

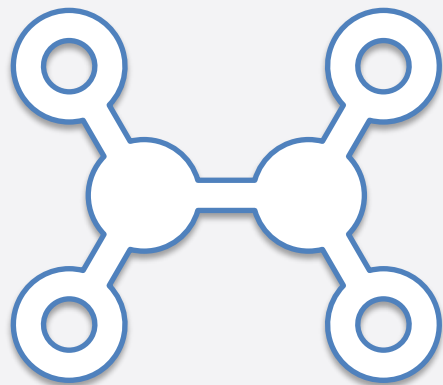


DOMENICA 10 OTTOBRE

L'ablazione della tachicardia ventricolare

Stefano Bianchi, *Roma*





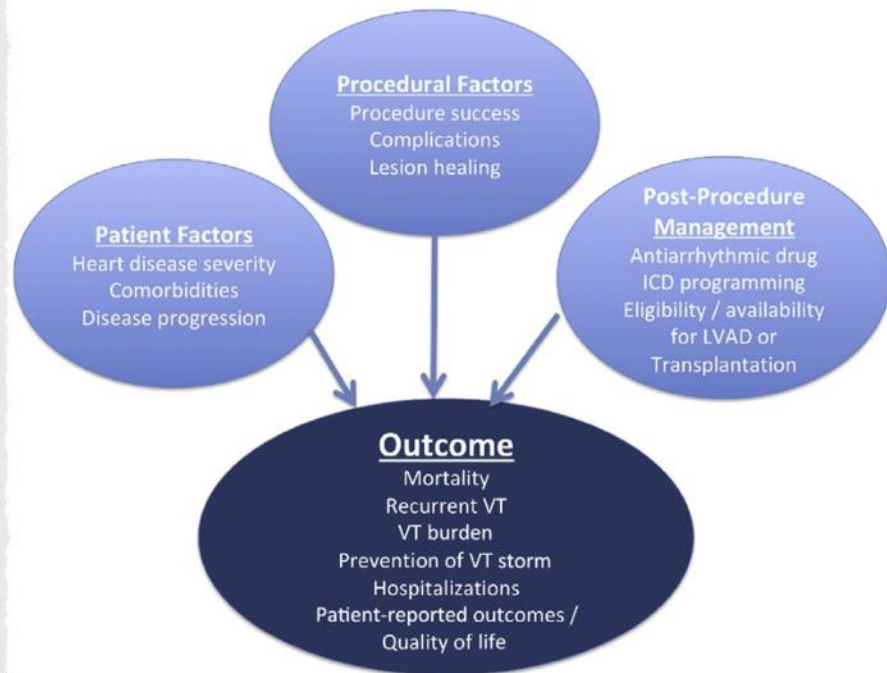
LA CONQUISTA DELLA TACHICARDIA VENTRICOLARE



Eziologia e differenti outcomes ablativi

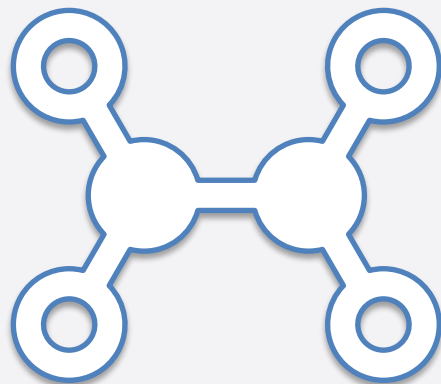
Table 1 Summary of studies evaluating different substrate ablation approaches for unstable VT

Study	Year	No. of patients	Type of substrate	LVEF (%)	End-point assessed (% achieved)	EPI mapping/ablation	RF duration (lesions or min)	Follow-up (months)	VT recurrence
Linear ablation lesions									
Marchlinski et al ²⁶	2000	16	9 ICM, 7 NICM	32 ± 15	Noninducibility (47%)	No	59 ± 34 lesions	8 (3–36)	25%
Soejima et al ⁴⁷	2001	40	ICM	29 ± 10	Noninducibility (58%)	No	21 ± 10 lesions	12 ± 6	47%
Reddy et al ¹	2007	64	ICM		Noninducibility (76%)	No	NR	31 ± 8	12%
Ablation of late potentials									
Arenal et al ⁹	2003	24	21 ICM, 2 NICM, 1 ToF	30 ± 9	Elimination of LPs related to the VT and noninducibility (88%)	No	11 ± 8 lesions	9 ± 4	21%
Volkmer et al ¹⁹	2006	25	ICM	30 ± 8	Elimination of LPs and noninducibility (81%)	No	14 ± 6 lesions	26 ± 14	29%
Nogami et al ¹⁶	2008	18	ARVC	NR	Change of LPs* (67%)	No	17 ± 10 lesions	61 ± 38	33%
García et al ¹⁴	2009	13	ARVC	NR	Elimination of LPs and noninducibility (85%)	Yes	35 ± 26 lesions ENDO 37 ± 21 lesions EPI	18 ± 13	33%
Bai et al ¹¹	2011	26	ARVC	53 ± 10	Elimination of LPs and noninducibility (100%)	Yes	26 ± 14 min	39 ± 4	15%
Vergara et al ¹⁸	2012	50	36 ICM, 14 NICM	32 ± 9 ICM; 36 ± 10 NICM	Elimination of LPs (84%)	Yes	NR	13 ± 4	20%
Arenal et al ¹⁰	2013	59	ICM	30 ± 11	Elimination of LPs (78%)	No	11 ± 5 min	39 ± 21	42%
Ablation of LAVA									
Jais et al ¹⁵	2012	70	56 ICM, 14 NICM	35 ± 10	Elimination of LAVA (70%)	Yes	23 ± 11 min	22 (14–27)	32%
Scar homogenization									
Di Biase et al ¹³	2012	43	ICM	24 ± 8	Elimination of any abnormal potential ± failure to capture (NR)	Yes	74 ± 21 min	21 (19–25)	19%
Ablation of interconnected channels (scar dechanneling)									
Berrueto et al ¹²	2012	11	ARVC	55 ± 7	Elimination of LP channels (NR)	Yes	6.3 (4–8.7) lesions	11 (6–24)	9%
Tung et al ¹⁷	2013	21	15 ICM, 2 NICM, 2 ARVC, 1 sarcoid, 1 noncompaction, 1 Chagas	25 (25–30)	Change or elimination of LPs ± failure to capture ± impedance drop > 10 Ω plus noninducibility (84%)	Yes	7 (4–14) lesions	11 (6–18)	14%
Berrueto et al ²¹	2015	101	75 ICM, 26 NICM	36 ± 13	Elimination of LP channels (84%)	Yes	28 ± 16 min	24	20%
Core isolation of critical substrate elements									
Tzou et al ²⁰	2015	44	32 ICM, 12 NICM	31 ± 13	Isolation with exit block (84%)	Yes	111 ± 91	18 ± 9	14%



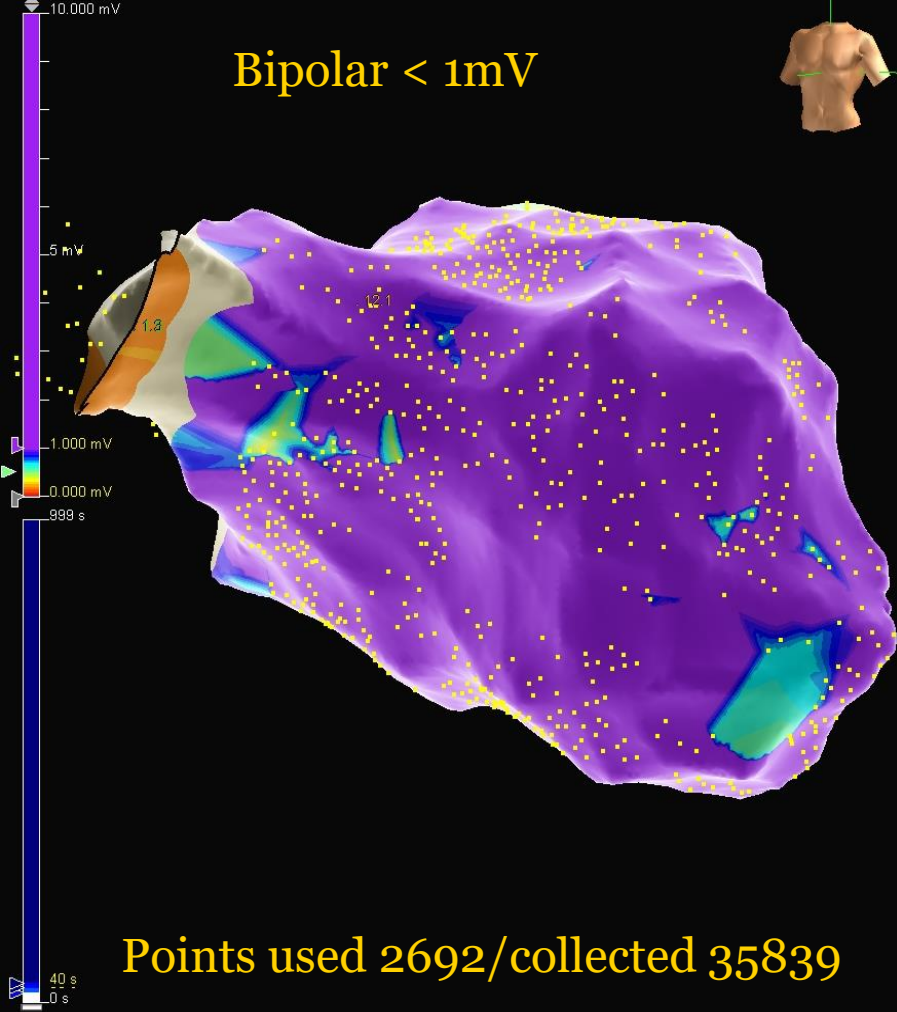
VA consensus 2019

Figure 13 Factors influencing outcomes post VA ablation. ICD = implantable cardioverter defibrillator; LVAD = left ventricular assist device; VA = ventricular arrhythmia; VT = ventricular tachycardia.

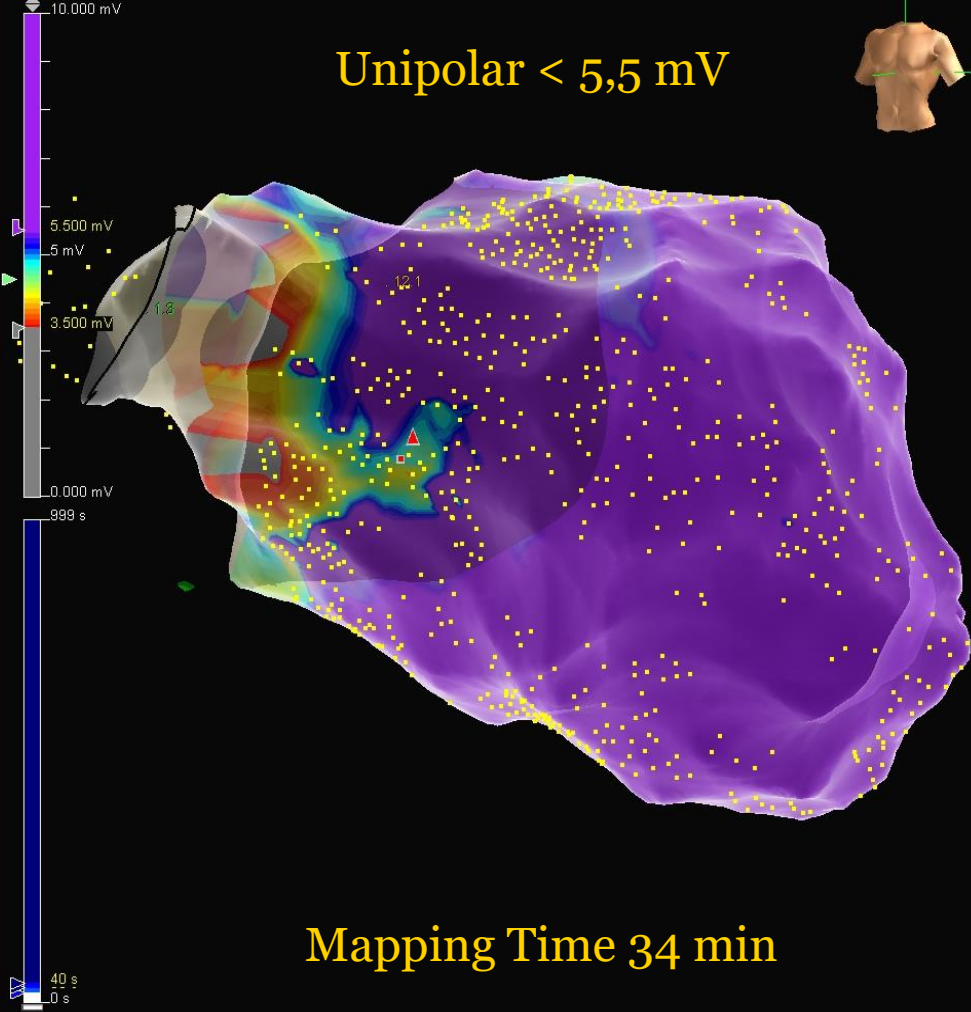


LA CONQUISTA DELLA TACHICARDIA VENTRICOLARE: MECCANISMI ED INNOVAZIONE

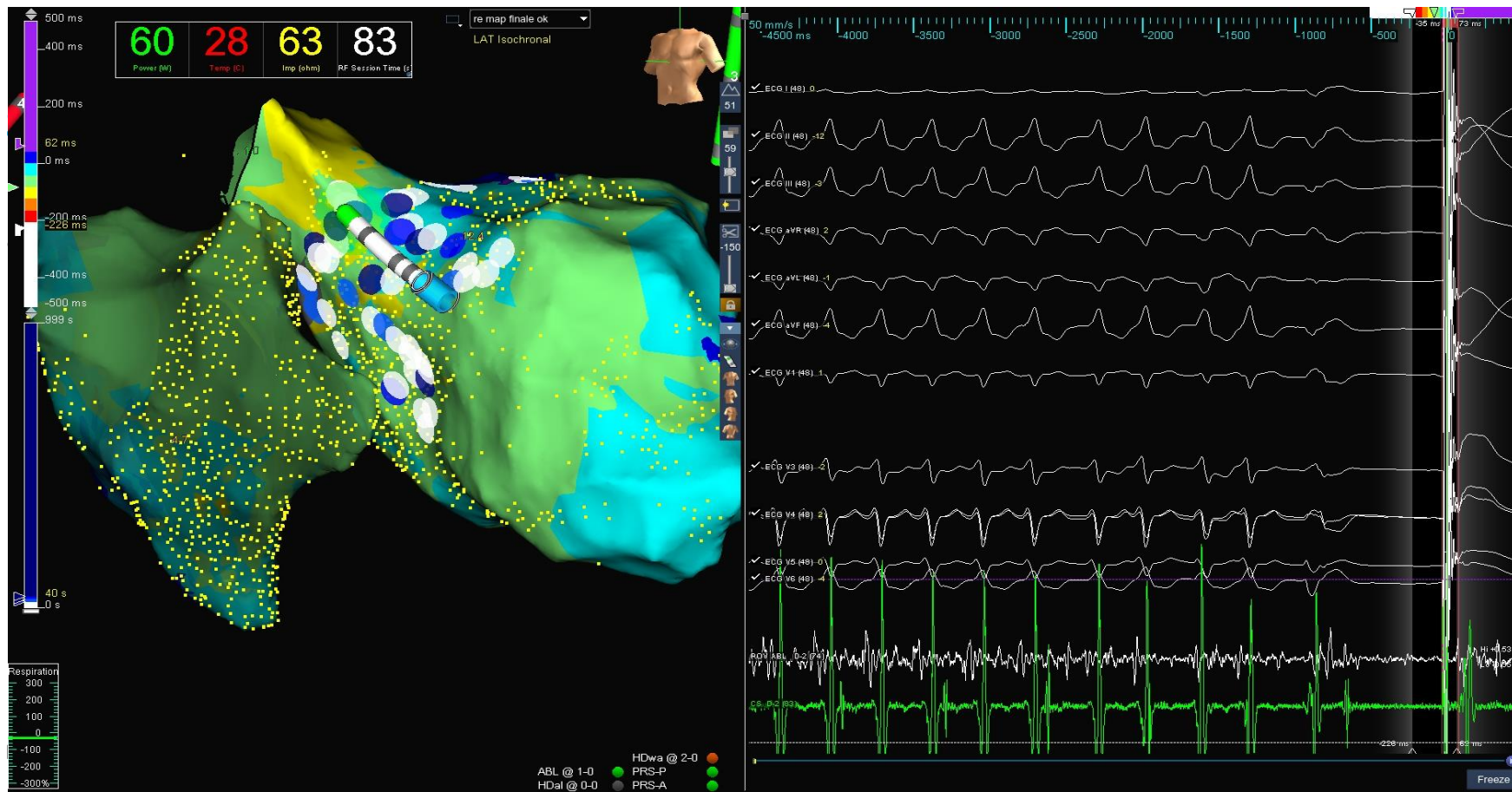
Bipolar < 1mV



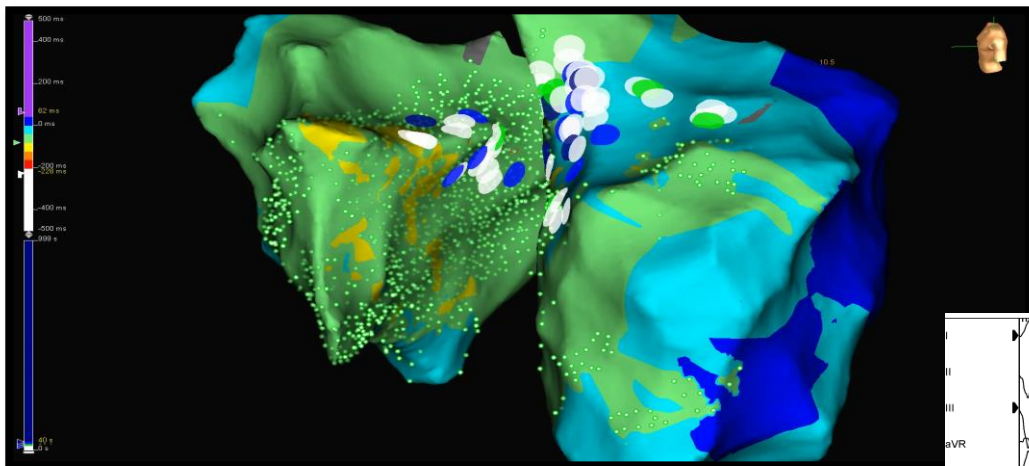
Unipolar < 5,5 mV



Septal Termination 60 W – 83 sec.

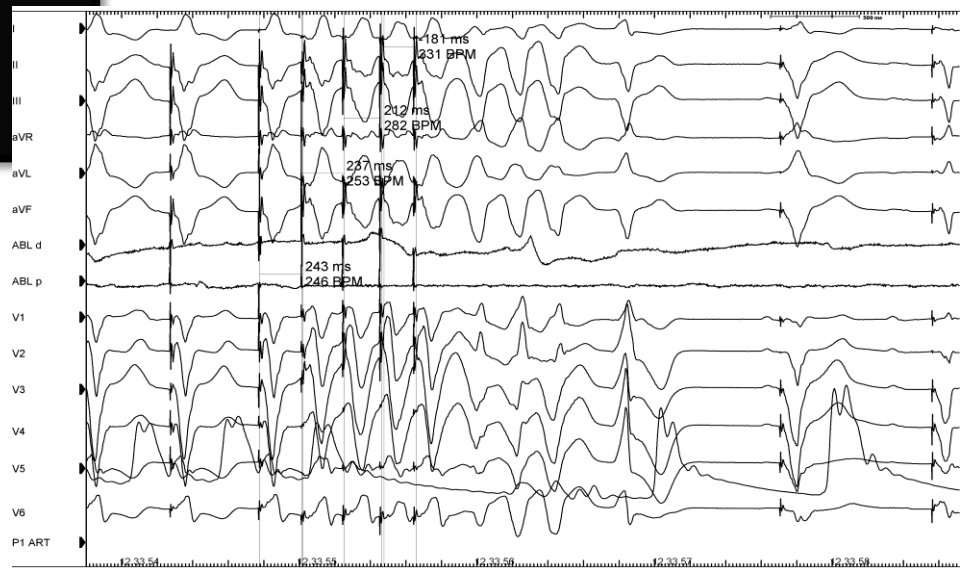


LV-RV Lesion SET. RF tot time 29,5 min untill non inducibility



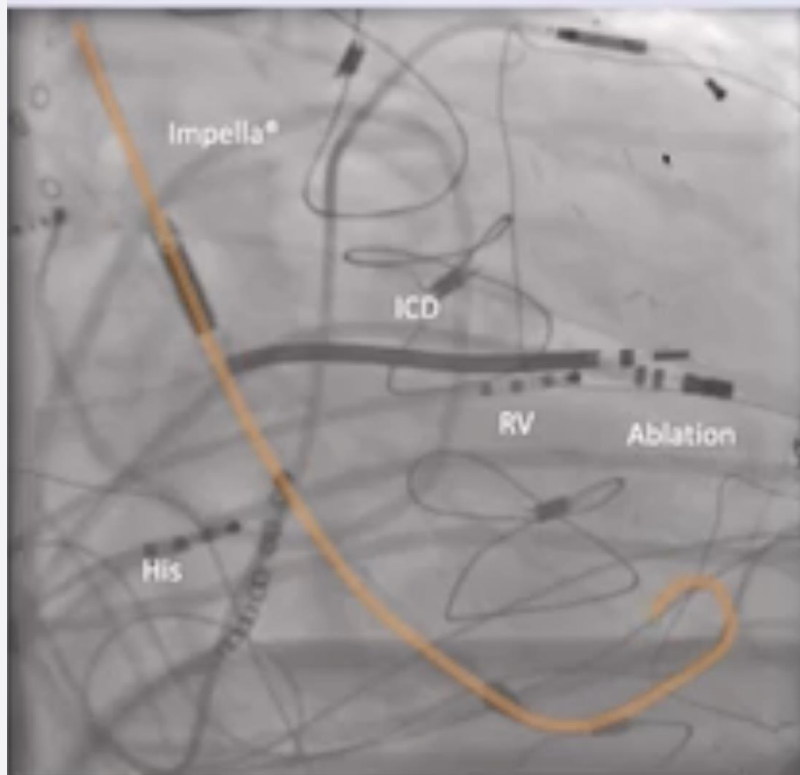
PVS finale Drive 500 240-
240-220-180

Proprietary and confidential — do not distribute





Hemodynamic Support



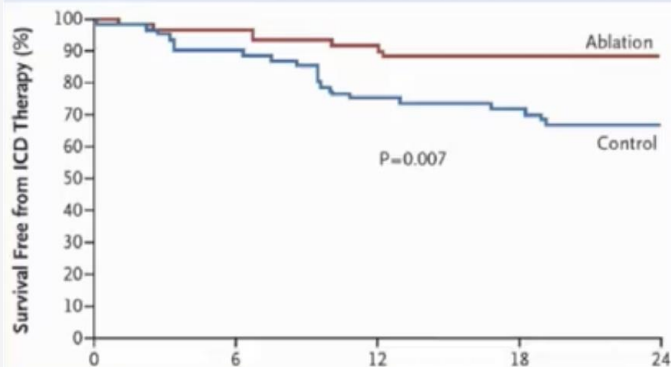


VT Ablation: When?

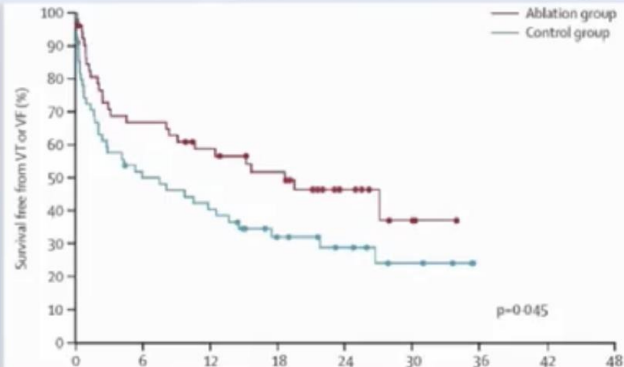
Evidence is accumulating that ablation earlier in a patient's course may be better than later:

- Avoid shocks with their $\uparrow$ in morbidity, ? mortality
- Avoid cumulative antiarrhythmic drug toxicity
- Prophylactic ablation is in play (not widely used)

SMASH-VT (Reddy V, *NEJM*, 2007)



VTACH (Kuck KH, *Lancet*, 2010)

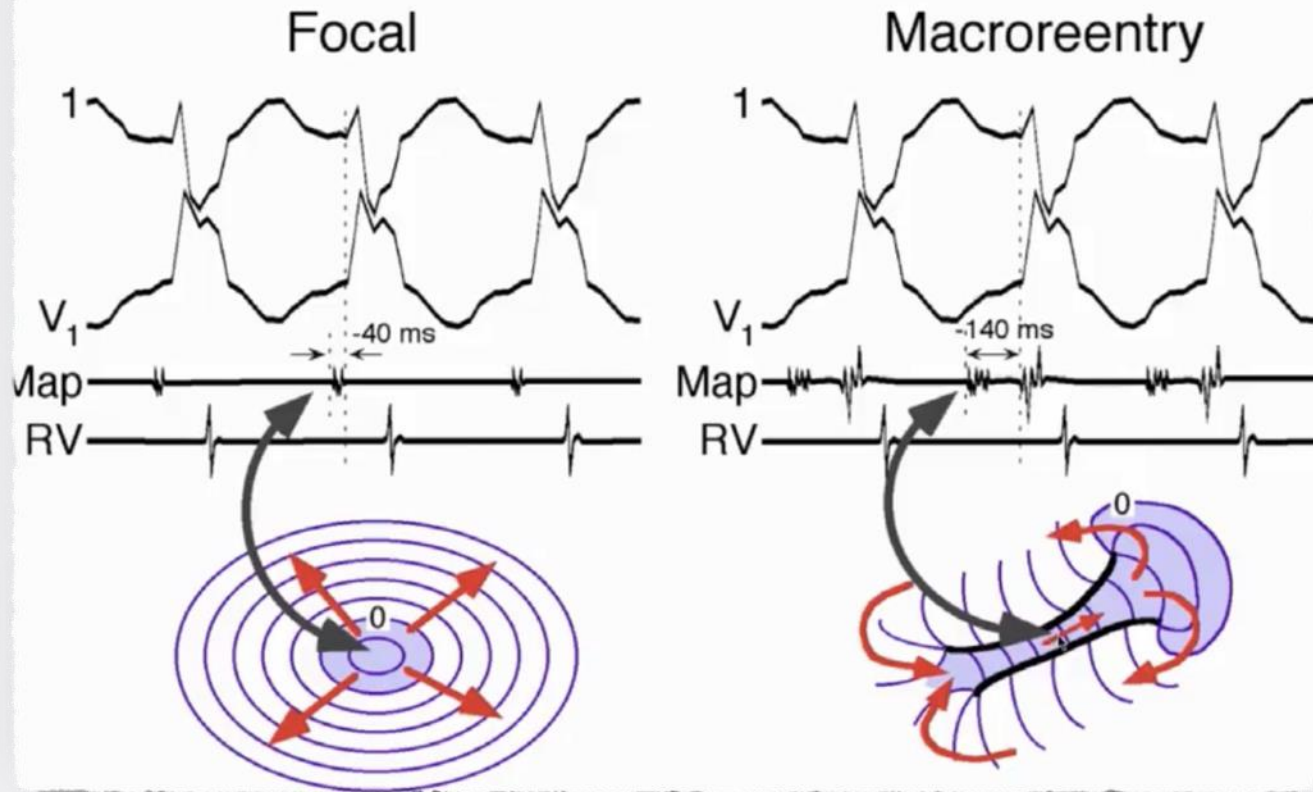




MECCANISMI DELLE TV

1. FOCALE
2. MACRORIENTRO

VT Mechanisms

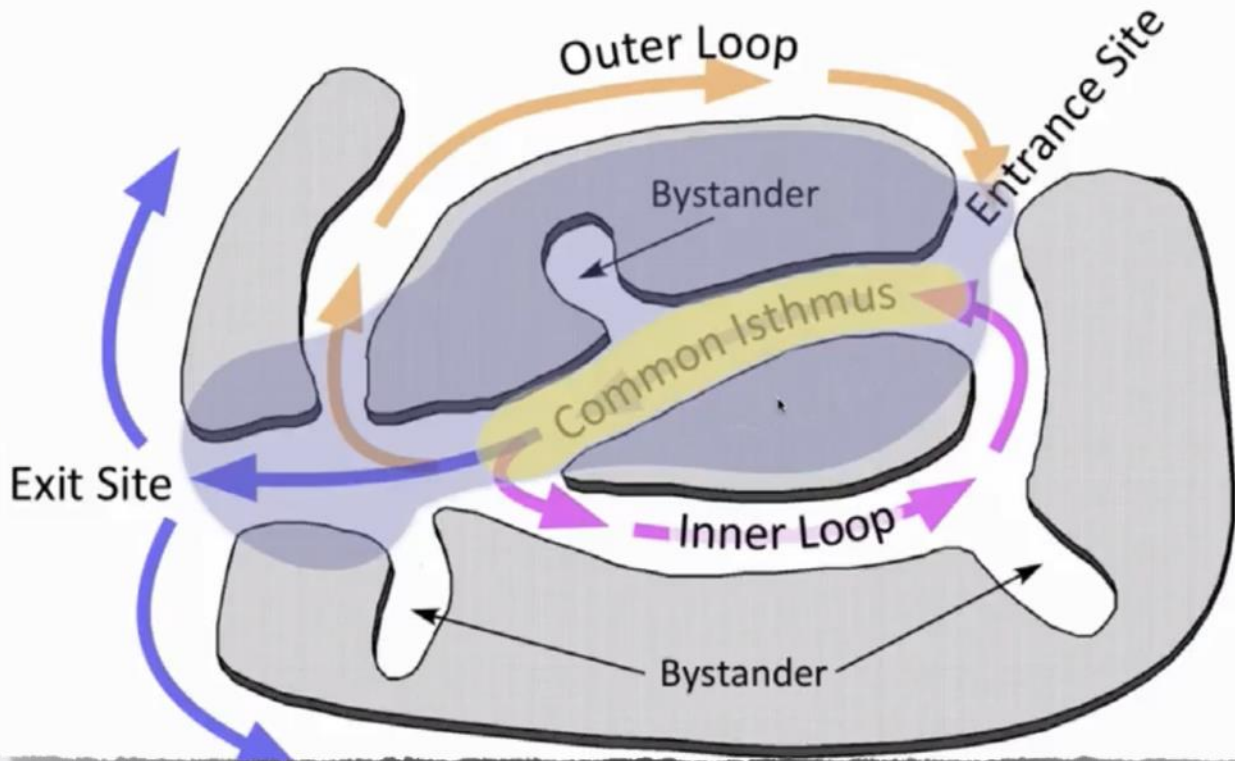


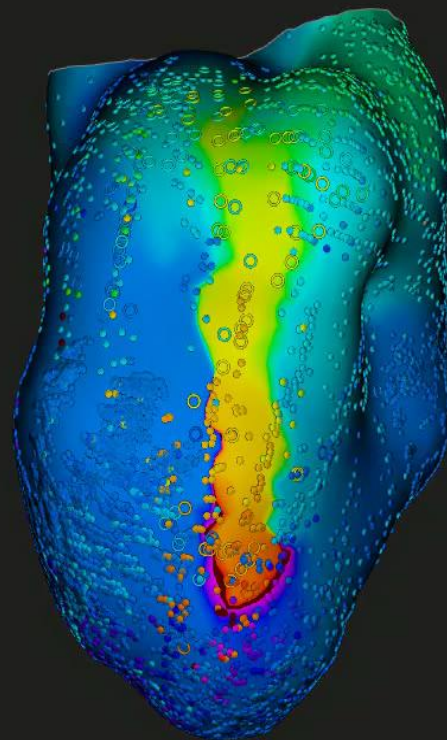


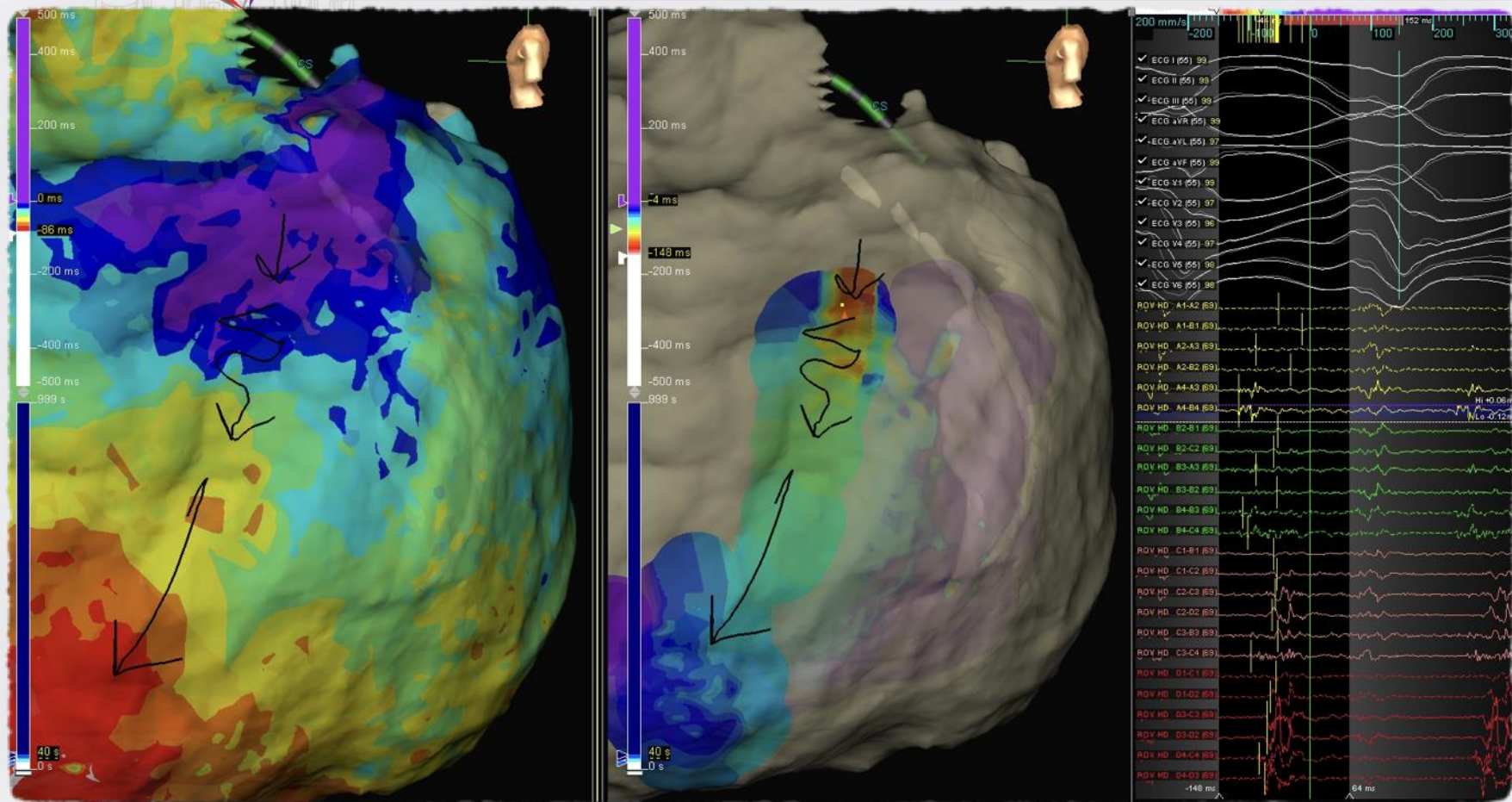
MECCANISMI DELLE TV

1. FOCAL
2. MACRORIENTRO

Modeling Scar-Based Reentry





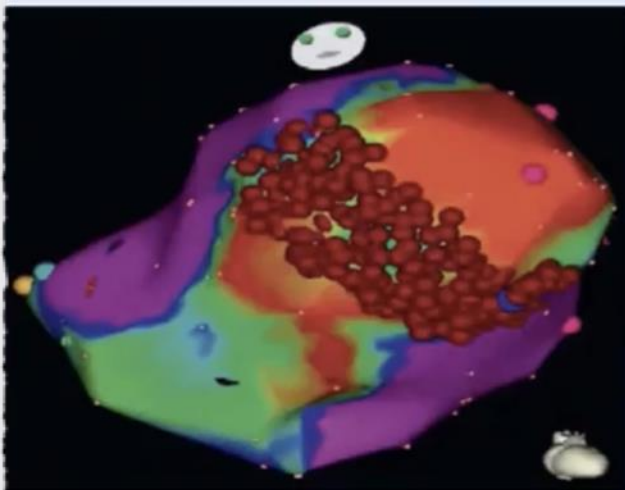




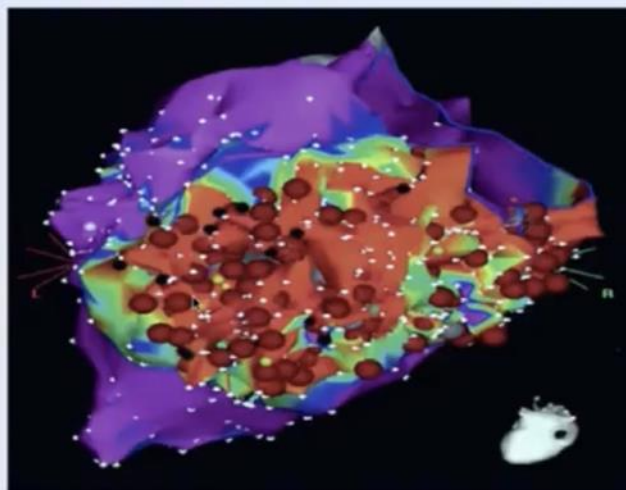
Substrate Homogenation

Extensive ablation of substrate vs activation targets

- Longer fluoroscopy & RF times, similar procedure times



Activation Map Targeting



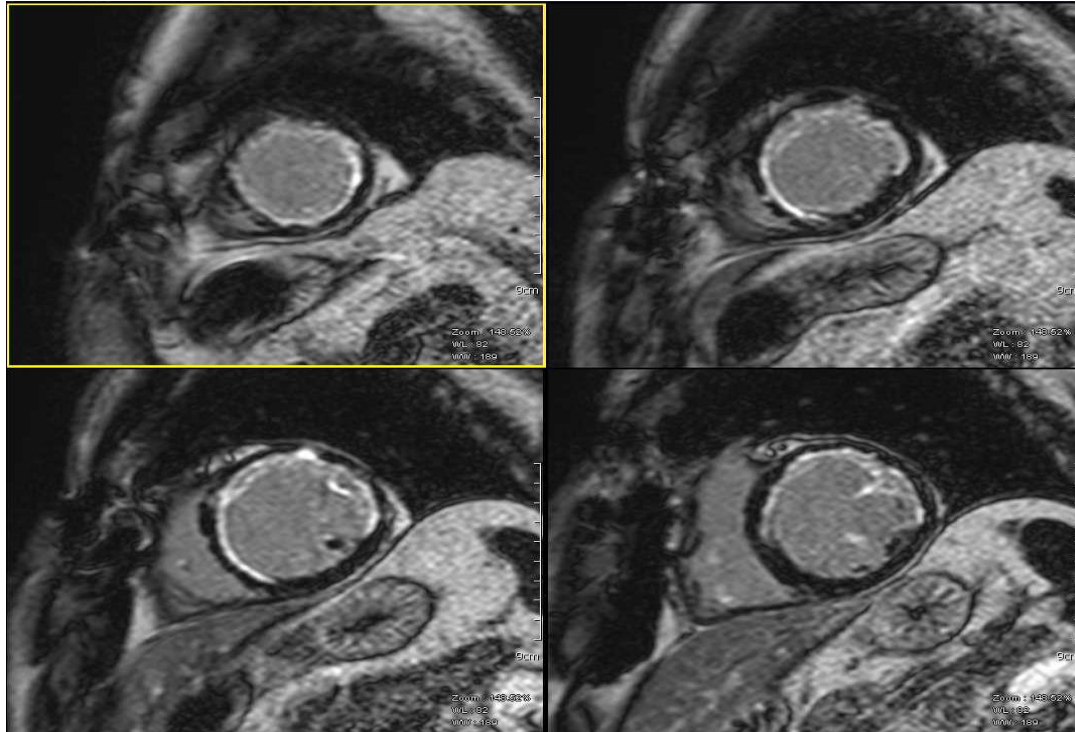
Substrate Targeting



BEV in soggetto
Asintomatico

Danno subepicardico esteso
a disposizione non ischemica
su base post-flogistica

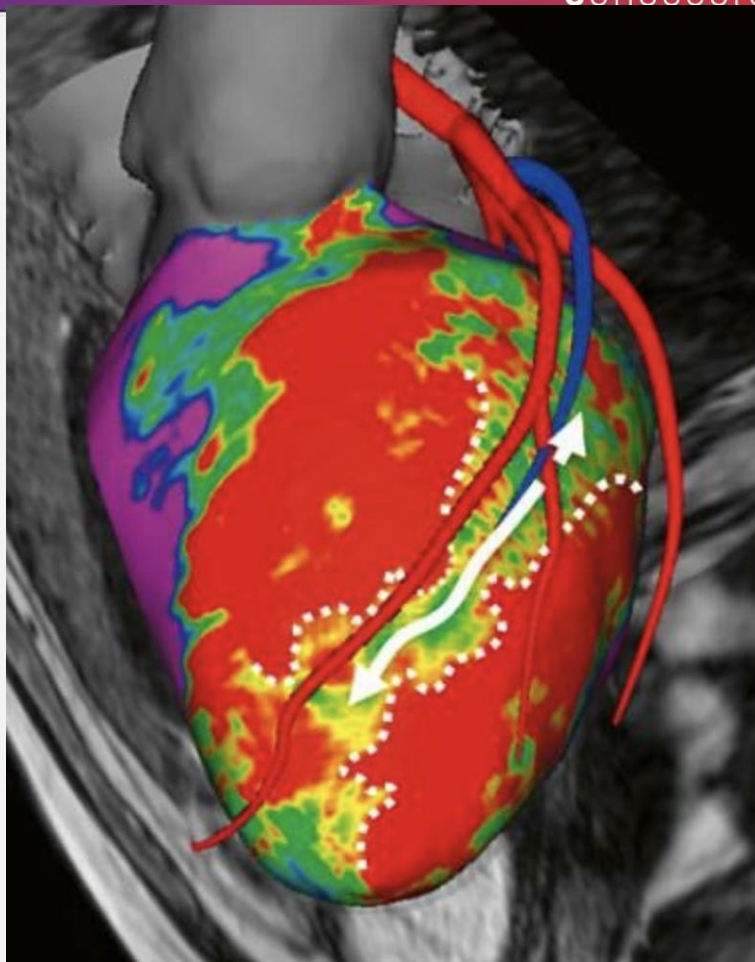
Late Gadolinium Enhancement :Fibrosi sostitutiva

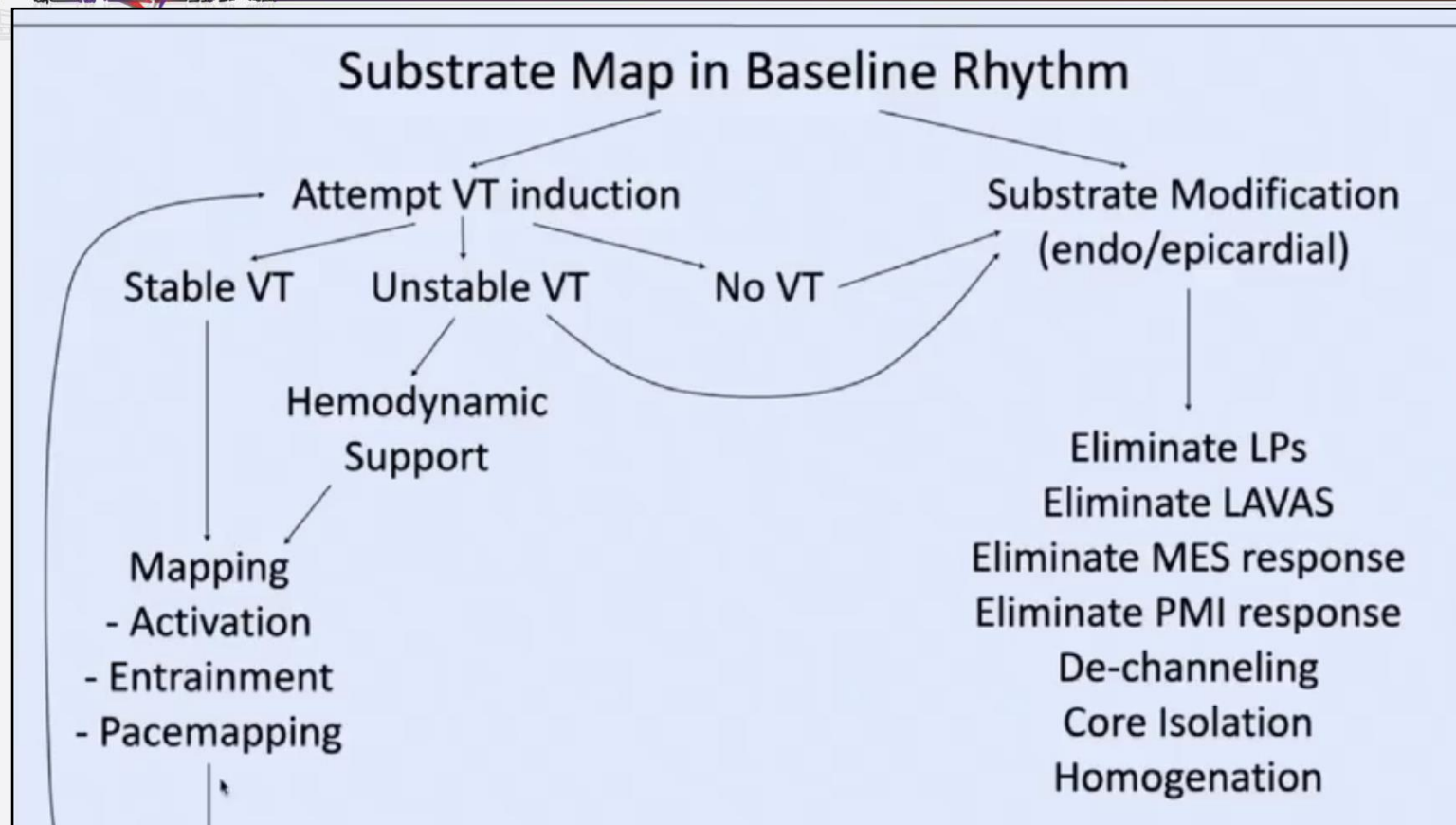


Esteso infarto



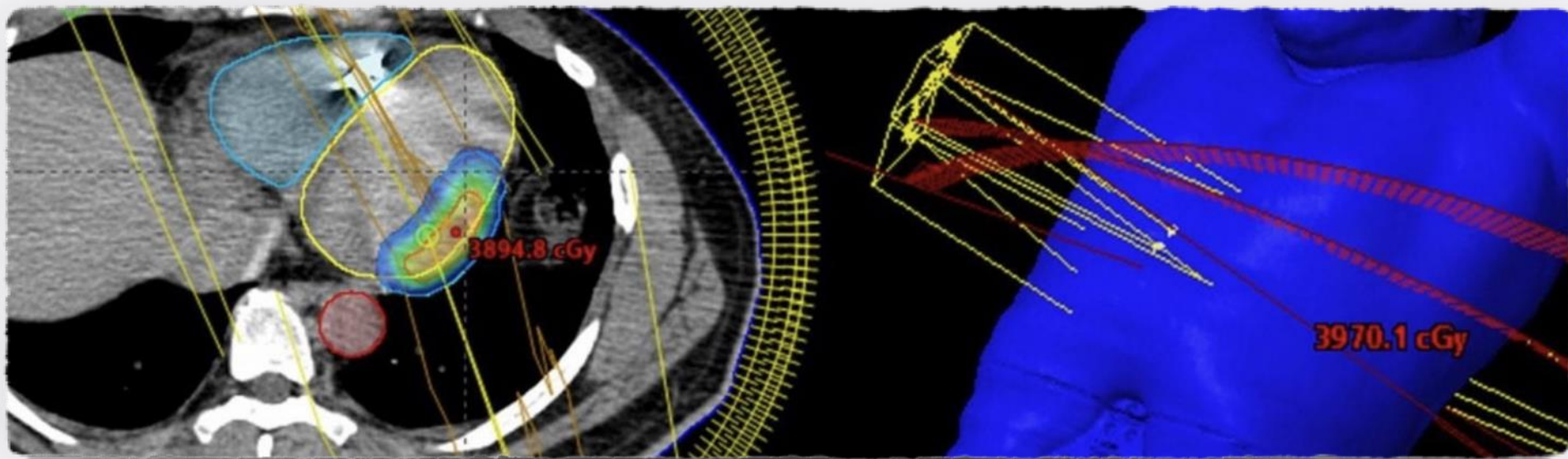
Conoscere e Curare il Cuore 2021

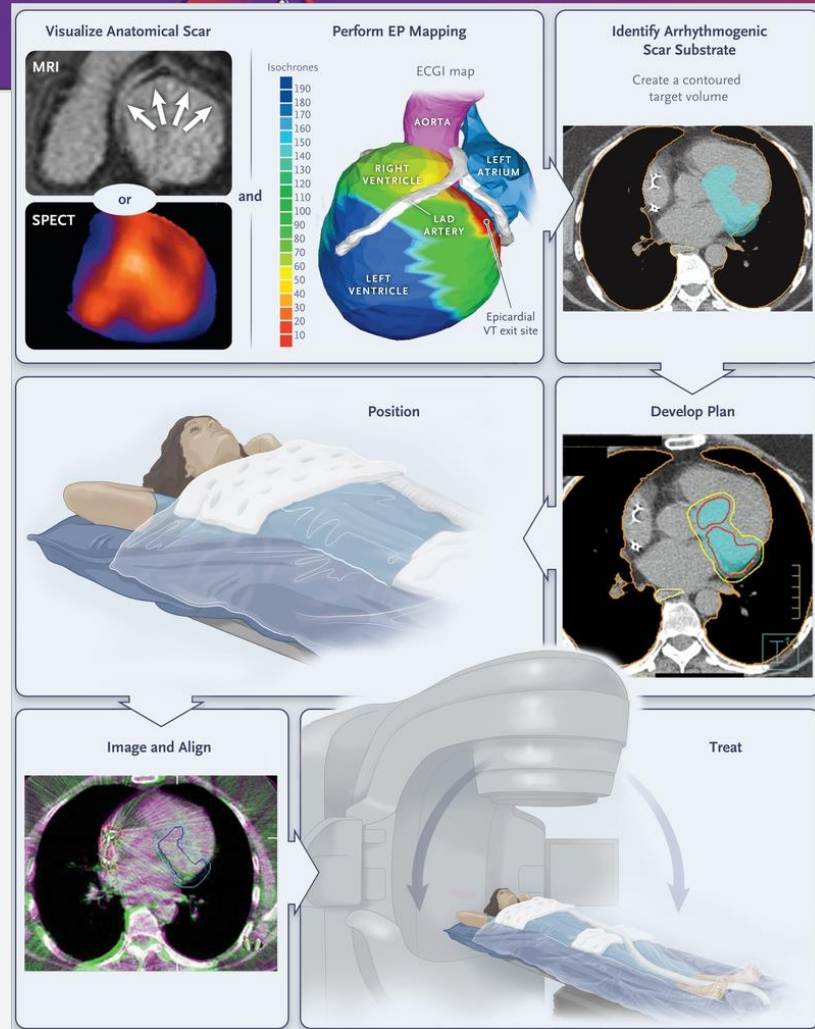






RADIOTERAPIA PER LA CURA DELLA TACHICARDIA VENTRICOLARE





Stereotactic Body Radioablation

Previously unreachable substrate can potentially be addressed by external radiotherapy

- Allows focusing of radiotherapy to target tissue while minimizing effect on normal tissues
- Requires precise targeting and coordination of effort:
 - Electrophysiologist
 - Radiation physicist
 - Radiation oncologist/nuclear medicine staff
- Can be delivered in a single session of <20 min
- >99% reduction in VT episodes after a 6-wk blanking
- Early experience shows safety and efficacy

Tachicardia ventricolare refrattaria a
trattamento ablativo

Simpaticotomia modificata

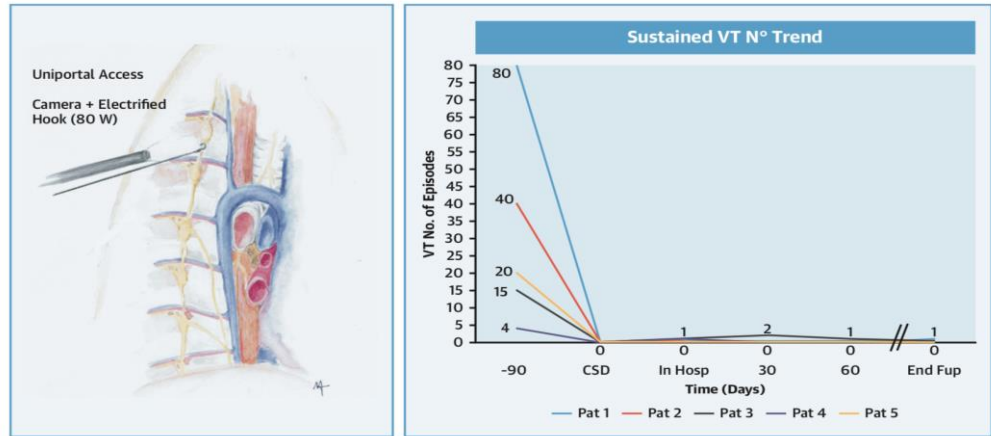
Outcomes

Riduzione burden aritmico

Outcome of a Modified Sympathicotomy for Cardiac Neuromodulation of Untreatable Ventricular Tachycardia

Filippo M. Cauti, MD,^{a,*} Pietro Rossi, MD, PhD,^{a,*} Stefano Bianchi, MD,^a Katia Bruno, MD,^b Luigi Iaia, MD,^a Chiara Rossi, MD,^c Francesco Pugliese, MD,^b Raffaele Quagliione, MD,^d Federico Venuta, MD,^e Marco Anile, MD, PhD^e

CENTRAL ILLUSTRATION Modified Sympathicotomy for Cardiac Neuromodulation

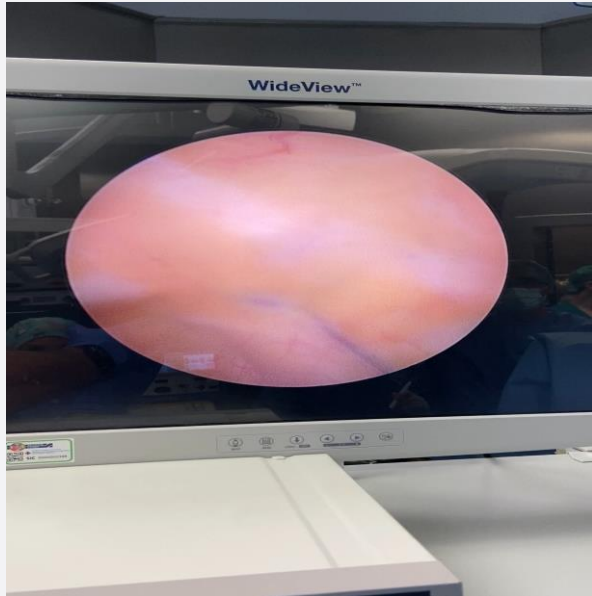


Cauti, F.M. et al. J Am Coll Cardiol EP. 2020;■(■):■-■.

(Left) Uniportal VATS sympathicotomy with electrified hook. (Right) With sustained VT trend before and after surgery. CSD = cardiac sympathetic denervation; Pat = patient; VATS = video assisted thoracoscopic surgery; VT = ventricular tachycardias.



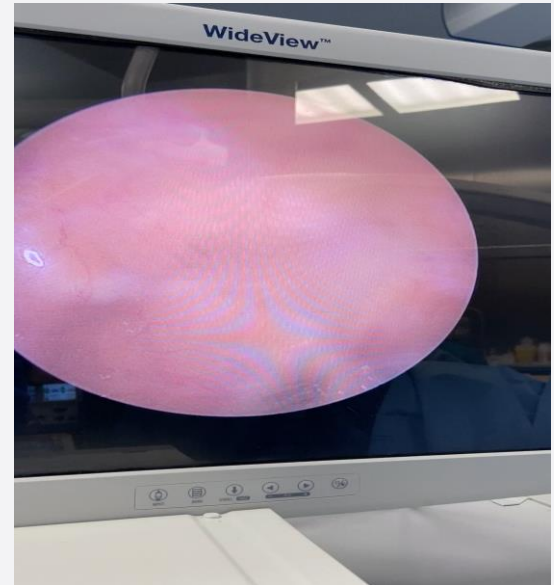
Sympathetic chain visualization



Lesion



Lesions set





QUANDO GIOCARE LA CARTA ABLAZIONE

