nal Doppler (E, A) and lateral and septal mitral annular systolic (Sa) and dias-
tolic (Ea) velocity measurements and their mean (Ea/E). Age and LVEF were 56±11y and 28±8%; 39% had ischemic cardiopathy; 75% were NYHA 4; 48% had increased PCWP>15 mmHg. Correlations between PCWP and the three tested E/Ea ratios ranged from 0.33 to 0.47 and E/Ealat showed the best (all p<0.01). Fifty-five patients (44%) had an ele-
vated E/Ealat >15. Specificity and sensitivity of E/Ealat for increased PCWP were globally poor (76%; CI95[65-86] and 58%; CI95[45-71%]). The cohort was sub-divided into quintiles accordingly to Salat velocity. In patients with higher lateral Salat>4.5 cm/s (three upper quintiles, N=78), specificity of E/
Ealat for increased PCWP was 91% CI95[78-97], significantly higher (p=0.01) than in the two lower quintiles with Sa<4.5 cm/s (39%; CI95[17- 64%]). In contrast, sensitivity of E/Ealat was not significantly different among groups of Salat. When considering E/Ealat as a continuous variable, area
under the ROC curve (AUC) was 0.72 (0.63-0.79) in the entire population. AUC was better in the group with Salat>4.5 cm/s (0.82 [0.71-0.92]) than the group with Sa<4.5 cm/s (0.54 [0.38-0.7]); with significant difference between the two AUC (p=0.005). Specificities, sensitivities and AUCs of, E/Ealat, and E/Ea after stratifying for Salat values were lower than those observed with E/Ealat.

Conclusion: Our data suggest that E/Ealat may be a reliable tool to iden-
tify patients with normal LV filling pressure in severe systolic HF if longitu-
dinal contractility is preserved (Salat>4.5cm/s).

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New parameters for the quantification of the right ventricle systolic function: a prospective MRI study

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Purpose: Cardiac MRI is the gold standard for studying the right ventricle
(RV) systolic function, a well-established prognosis determinant of cardiomy-
opathies. We sought to identify new reliable and less time consuming param-
eters than endocardial delineation, for assessing right ventricular systolic
function.

Methods: Forty three unselcted patients (31 males, 12 females) aged 19-
81 years who were referred for cardiac MRI in a University Hospital center were included consecutively.

MRI Right and Left Ventricle Ejection Fraction (RVEF, LVEF) were mea-
sured by defining the contour of the endocardium. In a subsequent post-treat-
ment investigation, we blindly measured MRI TAPSE (mTAPSE), and the RV
diastolic and systolic diameters (dD, sD) at basal and medial levels in a short
axis view. We then calculated new parameters we called Fractionnal Basal Diameter Change (FBDC)=(basal dD – basal sD)/ basal dD, and Fractionnal Medial Diameter Change (FMDC) calculated by the same method at a medial
level.

Results: Thirty five patients had a RVEF>40% (group A), 8 patients
(19%) had a RVEF<40% (group B).

MRI stroke RV and LV volumes showed very strong correlations (r=0.87
p<0.0001), thus MRI RVEF was a reliable measurement.

In group A, FBDC was 0.23±0.08, FMDC was 0.22±0.11 and mTAPSE was 24 +/-9 mm. In group B, FBDC and mTAPSE were significantly lower than in group A (FBDC=0.14 +/-0.11 p=0.01, FMDC=0.13+/−0.11 p=0.04, mTAPSE=16+/-5 mm p=0.02).

Conclusions: New regional right ventricle parameters correlated well with
MRI RVEF especially at a basal level. These parameters appeared more sig-
nificant than TAPSE, a well-established parameter of systolic right ventricle
function in echocardiography.

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Comparison between echocardiographic (TTE) and cardiac magnetic resonance (CMR) parameters of left ventricular afterload and remo-
deling

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Objective: To investigate the value of TTE and CMR in the assessment of
left ventricular (LV) adaptation to an increased afterload and to analyze the
effect of the on LV systolic function.

Background: To maintain an effective LV-arterial coupling, the LV adapts
to the increased afterload by changing its geometry with subsequent hyper-
trophic-remodeling resulting in a reduction of the effective systolic myocardial
wall stress.

Methods: We studied a group of 49 subjects: 35 healthy subjects (group I, 38±13 years) and 14 patients with aortic valve stenosis (group II, 77±9 year, valve area=0.75±0.18 cm²). We calculated: 1)TTE parameters of wall stress (SMWS, 103 dyn/cm²), remodeling (h/r), and systolic function (LVEF ejection fraction (2DF- EF, %), 2)D longitudinal global strain (global-ef, %); 2CMR end-
diastolic mass to volume ratio (LMM/EDV, g/ml) as well as the 3D systolic myocardial wall stress (3D SMWS, 10-2N/m²) combining LV geometry(3DLVgf) and arterial load. The Statistical analysis was performed by
Pearson correlation coefficient and t-test.

Results: LVEF was homogeneous in 2 groups (I=64%, II=62%, p=0.69).
Significant difference was found between the 2 groups in terms of SMWS, global-ef and h/r (p=0.05). Furthermore, while no correlation was found between TTE and CMR parameters in the group I, significant correlations were found in group II for the comparisons: 1-TTE and CMR parameters of LV remodeling (LVM/EDV and h/r), (r=0.87, p<0.0005); 2-CMR LV geom-
etry factor (3DLVgf) and TTE 2D global-ef(r=0.79, p<0.005); 3-CMR SMWS and TTE 2D global-ef(r=0.8, p<0.005); 4 – CMR SMWS and TEE
SMWS (r=0.78, p=0.0005).

Conclusion: Increased afterload results in LV remodeling with good cor-
relation between CMR and TEE parameters. Its effect on LV function was
revealed by the good negative correlation between CMR SMWS and TEE-
global-ef, which was found despite the preserved LVEF. Parameters of longi-
tudinal systolic dysfunction may have a clinical interest in management of
patients with preserved LVEF as a predictor of heart failure.

Keywords: LV remodeling, systolic myocardial wall stress, global longi-
tudinal strain, echocardiography, cardiac magnetic resonance

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Importance of left ventricular remodelling and regional wall motion abnormalities in the occurrence of functional ischemic mitral regurgi-
tation

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Introduction: Functional ischemic mitral regurgitation (IMR) is common
in patients with ischemic left ventricular dysfunction after myocardial infarc-
tion, and significantly worsens prognosis. The aim of this study is to deter-
mine the relative importance of the global and regional left ventricular (LV)
remodeling in the occurrence of IMR.

Methods: 81 patients (mean age=61±11 years) admitted with acute myo-
cardial infarction (AMI) were screened. Patients with atrial fibrillation and
organic valvular diseases were excluded from the study. Echocardiography
two-dimensional and Doppler echocardiograms) was performed in the first
week after admission. The 81 patients were divided in 2 groups: with IMR
(group 1=49 patients) and without IMR (group 2=32 patients). LV volumes
were calculated by apical biplane Simpson’s rule. The LV wall-motion score
(WMS) index was obtained in a 17 segment model according to established

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