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Prognostic Implication of Strain Analysis in Patients with ST-Segment Elevation Myocardial Infarction: One More Evidence for Ever-Debatable Topic

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"What is essential is invisible to the eye" - the Little Prince -

Despite recent advances in management, patients with acute ST-segment elevation myocardial infarction (STEMI) are still at increased risk for adverse outcomes, even after a timely revascularization.[1)2)] Therefore, early risk stratification for such patients is of clinical importance. STEMI involves remodeling of the left ventricle (LV); and diseased LV is associated with future adverse outcomes.

In this issue of the Journal, Na et al.,[3)] in their research using 2-dimensional strain technique, demonstrated that global longitudinal strain (GLS) can predict adverse remodeling in patients with STEMI; GLS value, along with left ventricular end-diastolic volume, deceleration time of mitral inflow, and CK-MB level, independently predicted adverse remodeling of the LV, whereas global circumferential strain, net twist, and twist/untwist rate did not. Many studies have reported on the prognostic power of GLS.[4-6)] A strongpoint of this study is the relatively large (n = 208) and homogenous study sample (acute STEMI patients who were treated with a timely successful reperfusion therapy and underwent echocardiographic evaluation for strain analysis within 24 hrs after treatment). In addition, the authors' hypothetical explanation for the data (i.e., GLC, but not global circumferential strain, is a predictor for LV remodeling) in the discussion section of the article seems reasonable. However, this study should not be regarded as the final answer to the many questions and there is skepticism regarding the eye-catching echocardiographic technique.

In routine clinical practice, we still resort to mainly visual assessment of myocardial wall motion based on two-dimensional echocardiography when assessing LV performance. Strain analysis is "supposed" to be objective, however there are many obstacles to its wide application in clinical practice, including the issue of reproducibility, time-consuming off-line analysis, good quality echo-images, which are not always easy to obtain, as well as issues regarding vendor-specific differences: reproducibility issues.[6)] Despite these limitations, there are copious research data supporting the unique strongpoints of strain analysis, and the current research by Na et al.[3)] sheds light on strain analysis for early prediction of adverse LV remodeling in STEMI patients and would at least provide a robust background for further investigation to determine the clinical usefulness of the ever-developing echocardiographic technique.

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