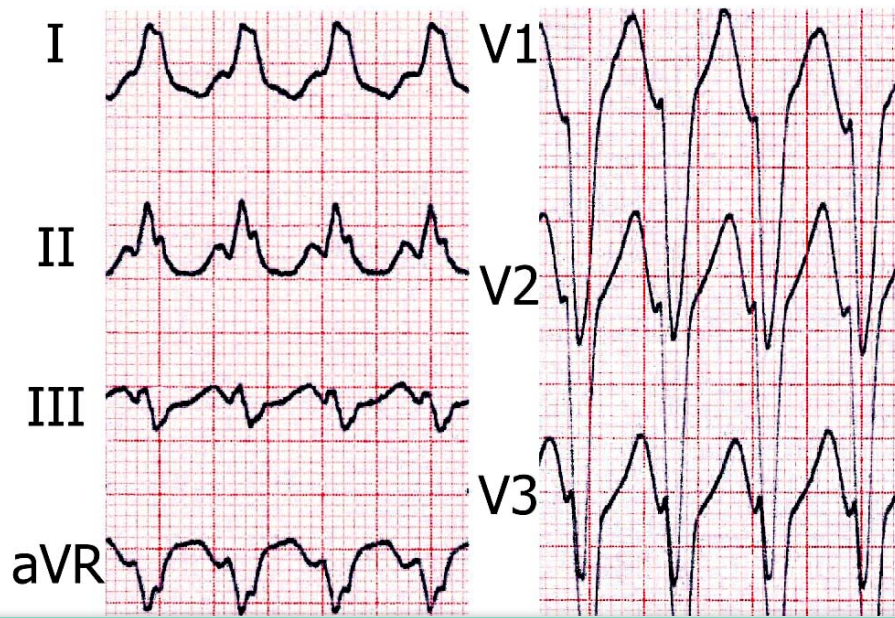
V6

DISTINZIONE DELL'ECTOPIA DALL'ABERRANZA

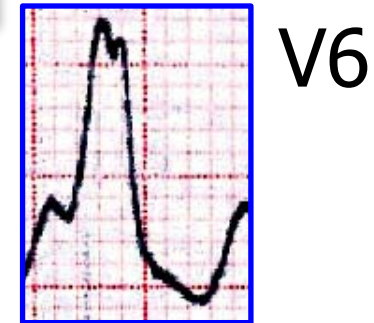
morfologia a tipo BBS



Oreto G: I disordini del ritmo cardiaco, CSE 1997
Kindwall KE et al. Am J Cardiol 1988;61:1279-1283



TACHICARDIA SOPRAVENTRICOLARE



I

II

TACHICARDIA VENTRICOLARE

III

aVR

aVL

aVF

V1

V2

V3

V4

V5

V6

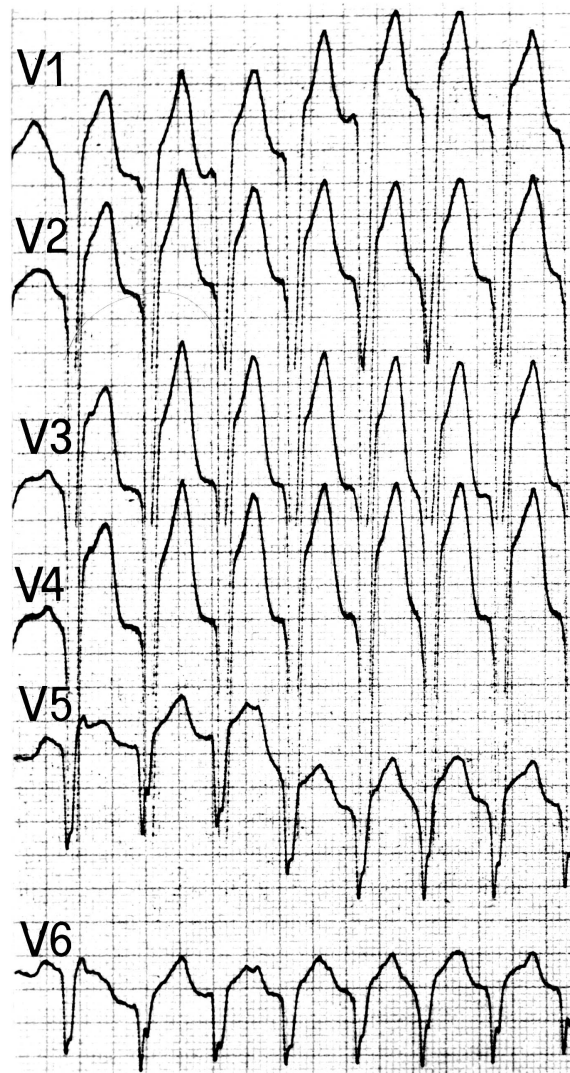
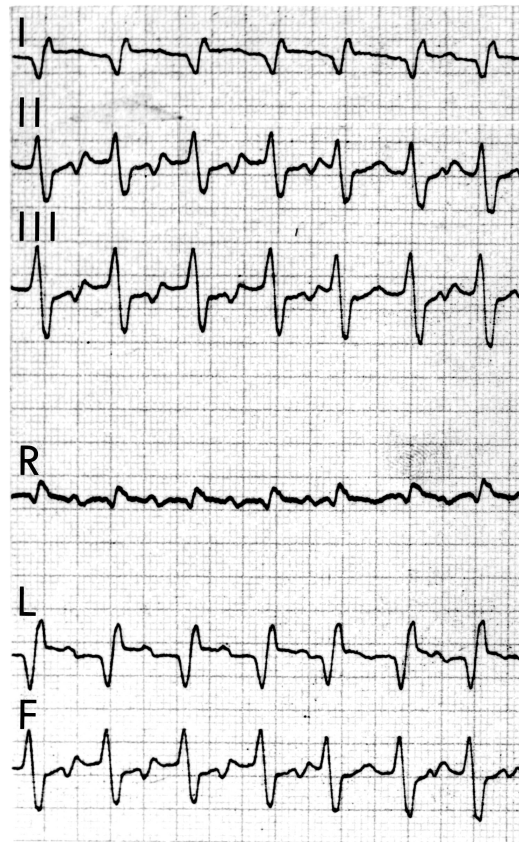
100 ms

V1

V6



Concordanza precordiale



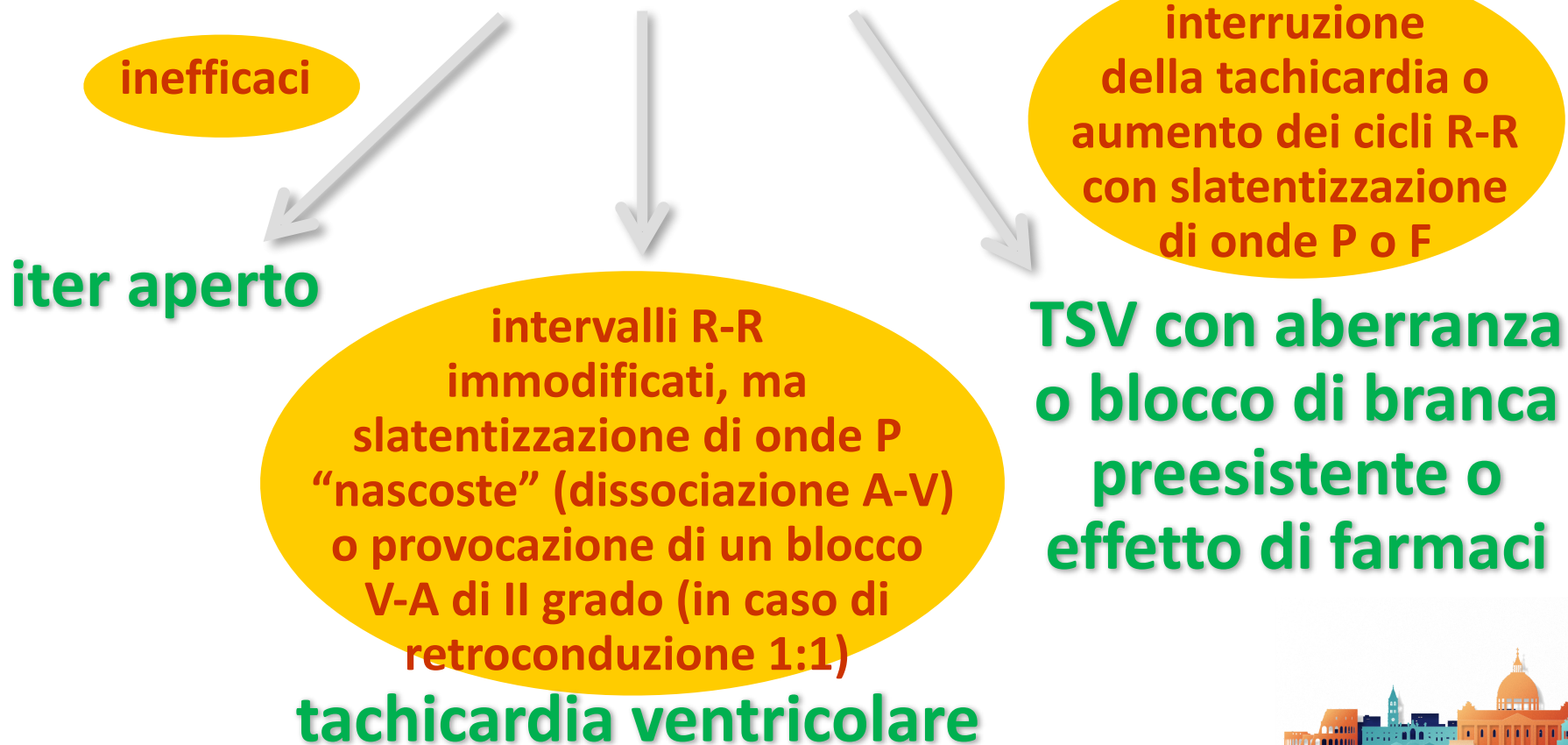
Concordanza precordiale

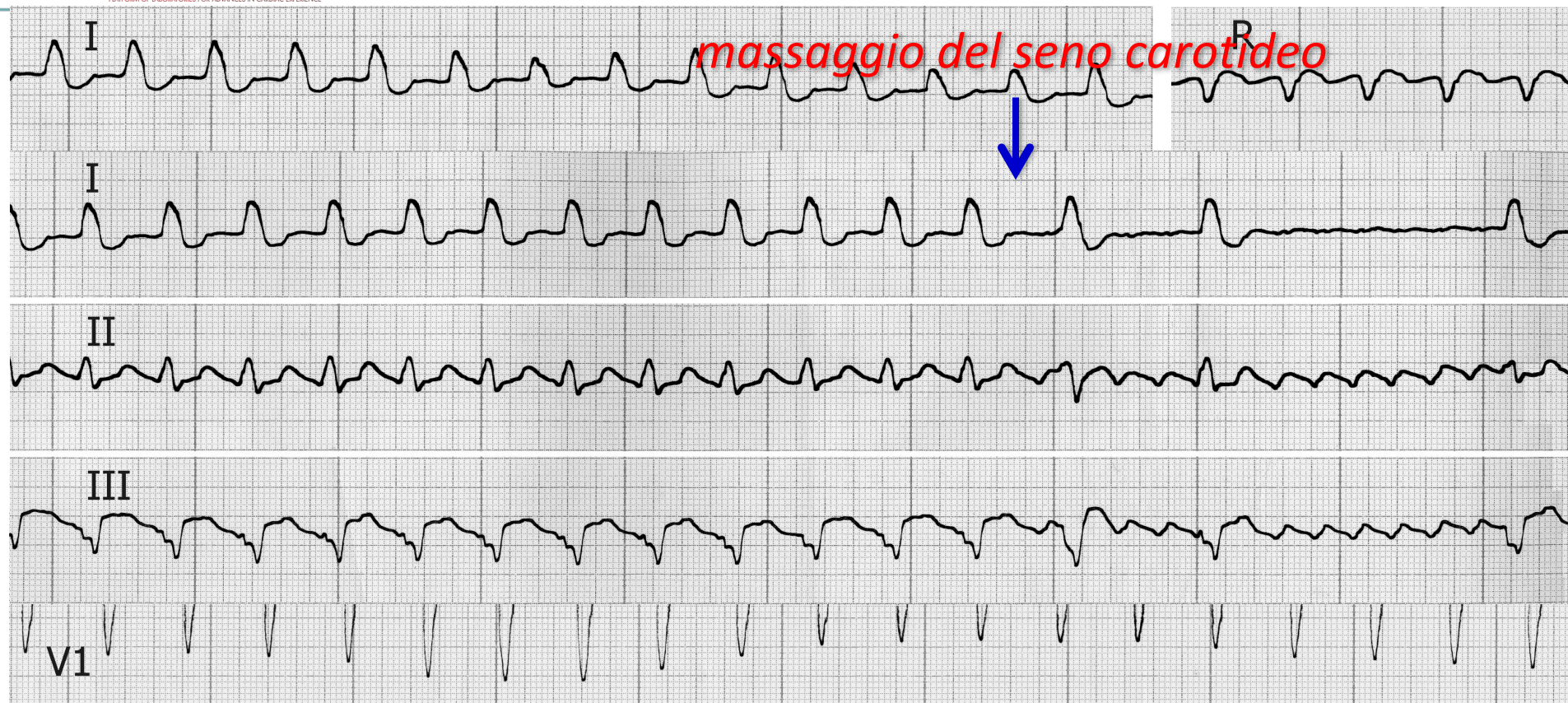
Si definisce “*concordanza*” la presenza di complessi interamente positivi (a R monofasica) o interamente negativi (morfologia QS) da V1 a V6.

Il riscontro di complessi rS o RS anche in una sola derivazione precordiale indica assenza di concordanza.

- ✓ Concordanza negativa: specifica per TV.
- ✓ Concordanza positiva: non specifica, in quanto compatibile anche con tachicardia preeccitata da fascio di Kent sinistro.

Manovre vagali

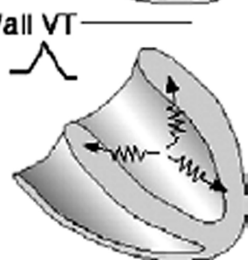
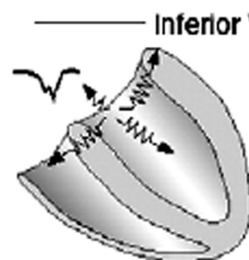
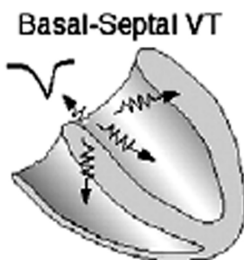
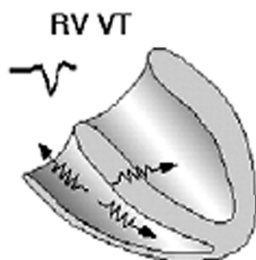
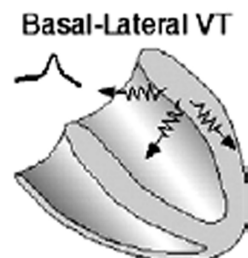
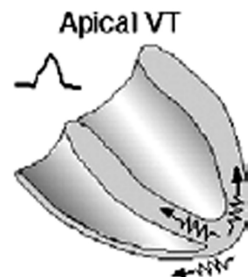
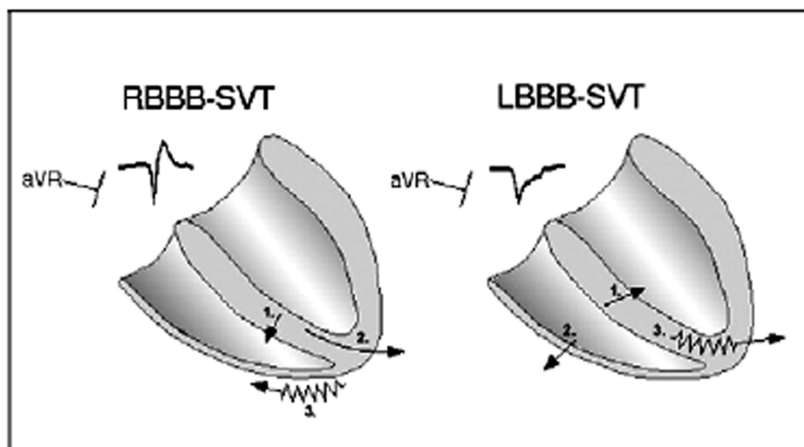




New algorithm using only lead aVR for differential diagnosis of wide QRS complex tachycardia

Heart Rhythm 2008;5:89-98

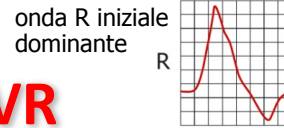
András Vereckei, MD,* Gábor Duray, MD,[†] Gábor Szénási, PhD,[‡] Gregory T. Altemose, MD, FHRS,[¶] John M. Miller, MD, FHRS[§]



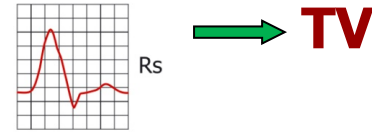
Morfologia del QRS in aVR

l'algoritmo di Vereckeï

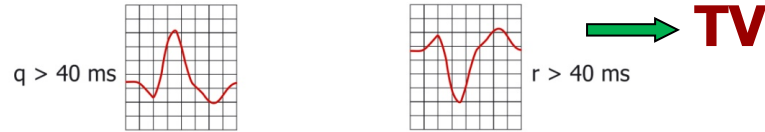
Heart Rhythm 2008;5:89-98



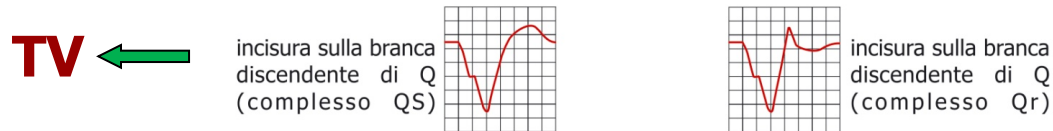
STEP 1



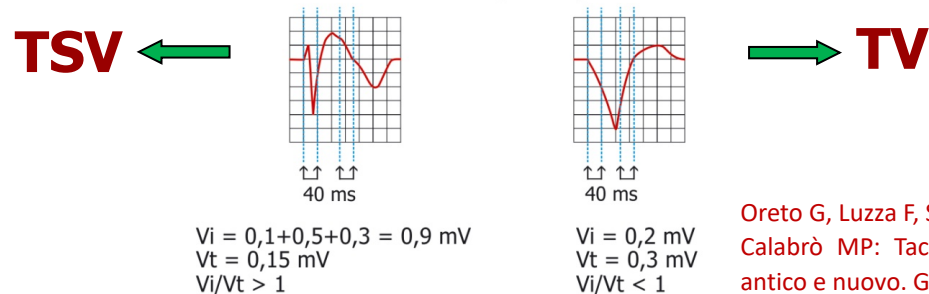
STEP 2



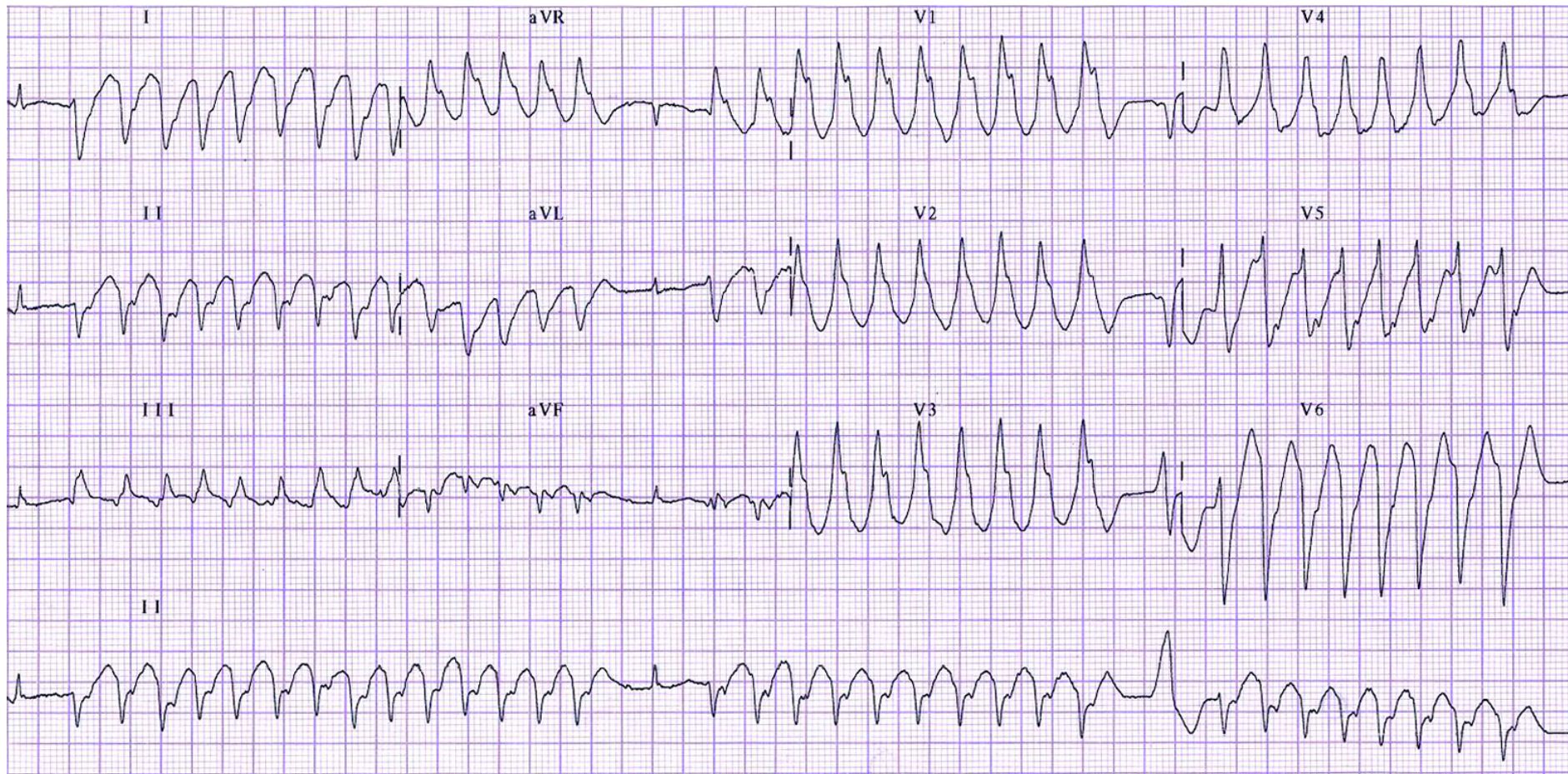
STEP 3



STEP 4 (V_i/V_t)

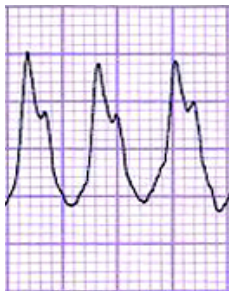


Oreto G, Luzzo F, Satullo G, Donato A, Carbone V,
 Calabrò MP: Tachicardia a QRS larghi: un problema
 antico e nuovo. G Ital Cardiol 2009; 10 (9): 580-595



Onda R iniziale dominante (step 1 positivo)

V1



V6



Ectopia

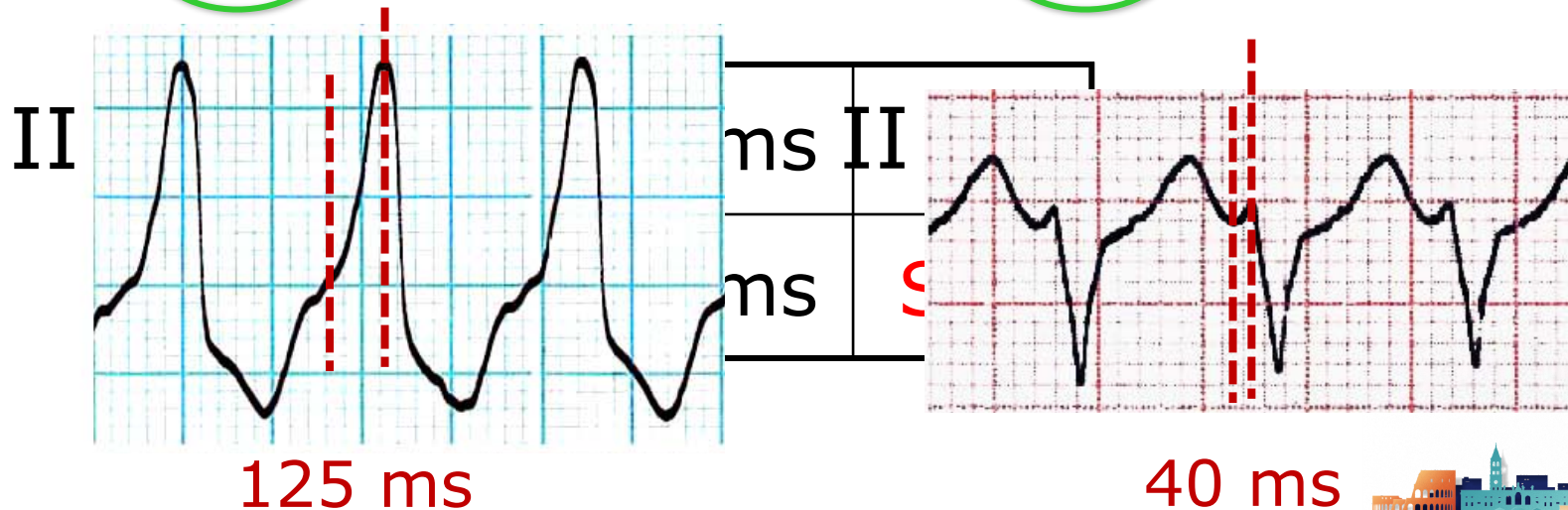
Aberranza



R-wave peak time at DII: A new criterion for differentiating between wide complex QRS tachycardias **Heart Rhythm 2010;7:922-926**

Luis Fernando Pava, MD, PhD,* Pablo Perafán, MD,* Marisol Badiel, MD, MSc,[†] Juan José Arango, MD,[†] Lluís Mont, MD, PhD,[§] Carlos A. Morillo, MD, FRCPC, FHRS,[‡] Josep Brugada, MD, PhD[§]

Differentiating between wide QRS complex tachycardias



Simple electrocardiographic criteria for rapid identification of ventricular tachycardia: The new limb lead algorithm

Limb Leads Algorithm

Accuracy, % (95% CI)

88.1 (85.0 - 90.7)

Sensitivity, % (95% CI)

87.2 (83.5 - 90.3)

Specificity, % (95% CI)

90.8 (84.6 - 95.2)

Monophasic QRS complexes in all 3 inferior leads sharing the same polarity (R or QS), and monophasic QRS complexes in 2 or 3 of non-inferior limb leads, with an opposite polarity to that in the inferior leads.

Step 1- presence of monophasic R wave in lead aVR

No 368

Yes 160 (VT 159, SVT 1)

Step 2- predominantly negative QRS in leads I, II and III

No 334

Yes 34 (VT 28, SVT 6)

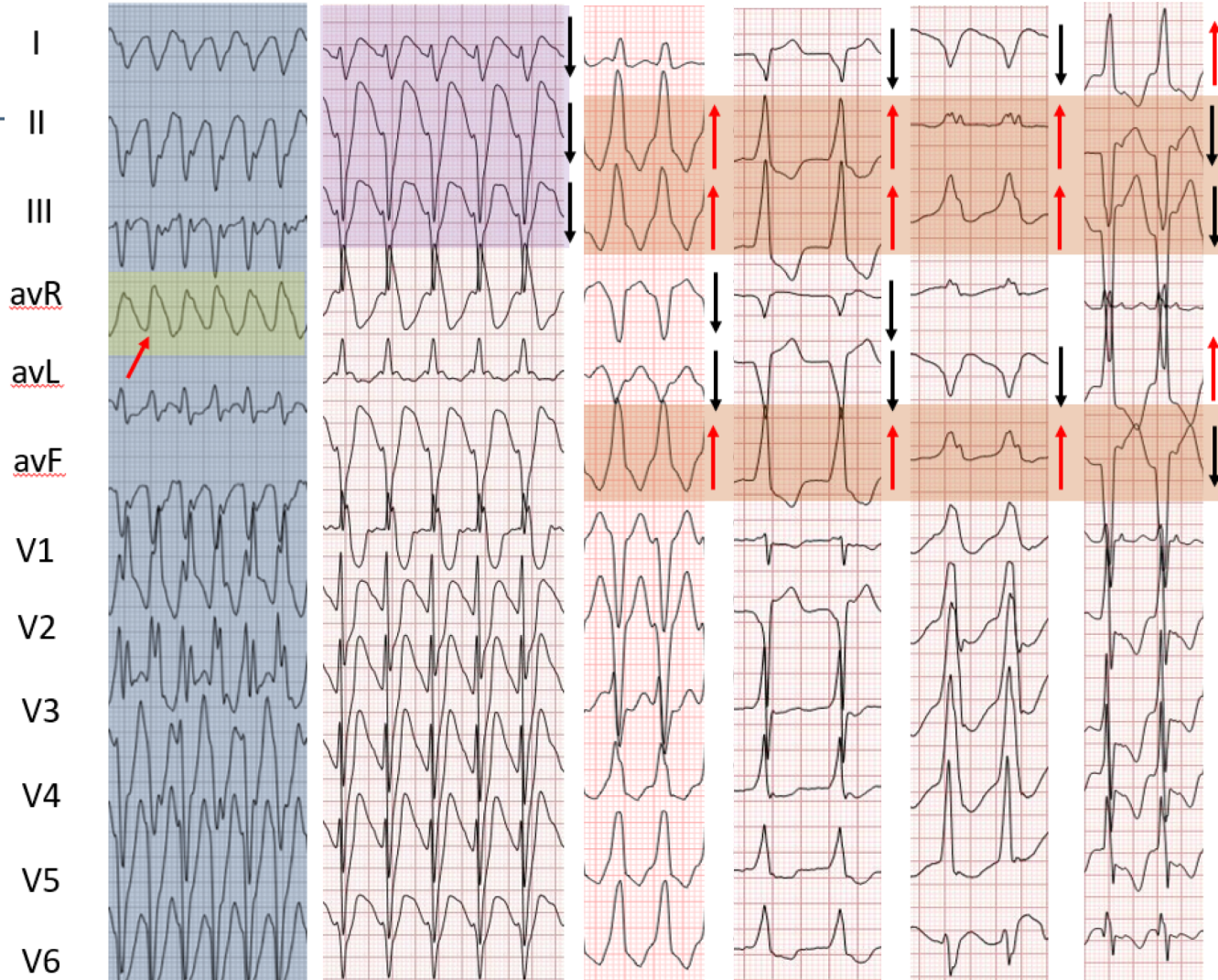
Step 3- opposing QRS complex in the limb leads

No 170 (VT 51, SVT 119)

Yes 164 (VT 159, SVT 5)

Diagnosi corretta di Tachicardia Ventricolare utilizzando l'algoritmo a 3 step di Chen-Natale.

Chen Q et al.
Heart Rhythm
2020;17:431-438



L'ECG BASALE NELLA PRATICA CLINICA

Precision Electrocardiology Course

La diagnosi differenziale
delle tachiaritmie a QRS largo,
GRAZIE
tra vecchi e nuovi criteri.

Vincenzo Carbone

