



Egyptian Society of Cardiology
The Egyptian Heart Journal

www.elsevier.com/locate/ehj
www.sciencedirect.com



ORIGINAL ARTICLE

Assessment of mitral annular velocities by Doppler tissue imaging in predicting left ventricular thrombus formation after first anterior acute myocardial infarction

Ahmed Fathy *, Ghada Ibrahim, Ahmed Shaker

Cardiology Department, Faculty of Medicine, Zagazig University, Egypt

Received 20 March 2011; accepted 27 April 2011

Available online 14 October 2011

KEYWORDS

Acute myocardial infarction;
LV thrombus;
Tissue Doppler

Abstract *Introduction:* This study was carried out in cardiology department, Zagazig University from August 2005 to December 2006. This study included 60 patients with first acute anterior myocardial infarction. These patients were 36 male (72%) and 14 female (28%).

Aim of the work: The aim of this study is to determine whether early assessment of mitral annular velocities by pulsed wave tissue Doppler imaging predicts left ventricular thrombus formation after first acute anterior myocardial infarction or not.

Patients and methods: Patients included in our study represented by first time anterior wall acute myocardial infarction who met the following criteria; chest pain lasting more than 30 min, ST segment elevation greater than 2 mm in two consecutive anterior electrographic leads and transient elevation of biochemical cardiac markers. Patients were excluded if they had evidence of previous anterior myocardial infarction, valvular heart disease, patients with poor Echo window and conduction abnormalities. All patients were subjected to the following: complete history taking, thorough physical examination, laboratory tests, 12-lead surface ECG, determination if the patient was received thrombolytic therapy or not and echocardiographic evaluation (M-mode, two-dimensional and DTI assessment) was performed for all patients within 24 h of arrival to CCU to evaluate LV function and to measure mitral annular velocities then two-dimensional echocardiography to

* Corresponding author.

E-mail address: aabuelenin@yahoo.com (A. Fathy).



determine thrombus was formed on days 7 and 30. Patients were divided into two groups: group (1); patients with LV thrombus (19 patients “31.6%”) and group (2); patients without LV thrombus (41 patients “68.4%”).

Results: There was no significant difference between the two groups as regards age, gender, diabetes mellitus, hypertension, heart rate, peak CPK and whether patients received thrombolytic therapy or not. LVESV and LVEDV were higher in group (1) than in group (2) while EF was lower in group (1) than in group (2). As regards WMSI is higher in group (1) than in group (2). E wave velocity was higher in group (1) than in group (2), while A wave velocity was lower in group (1) than in group (2) and E/A ratio is higher in group (1) than in group (2). Deceleration time of E wave was shorter in group (1) than in group (2) and IVRT were lower in group (1) than in group (2). Em wave velocity was lower in group (1) than in group (2), Am wave velocity had no significant difference between the two groups while Em/Am ratio was lower in group (1) than in group (2) and E/Em ratio was higher in group (1) than in group (2). Sm wave velocity was lower in group (1) than in group (2). From previous data and correlation of TDE finding with other echocardiographic data, we found that systolic and diastolic functions were impaired in patients of group (1) than in group (2) but Sm velocity and WMSI had higher sensitivity and higher specificity (94.7% sensitivity, 95.1% specificity for Sm wave velocity and 94.2% sensitivity, 90.2% specificity for WMSI).

Conclusion: From our study, we can conclude that TDE can be used for estimation of systolic and diastolic functions of LV and hence identification of patients at high risk for LV thrombus formation after first time acute anterior myocardial infarction and we recommend more studies to support our results about the importance of the role of oral anticoagulant after AMI.

© 2011 Egyptian Society of Cardiology. Production and hosting by Elsevier B.V. All rights reserved.

1. Introduction

Acute myocardial infarction (AMI) is associated with high incidence of left ventricular (LV) mural thrombus, which is responsible for significant morbidity and mortality in patients with coronary heart disease. Higher mortality has been reported in patients with LV thrombus after AMI. Also, the LV thrombus may have embolic potential. LV thrombus incidence is influenced by the location and magnitude of infarction, so that it occurs commonly in those with large anterior ST segment elevation myocardial infarction (STEMI).¹ Mitral annular velocities determined by TDE are used in evaluating systolic and diastolic LV functions.² Clinical, epidemiological and echocardiographic risk factors related to the development of LV thrombus with AMI have been studied.^{3,4} Yet, the value of TDE in prediction of LV thrombus after AMI needs more studies.

2. Aim of the work

The aim of this study to determine whether early assessment of the left ventricular systolic and diastolic functions by pulsed wave Doppler tissue (PTD) imaging can predict the occurrence of left ventricular thrombus formation after first acute anterior myocardial infarction or not.

3. Patients and methods

This study included 60 patients represented to CCU with AMI.

3.1. Inclusion criteria

The patients included in this study if they have: first time acute anterior wall myocardial infarction (defined as chest pain last-

ing more than 30 min, ST segment elevation >2 mm in two consecutive anterior electrographic leads and transient elevation of biochemical cardiac markers).

3.2. Patients excluded from the study

If they have an evidence of previous anterior myocardial infarction, valvular heart disease, conduction abnormalities or having poor Echo window.

All patients were treated medically and followed for 1 month.

All patients subjected to:

- (1) Complete history taking and thorough clinical examination.
- (2) Twelve leads surface ECG: for manifestations of acute myocardial infarction.
- (3) Chest X-ray.
- (4) Laboratory investigation; for lipids, diabetes, troponin and cardiac enzymes follow up curves.
- (5) Transthoracic echocardiographic evaluation (TTE): echocardiography was done to all patients within 24 h of arrival to CCU, on days 7 and 30 from the myocardial infarction. Using the commercially available equipment (hp SONOS 5500) machine equipped with (2.5 MHz) multi-frequency transducer. M-mode, two-dimensional and Doppler echocardiographic assessments were performed for all patients, examination was done with the patient in left semi-lateral position; utilizing left parasternal long axis, short axis, apicals 4, 5 and 2 chamber views according to the recommendation of the American Society of Echocardiography.

All the measurements are taken with special stress on:

Download English Version:

<https://daneshyari.com/en/article/2910783>

Download Persian Version:

<https://daneshyari.com/article/2910783>

[Daneshyari.com](https://daneshyari.com)