Abstract No.  **31**
Category:     **Heart Failure and Cardiomyopathies**
Title:        **Artificial Intelligence in Medicine. Studying Takotsubo Syndrome with Myovista Device, First Cases Described in the World.**
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**Abstract:**

Background: Takotsubo syndrome may significantly impair myocardial function, simulating an acute coronary event.

The MyoVista is a high-sensitivity electrocardiograph (hsECG) which produces a conventional ECG report and also analyzes the energy of the ventricles through the indexes: VIEM (Ventricular Index Early Measure), VILM (Ventricular Index Late Measure) and VIAM (Ventricular Index Average Measure). It can detect structural, electrical or ischemic anomalies. Its function is based on continuous wavelet transform (CWT).

Methods: A hsECG was performed in four patients who fulfilled diagnostic criteria for Takotsubo. Apical ballooning was seen on bidimensional echocardiography and ventriculography. Coronary angiogram was done to rule out coronary artery disease. Results were analyzed to correlate abnormalities of ventricle energy with the cardiomyopathy.

Results: All patients were Hispanic women. 3 cases had an emotional or physical trigger and 1 had no any trigger. 2 of the patients smoked and 2 did not. None of the patients were obese. 2 patients had dyslipidemia, 1 hypertension and 1 a history of transient ischemic attack. None of them had diabetes. All patients had a New York Heart Association class of I/IV. Systolic, diastolic and mean arterial pressure were: $112 \pm 14.47$; $67 \pm 10.66$ and $82 \pm 11.88$ mm hg respectively. Creatinine average was $0.76 \pm 0.05$ mg/dL and troponin $539.83 \pm 404.66$ pg/mL. All patients had a prolonged QT interval (QT $465 \pm 22.91$ mseg and QTc $516 \pm 19.21$ mseg). 1 patient had LBBB, 1 a normal ST segment, 2 an inverted ST segment and 1 an elevated ST segment. All patients had an inverted T wave and generalized repolarization abnormalities. Left ventricle ejection fraction average was $39.5\% \pm 6.18\%$. hsECG energy category was high (normal) in 3 patients and moderate (abnormal) in 1 patient.

Conclusions: MyoVista assess ventricular diastolic dysfunction and allow patients to be better classified and selected when determining the need for more costly and invasive studies. Myovista may be used in Takotsubo to indirectly rule out coronary artery disease and to assess structural anomalies of the myocardium.
Artificial intelligence is rapidly evolving and changing older paradigms in medicine.