Step 4 of 4: Abstract Preview

## Print / Close window

## Abstract Preview

### ESC Congress 2023

Miss Sara Latrofa (EUD ID : 1275688)

- Pisa Italy
Email : latrofa.sara@gmail.com

Title : Assessment of repolarization dispersion by using endocardial unipolar electrograms in patients with brugada syndrome and spontaneous coved-type electrocardiographic pattern

Topic : 9.1.3 - Ion Channel Disorders

Category : Bedside

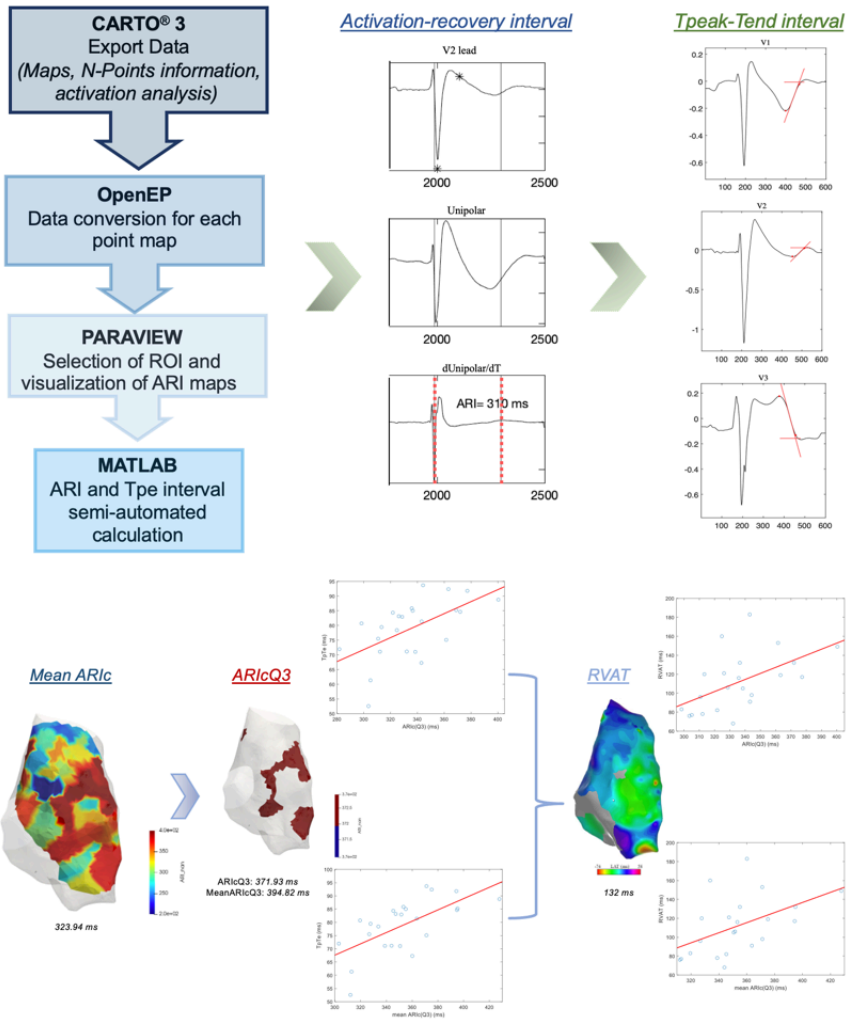
Option : Young Investigator Award (YIA) Clinical Cardiology

Funding Acknowledgements : - Type of funding sources: None - - I agree that this information can be anonymised and then used for statistical purposes only

S. Latrofa[1], S. Garibaldi[2], V. Hartwig[3], L. Panchetti[2], M S. Morelli[2], A. Barison[2], G. Vergaro[2], M. Nesti[2], G. Mirizzi[2], U. Startari[2], C. Passino[1], M. Emdin[1], M. Piacenti[2], A. Giannoni[1], A. Rossi[2] - (1) Sant'Anna School of Advanced Studies, Pisa, Italy (2) Fondazione Toscana Gabriele Monasterio, Pisa, Italy (3) Institute of Clinical Physiology (IFC), Pisa, Italy

Background. Coved-type electrocardiographic (ECG) pattern of patients with Brugada syndrome (BrS) is secondary to action potential lengthening in the right ventricular outflow tract (RVOT) epicardium. This may be approximated by activation-recovery interval (ARI), a marker of local repolarization dispersion.
Purpose. Our aim was to examine epicardial repolarization dispersion by ARI in the RVOT of BrS patients and its potential correlation with conduction slowing and Tpeak-Tend (Tpe) interval, a marker of altered repolarization on surface ECG already associated with a higher arrhythmic risk in this setting.
Methods. 24 BrS patients with coved-type phenotype underwent an invasive electrophysiological evaluation with endocardial high-density 3D mapping and programmed ventricular stimulation (PVS). Mapping data was exported and converted into MatLab format using OpenEP. Paraview was used to select a region of interest (ROI) specifically comprising of sub-pulmonary RVOT and RV free wall. ARI was calculated for each point of the ROI using a semi-automated algorithm with the Wyatt method and corrected with the Bazett formula (ARIc). The values were then interpolated to create ARI maps. For each patient, we calculated the value of ARIc at 75% of the distribution (ARIcQ3) and mean ARI for the values in the interval above ARIcQ3 (meanARIcQ3); ARIcQ3 points were also used to create maps. Activation maps were used to determine right ventricular activation time (RVAT). Tpe intervals were calculated with the tangent method on V1, V2 and V3 of 20 low-noise sinus beats recorded during the procedure, and then corrected with the Bazzett formula.
Results. Out of 24 BrS subjects, 6 had VT/ VF inducible during PVS (PVS+) while 18 did not (PVS-). Average ARI, ARIc, ARIcQ3 and meanARIcQ3 were respectively: 291.4 ± 22.1 ms; 306.0 ± 27.3 ms; 335.1 ± 28.3 ms; 353.1 ± 30.3 ms. Average Tpe was 75.0 ± 7.3 ms, with a mean corrected Tpe of 79.0 ± 10 ms. Mean RVAT was 111.9 ± 30.7 ms.

Zones with ARIcQ3 were all located into the anterior and subpulmonary RVOT. We found a correlation between ARIcQ3 and mean corrected Tpe (R=0.58, p=0.003), and between meanARIcQ3 and mean corrected Tpe (R=0.65, p<0.001). A good correlation was also found between ARIcQ3 and RVAT (R=0.5441, p=0.0088), and meanARIcQ3 and RVAT (R=0.49, p=0.02). No significant differences were found between PVS+ and PVS- patients.
Conclusions. Our results show the presence of zones with long ARI within RVOT of BrS with type-1 phenotype, indicating marked local repolarization dispersion. Longer ARIs correlate with altered repolarization on surface ECG and with prolongation of local activation time. ARI mapping can help identify repolarization dispersion and should be evaluated in the setting of a multi-parametric risk assessment in BrS with spontaneous coved-type ECG.




## » Rules and Regulations

☑ I hereby certify that this abstract has not been previously published or presented at any international congress and that I have read and approved the Abstract Submission Rules of the Abstract Submission Service and the Web Site Terms Conditions.