Echocardiographic features in acute myocardial infarction of nonagenarian patients: prognostic implications.

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Background: Echocardiographic characteristics and their implication in the outcome of elderly patients hospitalised with acute myocardial infarction are largely unknown.

Methods: We studied 92 consecutive patients 89 years of age or older admitted from January 1998 to December 2002 to our institution with an acute myocardial infarction with ST-segment elevation and/or left bundle branch block on their first 12 lead ECG. 74 (80.4%) had an echocardiographic study and were the population of interest, although 5 echocardiographies were performed in an acute situation to confirm heart rupture and only provided data concerning pericardial effusion.

Results: Age ranged from 89 to 97, mean 91.3±2.2 years. There were 60 women (65.2%).

Echocardiographic features:
1) Left ventricle. Ejection fraction: Normal: 13 patients (18.8%), 0.41-0.5 14 patients (20.3%), 0.31-0.4 9 patients (13.0%), <0.31 53 patients (47.8%). Dilatation 17 patients (22.8%), systolic dysfunction 2 (6.2%).
2) Moderate/severe valvular disease: Mitral regurgitation 24 (35.3%), Aortic stenosis 7 (10.5%).
3) Severe pericardial effusion: 6 (8.1%), all of them died during hospital admission.
In-Hospital mortality was higher among patients with left ventricle ejection fraction <0.31 36.4% vs 5.6% in pts with left ventricle ejection fraction >0.3, p=0.007 and among patients with severe pericardial effusion: 100% vs 15% in patients with/might be or less pericardial effusion, p<0.001. We also found a trend towards a higher mortality in patients with moderate/severe aortic stenosis 28.6% vs. 16.6% in patients with no significant aortic stenosis, p=0.4.

Conclusions: Patients aged 89 years or older with an AMI present frequently with severely depressed LV EF, severe pericardial effusion, and significant stenosis. Each of these echocardiographic parameters could increase in-hospital mortality.

TEI-Pulsed tissue Doppler imaging index in the detection of viability in akinetic left ventricular segments.

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Background: The aim of our study was to use this TEI-TDI index comparatively with other TDI parameters in the detection of viability of patients after acute myocardial infarction with ST-segment elevation and/or left bundle branch block on their first cardiac catheterization. Each of these echocardiographic parameters could increase in-hospital mortality.

Methods: We studied 30 patients (pts), with a previous myocardial infarction who underwent a transthoracic echocardiographic study documenting at least one akinetic segment of left ventricle (LV).

Results: TEI=ICT+IVRT/ET, where ET=ejection time.

Conclusions: In this study, we aimed at finding out the left atrial function in acute myocardial infarction after thrombolysis (T) and angioplasty (A).

Methods: We performed 2-D echocardiography and pulsed Doppler echocardiography in 48 consecutive patients at sixth month after acute myocardial infarction. AMI patients without thrombolysis or primary angioplasty were accepted as control group (C). LA contribution was assessed by atrial ejection force (AEF). AEF was calculated from maximal late diastolic velocity and mitral orifice area. Left atrial contractility was evaluated by: 1) E/A ratio in the pulsed-wave Doppler transmitral flow (TMF), and 2) the color m-mode Doppler velocity of flow propagation (VFP) (cm/sec). The restrictive TMF pattern (E/A >2) indicates severe diastolic abnormality. Data were expressed as "mean ± standard deviation", statistical analysis was performed by the student's t-test and p<0.05 was considered statistically significant.

Results: We detected 44 P (18.4%) in group I, 133 P (55.8%) in group II and 61 P (25.63%) in group III. 6/44 P (13.63%) and 18/133 P (24.81%) and 6/61 P (9.84%) respectively showed the restrictive TMF pattern. Significant differences appeared between groups I and group III only regarding the restrictive pattern. It was found: E/A (TMF) 2.39±0.43 versus 2.95±0.68 (p<0.05) and VFP 36.9±1.08 cm/sec versus 31.5±6.8 (p<0.05).

Conclusions: More than half of the patients with heart failure due to coronary artery disease have a history of one or two risk factors for heart failure development. It seems that the presence of at least three risk factors predisposes to advanced diastolic dysfunction of the restrictive filling pattern. Moreover, only patients with such severe abnormality on echo-Doppler appear to be seriously affected by the number of the above factors regarding indices such as E/A(TMF) and VFP.