S74 Abstracts

S77 The pattern of right ventricular function recovery after acute myocardial infarction, as assessed by serial echocardiographic follow-up. The GISSI-3 Echo Substudy.


Background: The prognostic importance of right ventricular (RV) function in patients (pts) with acute myocardial infarction (AMI) is still controversial. Moreover, the pattern of recovery in RV function determined by a serial echocardiographic follow-up in pts with low risk AMI has not been studied yet.

Aim: To assess the pattern of RV function change and its correlations with left ventricular ejection fraction (LVEF) at baseline and during follow-up in pts with low risk AMI. Furthermore, to determine if changes in RV function are different in pts with low, as opposed to pts with preserved LVEF.

Methods: We studied a group of 592 pts (493 men, 63.6 ± 11.8 years) from the GISSI-3 Echo Substudy, who survived 6 months after AMI, in whom complete and accurate echocardiographic follow-up data were available. Each patient had 4 echo studies performed at 24-48 hours from admission (S1), at discharge (S2), at 6 weeks (S3), and at 6 months (S4), which were analyzed in the Core Laboratory by experts blinded to all clinical data. The following echo parameters were measured at each visit: LVEF, mitral inflow E, A, and E/A ratio, and tricuspid annulus plane systolic excursion (TAPSE), cm, measured by 2D-echocardiography from the apical 4-chamber view. Analysis of variance for repeated measures was used for time changes of echo parameters.

Results: In this low-risk MI population, no differences in TAPSE with respect to the site of infarction were found. Overall, there was a significant increase in TAPSE during follow-up (from 1.79 ± 0.5 at S1 to 1.9 ± 0.5 cm at S4, p < 0.001). Recovery of LVEF was faster at discharge, because late recovery in RV function is greater in patients with lower LVEF at S1.

Conclusion: Assessment of right ventricular function in ARVC/D patients by 2D ECHO measuring TAPSE and RVOT %fs seems a reasonable and easy to apply clinical method in selecting those patients with poorer prognosis.

S79 Assessment of right ventricular function in ARVC/D patients by 2D ECHO.

I.I. Vranic, M. Petrovic, B. Vujisic-Tesic, M. Ostojić, S. Pavlovic. Clinical Centre of Serbia, Institute for cardiovascular diseases, Belgrade, Yugoslavia

Background: Right ventricular function evaluation remains a diagnostic challenge, both for non-invasive and invasive methods. Tricuspid anterior plane systolic excursion (TAPSE) has been shown to correlate with its overall function (in adults) particularly in systole, as assessed by ejection fraction. Due to its complex anatomy RV systolic function can be objectively estimated by radionuclide ventriculography (RNV) which is done in a standard way.

Aim: We wanted to describe the echocardiographic findings in patients with ARVC/D matching RVT % and TAPSE parameter with RV EF measured by RNV.

Methods: 30 patients with ARVC diagnosis (based on the score of clinical signs obtained from an ESC/WHF expert consensus including major and minor criteria) were included in this study. Their age was 22-48 years, gender female (13) and male (17). We compared RV EF with TAPSE and RVOT %fs in % those patients in whom 4 times RV EF with RVOT %fs p < 0.05.

Conclusion: As shown in the table TAPSE correlated well with the progressive lost of RV EF, power, as well as with RVOT %fs pathogenesis of ARVC/D.

Correlation in estimation of RV function

| Total No pts | TAPSE | RVOT %fs | RVEF %
|-------------|-------|----------|----------
| ARVC/D pts  | 12±2  | 22±6     | 40±8     |
| Control subjects | 24±4 | 65±9     | 56±4     |

*p<0.05

S58 Pathognomonic sign of ARVC/D by ECHO?

I.I. Vranic, M. Petrovic, B. Vujisic-Tesic, M. Ostojić, M. Ristic. Clinical Centre of Serbia, Institute for cardiovascular diseases, Belgrade, Yugoslavia

Background: ARVC/D is characterized by fibro-fatty replacement of mostly located in right ventricular (RV) myocardium. This situation is associated or not with ventricular arrhythmias of RV origin carries the risk of sudden death in the young and/or RV dysfunction. Diagnosis of ARVC/D is based on the score of clinical signs obtained from an ESC/WHF expert consensus including major and minor criteria. However no pathognomonic sign of ARVC/D has been reported yet.

Methods: We have studied with 2D ECHO a group of 13 patients (age 25-48, gender M, F 6) fulfilling the WHF criteria for a positive diagnosis of ARVC/D. This series is compared with a control group including 446 patients studied before or after cardiac surgery for various etiologies (Ischemic n=148, Valvular n=88, Congenital n=16, Normal hearts n=150, Other etiology n=44), age 18-80; gender M=234, F=212).

Results: Our results are presented in a table below. A distinct abnormal displacement of the posterior septum has been observed in apical four chamber view in all ARVC/D patients and none in the control group. Also it was possible to notice it in short axis view on the level of mitral valve. This abnormality may be in agreement with localized cell-cell adhesion protein distortion suspected in this condition or localized apoptosis demonstrated in the posterior septal part of crista supraventricularis by Dr Thomas James.

S78 The assessment of LV function and morphology in patients with suspicion of ARVC/D.

P.K. Klimeczek1, M. Pasowicz2, P. Podole2, C. Zorkun2, W. Pawowska3, W. Tracz4, J. John Paul II Hospital, Dept. of Radiology, Krakow, Poland; 2 John Paul II Hospital, Krakow, Poland; 3 John Paul II Hospital, Dept. of Coronary Artery Disease, Krakow, Poland; 4 John Paul II Hospital, Dept. of Cardiac and Vascular Diseases, Krakow, Poland.

Introduction: Arrhythmogenic Right Ventricular Dysplasia (ARVD) is one of the most common primary diseases of right ventricle. MRI examination can show us specific morphologic abnormalities which are used as diagnostic criteria at the early stage of ARVD.

Aim: We evaluated right and left ventricular function and morphology with the use of MRI to detect major and minor symptoms of ARVC/D.

Methods: From January 2001 to March 2003, 24 patients (2 W, 19-55 (38 ± 11.5) years of age were enrolled in this study after 24-hour ECG monitoring and echo-cardiography findings of ARVD. All these patients had RV dilatation, and ventricular arrhythmias (Ventricular Extrastl by 1000/24h – 21 pts, Late potentials - 6 pts, QRS prolongation – 6 pts, T wave inversion – 4 pts, VT history -3 pts); 6 pts had a family history of sudden cardiac death. The MRI was performed using Magnetom Vision Plus 1.5 T and Sonata Maestro Class 1.5 T. MRI protocol consist of: RV assessment; edematous and fatty infiltration detection. LV evaluation: EF, wall motions abnormalities, contractility, wall thickness and thickening, tissue morphology (heavy weighted T2 and late enhancement (LE) study 6 pts) Post processing data and LV and RV functions measurements were performed using Leonardo Workstation (Arcus software).

Results: In MRI examination we found RV dilatation in all 24 pts (mean - 40 ± 6 mm, 35-50), RV EF were decreased in 18 pts (total average = 38 ± 11.1%, 19 – 60%). The fatty infiltrations were found in 4 patients only in RV-free wall, the aneurysms of RV-free wall were found in 12 pts. The RV WMA were detected in 14 pts. Decrease of EF was found in 10 pts (mean 54% ± 12, 32% – 60%), the LV – hypertrophy was detected in 10 pts. WMA was found in 10 patients. In 1 of 6 pts the subendocardial region of LE was detected.

Conclusion: The left ventricular function was decreased in significant number of studied patients.

S76 The assessment of LV function and morphology in patients with suspicion of ARVC/D.

I.I. Vranic, M. Petrovic, B. Vujisic-Tesic, M. Ostojić, M. Ristic. Clinical Centre of Serbia, Institute for cardiovascular diseases, Belgrade, Yugoslavia

Background: Right ventricular function carries the risk of sudden death in the young and/or RV dysfunction. Diagnosis of ARVC/D is based on the score of clinical signs obtained from an ESC/WHF expert consensus including major and minor criteria. However no pathognomonic sign of ARVC/D has been reported yet.

Methods: We have studied with 2D ECHO a group of 13 patients (age 25-48, gender M, F 6) fulfilling the WHF criteria for a positive diagnosis of ARVC/D. This series is compared with a control group including 446 patients studied before or after cardiac surgery for various etiologies (Ischemic n=148, Valvular n=88, Congenital n=16, Normal hearts n=150, Other etiology n=44), age 18-80; gender M=234, F=212).

Results: Our results are presented in a table below. A distinct abnormal displacement of the posterior septum has been observed in apical four chamber view in all ARVC/D patients and none in the control group. Also it was possible to notice it in short axis view on the level of mitral valve. This abnormality may be in agreement with localized cell-cell adhesion protein distortion suspected in this condition or localized apoptosis demonstrated in the posterior septal part of crista supraventricularis by Dr Thomas James.

S75 Regional and global right ventricular function in DECHO.

I.I. Vranic, M. Petrovic, B. Vujisic-Tesic, M. Ostojić, M. Ristic. Clinical Centre of Serbia, Institute for cardiovascular diseases, Belgrade, Yugoslavia

Background: Right ventricular function carries the risk of sudden death in the young and/or RV dysfunction. Diagnosis of ARVC/D is based on the score of clinical signs obtained from an ESC/WHF expert consensus including major and minor criteria. However no pathognomonic sign of ARVC/D has been reported yet.

Methods: We have studied with 2D ECHO a group of 13 patients (age 25-48, gender M, F 6) fulfilling the WHF criteria for a positive diagnosis of ARVC/D. This series is compared with a control group including 446 patients studied before or after cardiac surgery for various etiologies (Ischemic n=148, Valvular n=88, Congenital n=16, Normal hearts n=150, Other etiology n=44), age 18-80; gender M=234, F=212).

Results: Our results are presented in a table below. A distinct abnormal displacement of the posterior septum has been observed in apical four chamber view in all ARVC/D patients and none in the control group. Also it was possible to notice it in short axis view on the level of mitral valve. This abnormality may be in agreement with localized cell-cell adhesion protein distortion suspected in this condition or localized apoptosis demonstrated in the posterior septal part of crista supraventricularis by Dr Thomas James.

S74 Abstracts

Eur J Echocardiography Abstracts Supplement, December 2003