C - reactive protein is a promising indicator of ventricular arrhythmias in pacemaker patients

Peter Jirak1, Bernhard, Wernly1, Lynne Hinterbuchner1, Vera Paar1, Laurenz Hauptmann1, Dzeneta Fejzic1, Albert Topf1, Uta C Hoppe1, Michael Lichtenauer1, Kilian Höfer2, Christiana Schernthaner1, Lukas Jaroslaw Motloch1

1 Clinic of Internal Medicine II, Department of Cardiology, Paracelsus Medical University of Salzburg, Austria
2 University Clinic of Anaesthesiology, Perioperative Medicine and General Intensive Care, Paracelsus Medical University of Salzburg, Austria

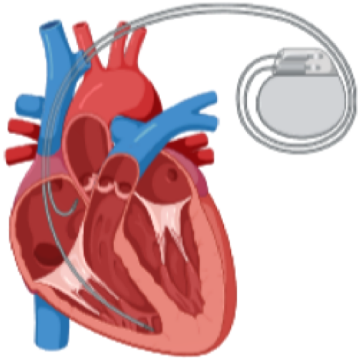
Background: Ventricular tachyarrhythmias are the main reason for sudden cardiac death to date. Accordingly, tools for risk stratification for ventricular arrhythmias are paramount. Non-sustained ventricular tachycardia (nsVT) represents a predictor of malignant rhythm disorders. Recently, low grade chronic inflammation was shown to predict ventricular arrhythmic events in high risk patients. This study aims to investigate, if inflammatory markers may predict higher arrhythmia burden in a low risk population.

Methods: We prospectively analyzed ventricular arrhythmia burden in pacemaker records of 166 patients (age 79.2 9.3; male 60.2%, 38 with coronary artery disease (CAD)) with preserved ejection fraction (left ventricular ejection fraction≥50%) during a annually pacemaker follow up in a single center. To evaluate potential predictive factors, associations of laboratory values including inflammatory markers (CRP and interleukin 6) with occurrence of nsVT was evaluated using logistic regression. Sensitivity analysis in patients with and without established CAD was performed.

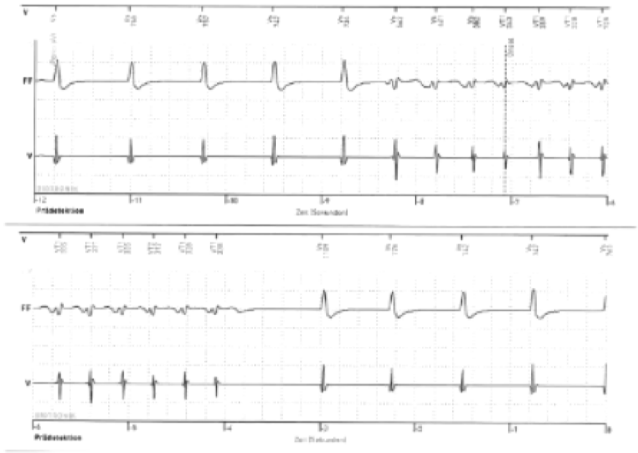
Results: The cumulative incidence of nsVT was 12.7%. Concentrations of BNP (OR 1.00 95%CI 0.99-1.01; p=0.46), troponin (OR 0.98 95%CI 0.95-1.02; p=0.43) or interleukin-6 (OR 1.03 95%CI 0.99-1.07; p=0.16) were not associated with the occurrence of nsVTs. However, the concentration of CRP was associated with increased odds of nsVT (OR 1.26 95%CI 0.97-1.64; p=0.09) in trend. In sensitivity analysis in CAD patients, CRP was associated with increased likelihood of nsVT (OR 3.89 95%CI 1.14-13.29; p=0.03), whereas in patients without CAD there was no association between CRP and rates of nsVTs (OR 1.16 95%CI 0.88-1.54; p=0.30).

Conclusion: Our study shows that inflammatory markers like CRP may be promising predictors of rhythm disorders CAD patients. While CRP was associated with increased odds for nsVTs in pacemaker patients with CAD, IL-6 did not show a significant correlation. This might be based on a more volatile expression of IL-6 while CRP represents a more stable parameter for inflammation.

166 pacemaker patients with EF>50%
CAD in 38 patients



12,7% of patients displayed nsVTs



	CAD	vs.	non-CAD
pBNP	p=ns		p=ns
Troponin	p=ns		p=ns
Interleukin 6	p=ns		p=ns
CRP	**p=0,03**		p=0,30

Correlation of CRP and nsVTs in patients with CAD

Contact: Dr. Peter Jirak - p.jirak@salk.at - University Hospital Salzburg - Paracelsus Medical University Salzburg - Department of Internal Medicine II

Conflict of interest: The authors declare that they have no conflict of interest concerning this project

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