

Universitäres Herz- und Gefäßzentrum Hamburg





HAMBURG

Moritz Nies, MD<sup>1,4</sup>, Ruben Schleberger, MD<sup>1</sup>, Leon Dinshaw, MD<sup>1</sup>, Andreas Rillig, MD<sup>1</sup>, Andreas Metzner, MD<sup>1</sup> and Christian Meyer, MD<sup>1,2,3,4</sup>

# Parallel mapping and catheter ablation of polymorphic premature ventricular contractions: A new feature for activation mapping

#### Introduction

During conventional activation mapping of PVCs with a three-dimensional electroanatomical mapping system, only PVCs matching the active map's pattern are registered. Other morphologies have to be addressed sequentially, challenging effective treatment of polymorphic PVCs with low intraprocedural prevalence. A novel algorithm (CARTO III Software Version 7, Biosense Webster) facilitates simultaneous mapping of different morphologies, offering enhanced mapping opportunities for rare, polymorphic PVCs.

## **Case Presentation**

- 80 years-old patient presenting with palpitations and dyspnea
- History of multiple catheter ablations for symptomatic PVC (02/2018, 01/2019)
- 24h-Holter-ECG: polymorphic PVCs with a burden of 52%
- → Acutely successful ablation of different PVCmorphologies with a low intraprocedural



incidence using parallel activation mapping

→ Lasting suppression to a burden of <1% in 24h-Holter-ECG in a three-months-follow-up

#### Addressed morphologies



PVC 1	PVC 2	PVC 3	PVC 4
106 beats	39 beats	40 beats	17 beats
1.55 per minute	0.57 per minute	0.58 per minute	0.24 per minute



### Conclusion

Parallel mapping of polymorphic PVCs facilitates simultaneous activation mapping of different morphologies for patients with low intraprocedural PVC-burden, in which the construction of activation maps is challenging and time consuming with sequential mapping approaches.

#### **Affiliations:**

1: Department of Cardiology, University Heart and Vascular Center, University Medical Center Hamburg-Eppendorf, Martinistraße 52, 20246 Hamburg, Germany

2: Division of Cardiology, EVK Düsseldorf, cNEP, cardiac Neuro- and Electrophysiology Research Consortium, Kirchfeldstraße 40, 40217 Düsseldorf, Germany

3: cNEP, cardiac Neuro- and Electrophysiology Research Consortium, Institute for Neural and Sensory Physiology, Heinrich Heine University Düsseldorf, Medical

Faculty, Düsseldorf, Germany.

4: DZHK (German Center for Cardiovascular Research), Partner Site Hamburg/Lübeck/Kiel, Berlin, Germany

**Conflict of interest**: None to declare