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**Prognostic role of right ventricular global longitudinal strain in dilated cardiomyopathy**

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INTRODUCTION The prognostic stratification in dilated cardiomyopathy (DCM) remains a demanding issue in clinical practice. In addition to left ventricular (LV) function evaluation, the presence of fibrosis and right ventricular (RV) dysfunction are considered among the most promising prognostic tools in DCM. In this field, cardiac magnetic resonance (CMR) has emerged as the gold standard technique for both ventricle dysfunction and tissue characterization (i.e. late gadolinium enhancement (LGE) distribution) assessment. Recently, speckle tracking echocardiography (STE) has emerged as a method to study the intrinsic performance of the myocardial wall, making it possible to identify subtle RV dysfunction in DCM patients. Other recent studies successfully demonstrated that LV feature tracking analysis (FTA) is able to give additional prognostic power when combined with the above-mentioned classical parameters.

PURPOSE Evaluation of left ventricular strain at FTA has shown an incremental prognostic value compared to classical parameters, but nothing is known about the possible prognostic role of Right Ventricular (RV) strain. The aim of the study was to evaluate the prognostic impact of FTA focusing on Right Ventricular Global Longitudinal Strain (RV-GLS) in a large population of DCM.

METHODS 183 DCM patients were examined with a comprehensive morpho-functional CMR study including FTA. The study endpoint was defined as a composite of (i) cardiovascular death, (ii) cardiac transplant (iii) implantable cardiac defibrillator appropriate intervention.

RESULTS During a median follow-up period of 23 months, 20 patients (11%) experienced the study endpoint. At the univariate analysis, LGE and RV-GLS were the most powerful predictors of events and they remained independent even at multivariate level (LGE Hazard Ratio [HR]: 4.86; p=0.006; RV-GLS HR: 1.17 per %; p=0.001). By Receiver Operating Characteristics (ROC) analysis, -19% emerged as the most accurate RV-GLS cut-off able to identify the risk of presenting the end-point. By Kaplan-Meier analysis, patients with a RV-GLS value >-19% showed a reduced survival (log-rank p<0.0001) even if the right ventricle ejection fraction (RVEF) was preserved (log-rank p=0.016). RV-GLS >-19% and LGE presence equally impacted on the end-point development and their compresence showed an additive effect (see Picture).

CONCLUSIONS RV-GLS is an independent short-term predictor of major cardiovascular events in DCM and showed an incremental value, better than parameters such as LV and RV ejection fraction.
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