

# Comparison of CARTO LAT Maps and Non-Invasive Activation Maps for Patients with Intraventricular Conduction Disturbance During Sinus Rhythm

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**Background:** Activation maps obtained by non-invasive electrophysiological mapping (ECGI) allow to analysis of excitation propagation during sinus rhythm with the conduction disturbances. But the comparison of non-invasive activation pattern with the results of the CARTO LAT maps has not been done yet.

**Aim:** Comparison of CARTO LAT maps and non-invasive activation maps for patients with intraventricular conduction disturbance and assessment the excitation propagation.

**Methods:** Three males (age  $44 \pm 17$  years) with sinus rhythm and conduction disturbances (two patients with right bundle branch block (RBBB) and one with left anterior branch block (LABB)) underwent non-invasive ECGI with CT or MRI using “Amycard 01C EP lab” system (EP Solutions SA, Switzerland) before VT ablation. Carto LAT (Biosense Webster, Inc., US) maps were created before operation and included 120-397 electrograms (EG) for RV endocardial surface, 530-962 EG for LV endocardial surface. Non-invasive activation maps were obtained using Tikhonov based isopotential maps using the activation direction method (ADM) and compared with CARTO LAT maps.

**Results** The early activation zona (EAZ) for the first patient with RBBB obtained on ADM map was localized in the RVOT anterior-septal wall, inferior-middle RV wall, inferior-basal LV wall. For the second patient with LABB the EAZ was localized on the RV anterior-middle wall, RV apex and LV apex. For the third patient with RBBB EAZ was located on the RV apex. CARTO LAT showed EAZ for the first patient in RV anterior-septal and LV septal walls. For the second patient the EAZ was located in RV septal wall. For the third patient EAZ was located in RV apex.

**Conclusions:** Comparison of activation patterns of CARTO LAT maps and non-invasive activation maps for patients with intraventricular conduction disturbance during sinus rhythm allow to estimate the excitation propagation pattern and learn it better.