Conclusion: In pts with HOCM and significant LVOT obstruction at rest, a pathologic long-axis septal motion with abrupt MSSD is identified by TD, which normalizes after TASH and in the mid-term follow up with successful abolition of the LVOT gradient (< 30 mmHg) at rest. The presence of MSSD obtained by TDI may correlate with a new diagnostic tool for gradient characterization and therapy monitoring of TASH and also during follow up.

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Age-related haemodynamic differences in patients undergoing alcohol septal ablation for obstructive hypertrophic cardiomyopathy: a mid-term follow-up

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Background: Alcohol septal ablation (PTSA) decreases left ventricular outflow gradient (LVOG) and relieves symptoms in patients with highly symptomatic hypertrophic obstructive cardiomyopathy (HOCM). The aim of this study was the evaluation of the age-related early course of haemodynamic changes after PTSA.

Methods: Forty-four consecutive patients 28 females, age 54±13 (24-81) years, underwent PTSA procedure for symptomatic HOCM. Clinical and echocardiographic data were obtained at baseline and periodically up to 12 months after PTSA. Patients were divided into three age-related groups. Group 1 comprised 14 pts. (24-48 years), group 2 comprised 14 pts. (49-60 years) and group 3 comprised 16 pts. (61-81 years).

Results: Among all 44 patients ethanol was injected into 48 septal branches. The volume of alcohol injected was 2.3±0.6 (p < 0.001) with subsequent peak of CK-MB 3.0±2.34 µkat/L (normal range of CK-MB is up to 0.4 µkat/L). Decrease of LVOG was identified in all age-related groups of patients (p < 0.001). In 2D echocardiographic images obtained at rest, a significant influence of age (p < 0.003) and CK-MB peak (p = 0.016) on the course of LVOG reduction. Older patients and a higher postprocedural CK-MB peak were associated with earlier reduction of left ventricular obstruction. The influence of the presence of pacing at baseline, gender and left ventricular ejection fraction after procedure was not significant.

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Apical hypertrophic cardiomyopathy: diagnosis with real time myocardial contrast echocardiography

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The echocardiographic diagnosis of apical hypertrophic cardiomyopathy (ACM) has been limited by the frequent inability to visualize the apical endocardium so that expensive or invasive diagnostic tests are usually necessary to obtain a diagnosis. We hypothesized that contrast echocardiography, in particular myocardial perfusion imaging, may be the technique of choice for the diagnosis of ACM.

Methods: Real time contrast echocardiography for myocardial perfusion imaging was performed in 10 patients (pts), 8 male, 58±10 years, from our hypertrophic cardiomyopathy clinic population with definite (6 pts) or strongly suspected (4 pts) ACM. All 10 pts were presented with the typical: 12 lead resting electrocardiogram with left ventricular hypertrophy and deep negative T waves in the precordial leads. In the 6 definite cases of ACM, diagnosis had been obtained by 2-D echocardiography in 2 pts whereas in the remaining 4 cases magnetic resonance imaging (2 pts) or left ventriculography (2 pts) had been applied to establish a diagnosis. In the remaining 4 pts the condition was strongly suspected based on the electrocardiogram and the indicative but non-diagnostic appearance of the apex on 2-D echocardiography. Images were obtained with Sonovue (Bracco; iv 2 ml) by a Philips Sonos 5500 equipment.

Conclusion: This study demonstrates that in younger patients with HOCM treated by PTMSA the haemodynamic improvement slower than in elderly patients.

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Predictors of gadolinium hyperenancement based on echocardiography in hypertrophic cardiomyopathy. Value of strain measurements

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Despite normal systolic function, myocardial fibrosis has been demonstrated in patients with hypertrophic cardiomyopathy. New tissue Doppler-based measurements (strain and strain rate) provide better insights into myocardial regional characterization.

As in our study relates to gadolinium hyperenancement (GH) in cardiac magnetic resonance (CMR) and echocardiography (echo).

Results: 44 consecutive patients with hypertrophic cardiomyopathy underwent gadolinium-enhanced CMR and echo with strain measurements. 223 segments (8.2 segments per patient) were available for both echo and CMR analysis. Apical segments were not evaluated. Patients with implanted devices were excluded.

Results: Maximal left ventricular wall thickness (MLVWT) was 20.1±4.8 mm. 11 (31%) had significant LVOT obstruction. 69% were in NYHA functional class I. 16% had non-sustained ventricular tachycardia on Holter. 42% had none, 33% had one, and 25% had >1 risk factors for sudden death. 23 (64%) patients had positive GH in CMR. MLVWT in mm was predictor of positive GH (OR: 1.47; 95% CI: 1.10-1.96, p<0.009). There was a trend between septal strain and quantitative measurement of global GH (r=0.39, p=0.07). There was no association between septal strain rate and septal thickness or global GH. Segmental analysis failed to show relation between wall thickness, strain, strain rate and segmental GH.

Conclusions: Maximal left ventricular wall thickness on echo is a good predictor of global gadolinium hyperenancement on CMR in patients with hypertrophic cardiomyopathy. Association between strain and GH on CMR merits further investigations.

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Correlation between left ventricular mass and the parameters characterizing the left ventricular diastolic function in patients with hypertrophic cardiomyopathy


In patients with hypertrophic cardiomyopathy (HCM) left ventricular (LV) mass seems to be an important factor influencing the diastolic function. The aim of our study was to investigate the relationship between LV mass and the parameters of the global LV diastolic function determined by conventional and tissue Doppler echocardiography and cardiac magnetic resonance imaging (CMR). Left atrial volume which has been suggested as a marker of the diastolic dysfunction's severity was also measured. Patients: 34 consecutive patients with HCM (24 male, 10 female, mean age 49±14 years) were studied. Inclusion criteria were: normal sinus rhythm, ejection fraction ≥50%.

Methods: In addition to the conventional transmural flow patterns – early (E) and late diastolic (A) velocities, deceleration time (DT), isovolumic relaxation time (IVRT) – myocardial early (Ea) and late diastolic (Aa) velocities were measured at the lateral border of the mitral annulus by ATL HDI 5000 ultrasound system. Ea/Aa and E/Ea ratios were calculated. Maximal left atrial volume (Vmax) was...