

RADIOFREQUENCY CATHETER ABLATION OF FREQUENT PREMATURE VENTRICULAR COMPLEXES INFLUENCES LEFT VENTRICULAR FUNCTION

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Frequent premature ventricular complexes (PVC) are related to reversible tachycardia-induced cardiomyopathy. However, the role of arrhythmia burden on the outcome of the catheter ablation has not been fully recognized. The aim of this study was to assess the effect of catheter ablation and PVC burden in patients with and without structural heart disease (SHD) on left ventricular ejection fraction (LVEF).

Methods: Transthoracic echocardiography was done before and six months after radiofrequency catheter ablation in 109 consecutive patients (61 men, age 55 ± 17 years) with frequent PVCs. Sixty-five (59.6%) patients had underlying SHD.

Results: The catheter ablation procedure was successful in 93 (85.3%) patients. Baseline PVC burden was higher in patients with SHD ($22,267 \pm 12,934$) compared to those without concomitant SHD ($15,546 \pm 7888$), $p = 0.005$. Nevertheless, patients with $LVEF \leq 50\%$ at baseline presented greater LVEF recovery (from 44% to 56%) than those with $LVEF > 50\%$ at baseline after catheter ablation. In both groups, the LVEF improved ($p < 0.001$); however, no difference was observed between patients with SHD ($5.7\% \pm 1.37\%$) and without ($4.6\% \pm 0.96\%$) SHD; $p = 0.89$. PVC burden was higher in patients with ($24,350 \pm 2776$ PVC/day) compared to those without ($17,588 \pm 1970$ PVC/day) improvement of LVEF. In multivariate regression analysis PVC burden $> 20,000$ /day (but not age, $p = 0.95$; gender, $p = 0.89$; presence of SHD, $p = 0.53$; QRS complex width of the treated PVC, $p = 0.21$, LVEF before ablation, $p = 0.19$; and site of origin, $p = 0.47$) predicted improvement in LVEF after successful catheter ablation (odds ratio: 3.53; 95% confidence interval: 1.15–10.75; $p = 0.023$).

Conclusions: Catheter ablation of frequent PVCs improves left ventricular function and in multivariate analysis predicted improvement of LVEF within six months after the successful catheter ablation procedure in patients with PVC burden exceeding 20,000/24 h.

BIOGRAPHY

Agnieszka Wojdyla-Hordynska has completed her Medical Doctor from Silesian University (Poland), she has reached an MBA degree in Health Care Management in 2012 in University Opole, Poland, successfully finished her cardiology and interventional electrophysiology training in 2013, started her PhD studies in Silesian University in 2017. She is an assistant doctor in the Clinical Cardiology Department and Electrophysiology Laboratory of University Hospital Opole in Poland. In the years 2010-2011 she has been awarded by EHRA, a clinical electrophysiology fellowship in HZL, Leipzig, Germany. She proceeds her research in ventricular arrhythmias and means of ablation, as well as devices and heart failure management. She is a skilled operator, interventional electrophysiologist and device implanting doctor.

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