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AIRO2022

Radioterapia di precisione per un'oncologia innovativa e sostenibile

BOLOGNA, 25-27 NOVEMBRE
PALAZZO DEI CONGRESSI

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RADIOABLAZIONE VENTRICOLARE STEREOTASSICA PER ARITMIA VENTRICOLARE: ESPERIENZA MONOCENTRICA

Federico Colombo, MD

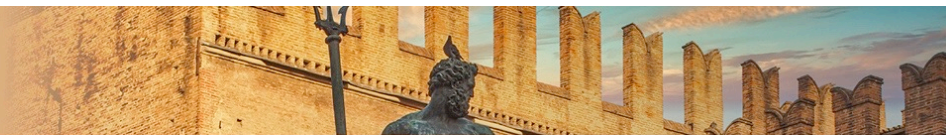
Scuola di Specializzazione in Radioterapia UNIMORE

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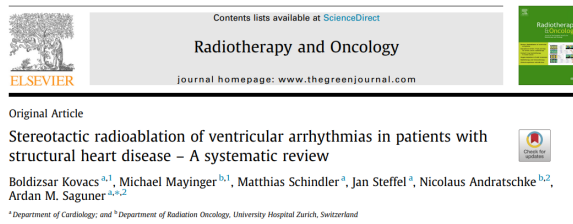


CONFLICT OF INTEREST

Nothing to declare



BACKGROUND



- ✓ VT is a life-threatening condition, which usually implies the need of an ICD in combination with antiarrhythmic drugs and CA by radiofrequency
- ✓ However, CA cannot be successfully applied to all patients with recurrent VT
- ✓ In this context, Stereotactic Body Radiation Therapy (SBRT) has increasingly been adopted in the non-invasive management of refractory VT, with the so-called Stereotactic Ventricular Arrhythmia Radioablation (STAR)



Case 1

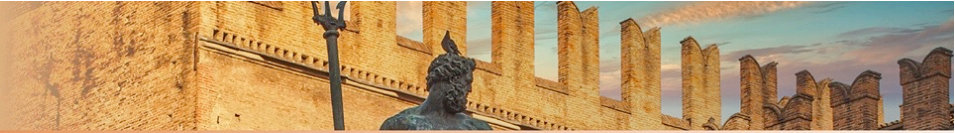
- ✓ 87-years-old man
- ✓ History of VT secondary to myocardical infarction in 1980
- ✓ Hospitalised for rVT requiring ICD interventions, unresponsive to antiarrhythmic drugs
- ✓ Not eligible for catheter ablation surgery due to very high procedural risk (PAINESD score 27, which corresponds to a very high risk of haemodynamic decompensation during the procedure, with a correspondingly high risk of intra-procedural mortality)
- ✓ After multidisciplinary evaluation, considered eligible for STAR*



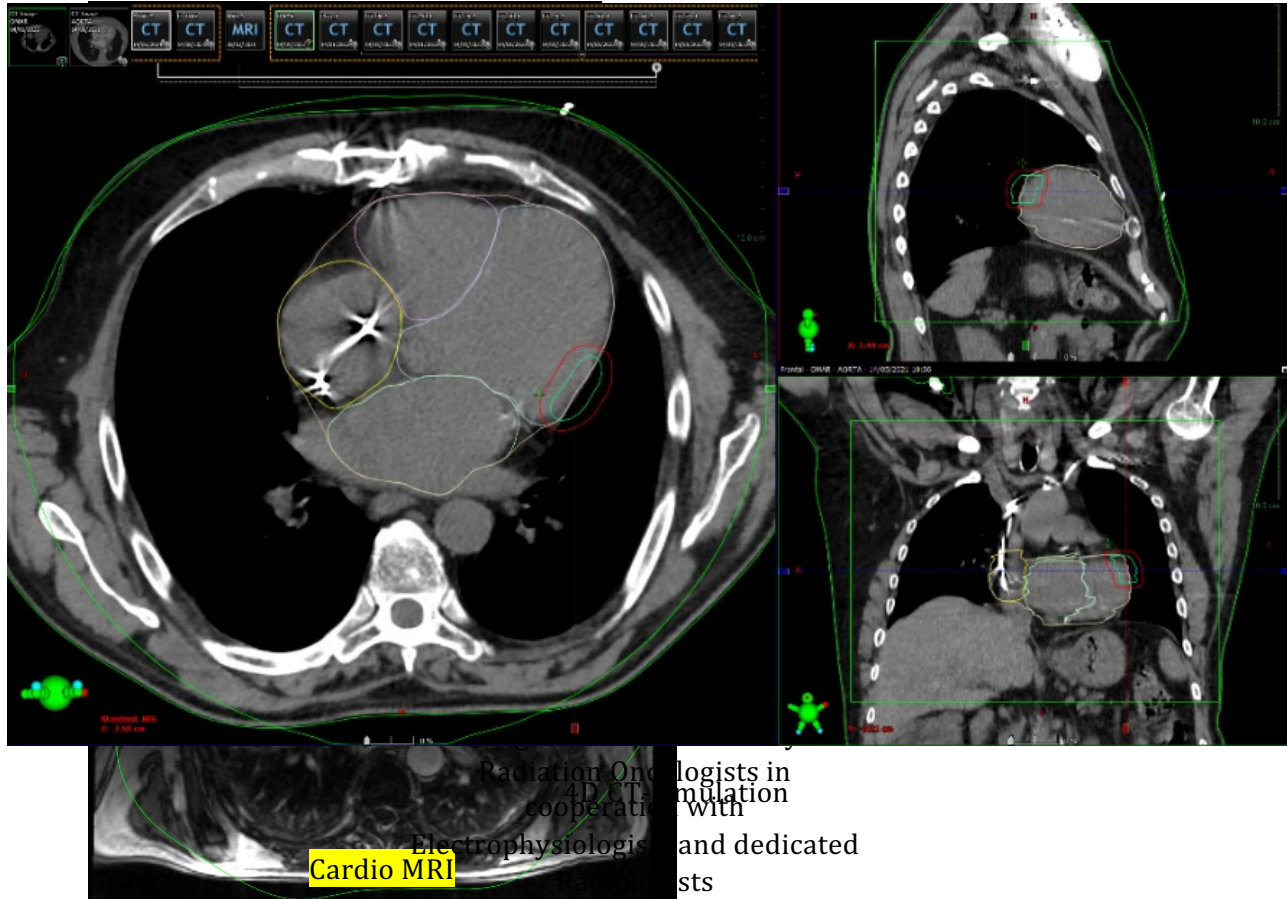
Case 2

- ✓ 60-years-old man
- ✓ History of rVT secondary to ischemic cardiomyopathy
- ✓ Presenting to the emergency department in VT storm requiring multiple ICD shocks and not responsive to maximal antiarrhythmic therapy
- ✓ Not a candidate for catheter ablation surgery nor epicardial due to the inability to access, nor cardiac surgery hybrid, defined as high risk, in relation to the site
- ✓ After multidisciplinary evaluation, considered eligible for STAR*

** local IRB involved for STAR compassionate use*

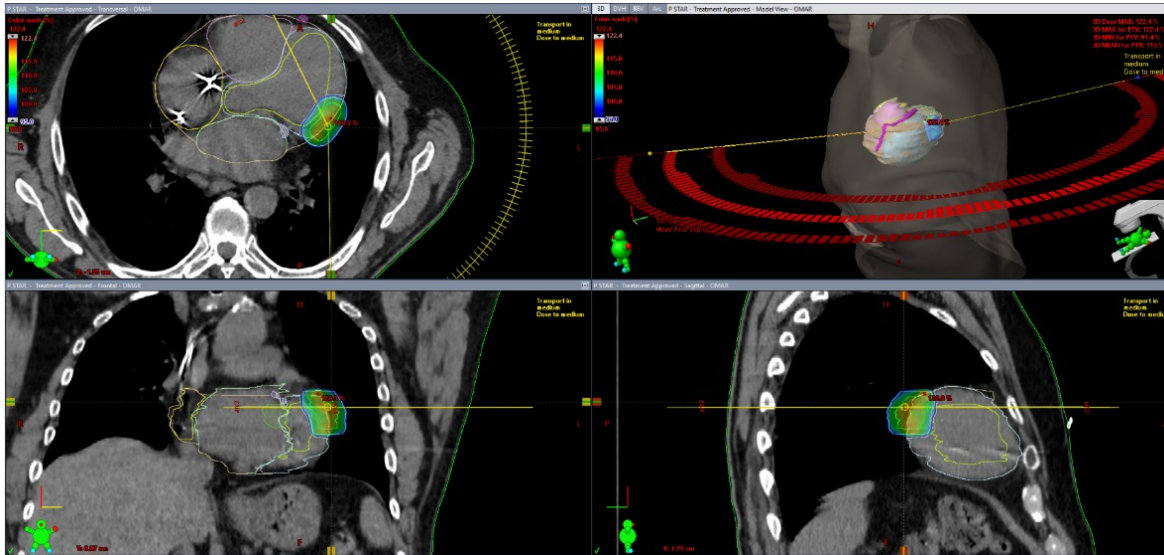


TREATMENT PLANNING

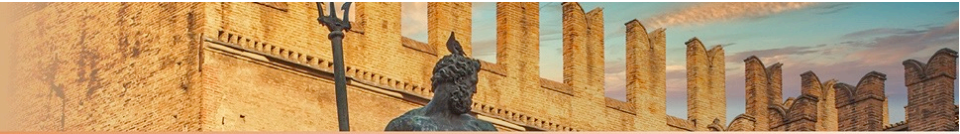




STEREOTACTIC VENTRICULAR ARRHYTHMIA RADIOABLATION (STAR)



- ✓ Prescribed dose 25 Gy in single fraction, Dmax of 32 Gy to the arrhythmogenic substrate
- ✓ STAR was delivered using 3 co-planar arcs configuration Volumetric Modulated Arc Therapy (VMAT). A photon energy of 6MV, flattening filter free (FFF) technique, and a dose rate of 1400 MU/min were used for both treatments
- ✓ Cone Beam CT (CBCT) was performed before each arc delivery, and a respiratory-gated approach was used to monitor patients during fraction
- ✓ Treatment time 19:05; 16:46



RESULTS



- ✓ Patient discharged after 1 week
- ✓ First patient is still alive (FU time 12 months), no rVT were recorded during in hospital clinical evaluation and home monitoring ICD interrogation
- ✓ No acute or late toxicities related to STAR were reported



- ✓ Patient discharged after 3 weeks
- ✓ The patient died for secondary causes (6 months after STAR)
- ✓ No acute or late toxicities related to STAR were reported



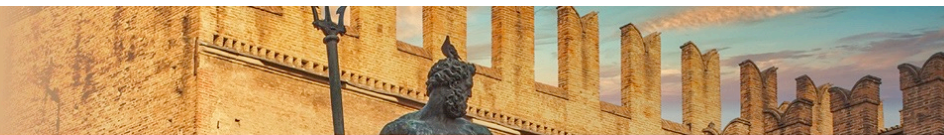
CONCLUSIONS

- ✓ Our experience confirms the efficacy and safety of STAR as a reasonable treatment option for patients with rVT not suitable for CA
- ✓ Further investigations and longer follow up are needed to draw definitive conclusions

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GRAZIE PER L'ATTENZIONE

