



Place of RV Strain in the Echocardiographic Assessment of Patients with ST-Segment Elevation Myocardial Infarction (STEMI)

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ABSTRACT

Right Ventricular (RV) strain plays a crucial role in the echocardiographic assessment of ST-segment elevation myocardial infarction (STEMI). This observational study examined the association between RV strain and clinical characteristics in 52 STEMI patients. The results revealed a high prevalence of altered RV strain, regardless of the STEMI territory. RV strain showed significant correlations with Killip functional class and left ventricular filling pressures. Integration of RV strain in the echocardiographic evaluation improves risk stratification and provides valuable prognostic information for STEMI patients.

Keywords: Segment elevation; Myocardial infarction; Right ventricular strain; Echocardiographic assessment; Risk Stratification; Clinical management

INTRODUCTION

The assessment of right ventricular (RV) function in ST-segment elevation myocardial infarction (STEMI) plays a crucial role in comprehensive cardiac evaluation [1,2]. While the left ventricle (LV) traditionally receives more attention, recent studies have highlighted the importance of RV assessment in STEMI [1-3]. This article explores the place of RV strain in the echocardiographic assessment of STEMI and its significance in clinical practice.

DESCRIPTION

An observational study involving 52 patients hospitalized for STEMI was conducted to investigate the role of RV strain in the echocardiographic assessment. Various parameters including clinical characteristics, infarct territories, Killip class, echocardiographic findings, coronary angiography results, and correlations with RV strain were analyzed. The study findings demonstrated a high prevalence of altered RV strain in STEMI patients, irrespective of the STEMI territory.

Among the patients, 81% were male with a mean age of 59 ± 12 years. The most common cardiovascular risk factors ob-

served were hypertension (HTA), diabetes, and tobacco use. STEMI territories included anterior (50%), inferior (17%), extended posterior (17%), and deep septal (16%). The majority of patients were classified as Killip 1 (92%), while 8% were classified as Killip 2. Notably, RV strain was altered in 96% of cases, indicating impaired RV function. Correlations were observed between RV strain and clinical parameters such as Killip class and left ventricular filling pressures. The study also revealed significant associations between RV strain and infarct territory, with lower strain values seen in cases of inferior STEMI (100%), anterior STEMI (77%), deep septal STEMI (75%), and extended posterior STEMI (56%).

Incorporating RV strain into the echocardiographic assessment of STEMI patients offers valuable insights into RV function and contributes to a more comprehensive evaluation of cardiac performance [1-4]. Altered RV strain has been associated with adverse clinical outcomes, indicating its potential prognostic value [4,5]. Furthermore, RV strain correlates with LV function parameters, providing a comprehensive picture of overall cardiac function [5]. Our study objectively demonstrated that all symptomatic patients with elevated filling pressures had altered RV strain. Monitoring changes in RV strain over time may

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assist in assessing response to therapy and guiding long-term management strategies [6].

CONCLUSION

RV strain holds a significant place in the echocardiographic assessment of STEMI patients. Its inclusion enhances the evaluation of RV function, improves risk stratification, and provides valuable prognostic information. Incorporating RV strain analysis into routine echocardiographic assessments can refine the management and outcomes of STEMI patients. Further studies are warranted to establish standardized protocols and guidelines for the utilization of RV strain in the clinical setting.

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CONFLICT OF INTEREST

There is no conflict of interest.

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