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Adresa / Address: Hrvatsko kardiološko društvo
HR-10000 Zagreb, Kišpatićeva 12, Croatia
• **www.kardio.hr** • E-mail: **kardio@kardio.hr**

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CroEcho2013

7th Croatian Echocardiography Meeting with International Participation

May 23rd — 25th, 2013

Hotel Valamar Lacroma, Dubrovnik, Croatia

Working Group on Echocardiography and Cardiac Imaging Modalities, Croatian Cardiac Society

Dear Colleagues,

It has been two years since the last CroEcho took place in 2011 in Opatija, that gathered the echocardiographic professionals of Croatia and surrounding countries, with a great number of local and foreign participants, lecturers and exhibitors, thereby continuing its position as the largest echocardiographic meeting in the region. The following two-year period brought about new understandings and technical progress in cardiology, which is inevitably followed and, to a considerable extent, supported by echocardiography.

This year's meeting will take place in Dubrovnik presenting an exceptional opportunity for a new gathering. It is an opportunity to look back upon the recent changes in the European Echocardiographic Association, which grew into an association for all imaging modalities in cardiology: The European Association of Cardiovascular Imaging (EACVI). This change reflects the growing need for rational clinical diagnostics founded upon targeted and all-encompassing usage of imaging examinations in cardiology.

Echocardiography is a fundamental and clinically oriented imaging modality and cardiologists who perform it are clinicians familiar with the clinical problem, so we can expect that cardiologists who perform echocardiography will show the most interest in an integrated and integral imaging approach in cardiology.

The largest part of the program will be dedicated to the basic and advanced educational content in echocardiography, scientific announcements and interactive imaging workshops.

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*Address for correspondence: Klinički bolnički centar Zagreb, Kišpatićeva 12, HR-10000 Zagreb, Croatia.

Phone: +385-1-2367-501

E-mail: jshanzevacki@gmail.com

The emphasis in the educational program has been put on the basic echocardiography course intended for cardiologists, cardiology residents, internal medicine specialists, pediatricians, anesthesiologists, and all those who want to learn the basics of echocardiography. The course is certified by EACVI Education Committee.

In accordance with our goal to encourage higher standards of professional excellence for cardiologists specialized in the field of echocardiography and other imaging modalities and promoting them in clinical diagnostics, research and technological advancement, the scientific part of the program offers you the possibility to show the scientific achievements of your echocardiographic and other imaging laboratories.

Accordingly we are proud and happy that the scientific contribution from both local and international authors has grown substantially. In comparison with the last meeting, the number of submitted abstracts has increased for several times, thereby making the task of the Scientific Committee even more demanding. Therefore, this year we have included two sessions of oral abstract presentations and a session dedicated to clinical case presentations in the scientific programme as well. We congratulate the authors of all accepted abstracts, many of whom have shown that the spirit of clinical research is present and alive among echocardiographers outside university hospitals.

We hope that you will find ample areas of interest in the aforementioned topics.

Welcome to CroEcho2013!

Sincerely,

Jadranka Šeparović Hanževački
Viktor Peršić
Meeting Directors

European Board for Accreditation in Cardiology

The event **CroEcho2013** is accredited by the European Board for Accreditation in Cardiology (EBAC) for **14 hours** of External CME credits.

Each participant should claim only those hours of credit that have actually been spent in the educational activity. EBAC works according to the quality standards of the European Accreditation Council for Continuing Medical Education (EACCME), which is an institution of the European Union of Medical Specialists (UEMS).

CroEcho 2013

WG CroEcho

Cardiologia Croatica

Napomena: Otisnuti prošireni sažetci nisu lektorirani te su otisnuti u izvornom obliku.

Note: The printed extended abstracts are not revised, they are printed in the original form.

Prošireni sažetak / Extended abstract

One possible way to treat a 76-years old patient with congenital heart disease and coronary artery disease

Ksenija Kapov Sviličić*
Clinic for Cardiovascular Diseases Magdalena, Krapinske Toplice, Croatia

This is a case study of 76-year old female patient with the congenital heart disease, discovered accidentally, after she started to complain of fatigue in a moderate effort.

After the initial echocardiography had been made, she was suspected to have (partial) atrioventricular canal defect. This is a form of endocardial cushion defect, infrequently en-countered in adults. According to literature, there are only few case reports describing occasional patients who survived into the sixth or seven decade of their life.

However, the patient was sent to our hospital then for undergoing a complete cardiac evaluation. At first, she was subjected to transthoracic and transoesophageal echocardiographic examination. The correct diagnosis was established (**Figure 1** and **2**). She had partial atrioventricular canal (PAVC) defect, known as a combination of primum atrial septal defect and a cleft in the anterior mitral leaflet, with a certain mitral insufficiency.

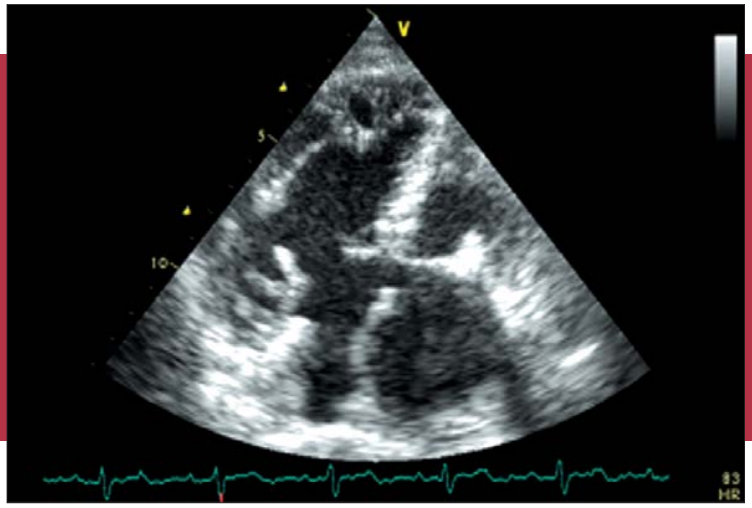

Figure 1. *Transthoracic echocardiogram showing partial AV-canal defect (apical four chamber view).*

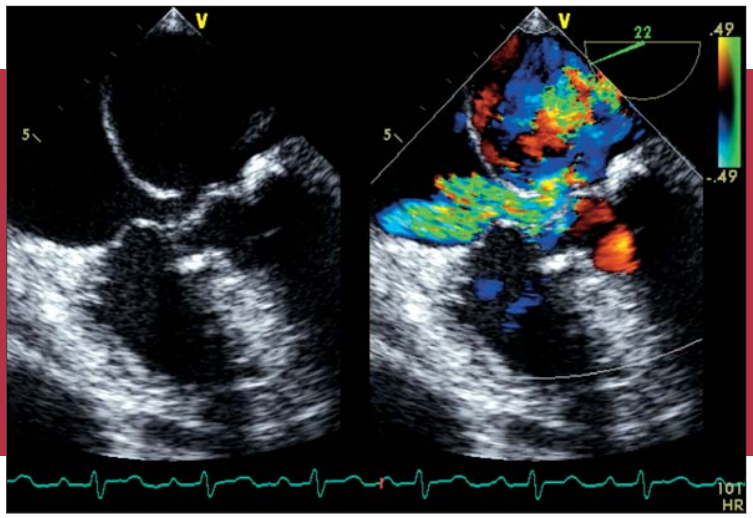

Figure 2. *Transoesophageal echocardiogram showing partial AV-canal defect (**A**); the same transoesophageal (four chamber view) echocardiogram made with color flow Doppler (**B**).*

Prošireni sažetak / Extended abstract

Common pulmonary veins anatomic variants assesed by routine preprocedural multislice computed tomography angiography and its impact on success of atrial fibrillation ablation — single center experience in 75 cases

Ante Anić*, Zoran Bakotić, Marin Bištirlić, Krešimir Librenjak, Iva Pavić, Mladen Harapin, Damir Kasap, Albino Jović

Background: Electrical pulmonary vein isolation (PVI) has become an effective tool to control atrial fibrillation (AF). Point by point ablation guided by electroanatomical mapping system is a preferable method of achieving it. Most electrophysiology (EP) labs routinely employ some kind of preprocedural imaging to gain insight into PV anatomical variants that could alter the strategy of ablation procedure. On the other hand there is scarce data on correlation of knowledge of pulmonary vein (PV) anatomy on success, duration and safety of the procedure.

Methods: From November 2009 till March 2013 we performed 75 AF ablations in General Hospital Zadar, EP lab. All patients underwent preprocedural left atrial and pulmonary veins MSCT angiography using Siemens Somatom 16. 3D reconstructions were made with standard software and operators were aware of the anatomy. Patients were divided into 2 groups depending on anatomical variants of PVs: Group A — standard anatomy in whom all 4 PVs connect to LA with separated ostia and Group B — any other anatomical variant. We then correlated the anatomy with outcomes in terms of success, duration and safety of the ablation procedure.

Results: The most common anatomical variant we met in our cohort was a common left trunk in 17% of patients (13/75). Accessory PVs were registered in 14% (11/75). We had a rare case of accessory right PV connecting to LA roof in one patient. The mean procedure duration was 214 ±49 minutes in Group A vs 208 ±44 in Group B (P=0.71). There was no difference in success defined as clinical improvement in AF burden. No patient reported symptoms suggestive of PV stenosis.

Conclusions: Variants in PV anatomy in our cohort, as assessed by MCST angiography were as common as described in previously published studies. The presence of common left PV trunk shows a trend toward shortening the overall procedure time but has a same success rate in short term follow up. None of the anatomical variants influenced the safety outcomes.

KEYWORDS: pulmonary vein anatomy, atrial fibrillation ablation, MSCT angiography, left pulmonary vein common trunk, accessory pulmonary veins.

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*Address for correspondence: Opća bolnica Zadar, B. Peričića 5, HR-23000 Zadar, Croatia.

Phone: +385-23-505-505

E-mail: anteanic@gmail.com

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Prošireni sažetak / Extended abstract

Right ventricular dysfunction predict limited exercise capacity in heart failure with reduced ejection fraction

Pranvera Ibrahimi[1]*, Gani Bajraktari[1], Afrim Poniku[2], Violeta Hysenaj[2], Artan Ahmeti[2], Fisnik Jashari[1], Edmond Haliti[2], Michael Y Henein[1]

[1]Umeå University, Umeå, Sweden
[2]University Clinical Centre of Kosova, Prishtina, Kosovo

Background and Aim: Compromised exercise capacity is the main symptom in patients with heart failure (HF) and reduced left ventricular (LV) ejection fraction (EF). Six-minute walk test (6-MWT) is popular for objective assessment of exercise capacity in these patients but is confined to heart centres. The aim of this study was to prospectively examine functional parameters that predict 6-MWT in patients with HF and reduced LVEF.

Methods: In 111 HF patients (mean age 60 ±12 years, 56% male), a 6-MWT and an echo-Doppler study were performed on the same day. In addition to conventional ventricular function measurements, global LV dyssynchrony was indirectly assessed by total isovolumic time - t-IVT [in s/min; calculated as: 60 — (total ejection time — total filling time)], and Tei index (t-IVT/ejection time). Also, LV and right ventricular function were assessed by mitral and tricuspid annular plane systolic excursion (MAPSE and TAPSE, respectively). Based on the 6-MWT distance, patients were divided into: Group I: 300 m and Group II: >300 m.

Results: The 6-MWT distance correlated with t-IVT and Tei index (r=-0.37, p<0.001, for both), lateral and septal e' velocities (r=0.41, p<0.001, and r=0.46, p<0.001, respectively), E/e' ratio (r=-0.37, p<0.001) and TAPSE (r=0.45, p<0.001), but not with the other clinical or echo parameters. Group I patients had longer t-IVT, lower E/e'ratio, TAPSE and lateral e' (p<0.001 for all) compared with Group II. In multivariate analysis, TAPSE [0.076 (0.017-0.335), p=0.001], E/e' [1.165 (1.017-1.334), p=0.027], t-IVT [1.178 (1.014-1.370), p=0.033] independently predicted poor 6-MWT performance (<300 m). Sensitivity and specificity for TAPSE 1.9 cm were 66% and 77%, (AUC 0.78, p<0.001); E/e' 10.7 were 66% and 62% (AUC 0.67, p=0.002) and t-IVT 13 s/min were 64% and 60% (AUC 0.68, p=0.002) in predicting poor 6-MWT. Combined TAPSE and E/e' had a sensitivity of 68% but specificity of 92% in predicting 6-MWT. Respective values for combined TAPSE and t-IVT were 71% and 85%.

Conclusion: In patients with HF, the limited exercise capacity assessed by 6-MWT, is multifactorial being related to severity of right ventricular systolic dysfunction as well as raised LV filling pressures and global dyssynchrony.

KEYWORDS: six-minute walk test, Doppler echocardiography, right ventricular function, heart failure, exercise capacity.

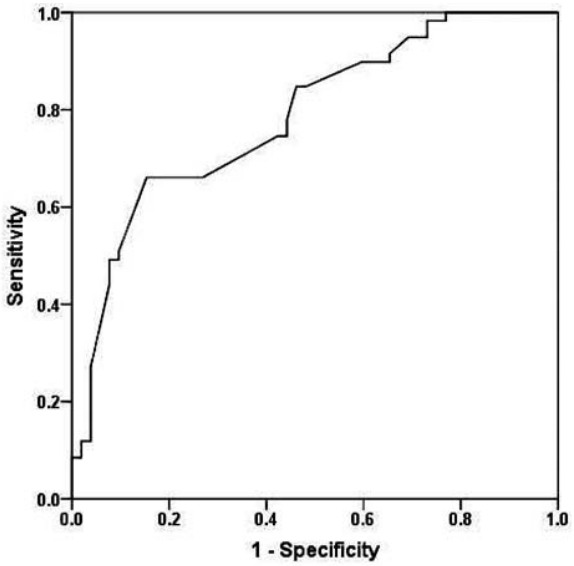

Figure 1. *ROC curve of TAPSE in predicting limited exercise capacity in HF patients.*

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*Address for correspondence: Department of Public Health and Clinical Medicine, and Heart Centre, Umea University, SE-901 87 Umea, Sweden.

Phone: +46-90-785 26 52

E-mail: pranvera.ibrahimi@medicin.umu.se

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Prošireni sažetak / Extended abstract

Presence of risk factors for cardiovascular disease in patients with dilated cardiomyopathy with and without preserved left ventricular contractile reserve

Vladan Perić[1]*, Petar Otašević[2]

[1]Faculty of Medical Science, University of Pristina, Kosovska Mitrovica, Kosovo
[2]Dedinje Cardiovascular Institute, Belgrade, Serbia

Background: It has no completely clear impact of risk factors for cardiovascular disease in the preservation of the left ventricular contractile reserve in patients with dilated cardiomyopathy. The objective was to determine the difference in the incidence of risk factors in these patients with and without preserved left ventricular contractile reserve.

Methods: For this purpose, we studied 55 consecutive patients with dilated cardiomyopathy treated in the Outpatient Clinic for Heart Failure in the Dedinje Cardiovascular Institute in Belgrade. All patients underwent exercise stress echocardiography test to determine the presence of left ventricular contractile reserve. Contractile reserve was defined as the difference in wall motion score index of left ventricular in the first minute of the maximum workload in the test and their values in basal conditions, higher or equal to 0.19.

Results: The mean age of the patients was 54.98 ±9.84, and 49 (89.1%) were male. Among patients with and without preserved left ventricular contractile reserve were found differences in the prevalence of hypertension (15.8 vs. 44.4%, p=0.034), while the presence of smoking (42.1 vs. 33.3%, p=0.52), hyperlipoproteinemia (36.8 vs. 44 %, p=0.59), diabetes (15.8 vs. 25%, p=0.43), body mass index (27.27 ±3.51 vs. 27.52 ±4.66, p=0.83), hereditary predisposition (42.1 vs. 63.9%, p=0.12) and alcohol consumption (15.8 vs. 13.9%, p=0.85) was not statistically significant.

Conclusion: The presence of long-term hypertension adversely affect the preservation of left ventricular contractile reserve in patients with dilated cardiomyopathy.

KEYWORDS: dilated cardiomyopathy, contractile reserve, stress echocardiography, hypertension.

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*Address for correspondence: Faculty of Medical Science, Henri Dunant bb, 38220 Kosovska Mitrovica, Kosovo.

Phone: +381-28-423-512

E-mail: pericvladan@yahoo.com

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Prošireni sažetak / Extended abstract

Myocardial gated SPECT imaging in asymptomatic diabetic patients: clinical decision and optimal therapeutic approach

Irena Peovska*, Elizabeta Srbinovska-Kostovska, Magdalena Otljanska, Frosina Arnaudova, Marija Vavlukis, Nela Kostova, Emilija Hristova

State Hospital — University Clinical Center, Skopje, Republic of Macedonia

Background: Diabetic patients have high prevalence of asymptomatic coronary artery disease (CAD) and silent myocardial infarctions. The dilemma of the best diagnostic approach to asymptomatic diabetic patients in relation to the optimal management is still ongoing. We wanted to evaluate the prevalence of myocardial ischemia in asymptomatic diabetic patients in relation to stress induced ECG changes and its influence on therapeutic decision.

Methods: We evaluated 60 asymptomatic diabetic patients (pts) who underwent SPECT myocardial perfusion imaging (MPI) for detection of suspected CAD. ECG changes during pharmacological stress were compared with MPI results. We use 17 segment model for MPI quantitative analysis. Myocardial perfusion scores and functional parameters were evaluated. We assess the influence of MPI results on final patient management. Logistic regression analysis was used to assess the impact of diabetes on myocardial ischemia prevalence.

Results: Stress inducible ischemia was found in 19 pts (33%), fixed defects in 13% and mixed defects in 9% of cases. The average percent of ischemia was 10%. Mildly abnormal scans were found in 7 patients (36%) — summed stress score (SSS) <8, moderate abnormality in 4 patients (22%) — SSS <13 and severely abnormal scans in 8 patients (42%) — SSS >13. Severe ischemia was only related to the duration of diabetes. Six pts with severe ischemia (75%), had ST segment depression >2mm on pharmaceutical stress, and higher wall motion index ($p<0.01$). Pts with severe ischemia had fall of LVEF during stress >5% comparing to rest LVEF. Transit ischemic dilatation (TID) was observed in 5 pts with severe ischemia. Stepwise logistic regression analysis of stress induced ischemia showed OR 3.9 (95% CI 2.3-6.6) for stress induced ECG changes and OR 2.4 for presence of DM over 10y (95% CI 1.7-3.6). All pts with ischemia >10%, were referred for coronary angiography.

Conclusions: SPECT MPI is valuable method for preclinical assessment of diabetic patients. Diagnostic and prognostic value of MPI can improve cardiac risk stratification and guide management decision in asymptomatic diabetic patients.

KEYWORDS: myocardial SPECT imaging, diabetes mellitus, silent ischemia.

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*Address for correspondence: State Hospital — University Clinical Center, Vodnjanska 17, 1000 Skopje, Republic of Macedonia.

Phone: +389-2-314-71-47

E-mail: ipeovska@yahoo.com

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