was assessed by the correlation between echo parameters and clinical 6MWD and RV function.

Results: 58 patients with RHC measured SPAP 73.0±23.6 mm Hg, DPAP 39.0±13.0 mm Hg, MPAP 51.7±15.4 mm Hg, PVR 11.6±5.3 wood units and CO 4.0±1.3 L/min, were targeted treatments as bosentan (n=18), ambrisentan (n=7), sildenafil (n=13), vardenafil (n=17), tadalafil (n=9), beraprost (n=12) and iloprost (n=8). Myocardial infarction and performed lung transplantation during the total duration of 30.24±18.46 months’ (range 6 to 70 months) follow-up. The left/right ventricular diastolic dysfunction (LVDD/RVDV) score measured by 2D-echo had a good correlation with MVFD at baseline (rLVDD=0.699, P<0.001; rRVDV=0.818, P<0.001) and 6MWD (rLVDD=0.767, P<0.001; rRVDV=0.701, P<0.001; last follow-up rLVDD=0.701, P<0.001; rRVDV=0.666, P<0.001) respectively. Furthermore, bi-ventricular scores (LVDD score + RVDV score) measured by 2D-echo had a better correlation with 6MWD at baseline and last follow-up (r=0.831, P<0.001; r=0.771, P<0.001). The correlation between right ventricular parameters (RVEDV, RVESV, RVEF, RV+SV and RVFD) measured by 2D-echo and MVFD had no clinical significance in the last follow-up (r=0.556, P<0.001; r=0.756, P<0.001; r=0.549, P<0.001; r=0.847, P<0.001). Receiver operating characteristic (ROC) curve showed that the area under curve (AUC) of LVDD score, RVDD score and (LVDD + RVDD) score were 0.823 (P<0.0001), 0.737 (P<0.0002), and 0.825 (P<0.0001) respectively. Compared with ROC analysis of other single parameters, cardiac diastolic function score was more accurate to predict survival of patients with PAH.

Conclusions: Single ventricular diastolic function score was superior to single parameter measured by 2D-echo to predict clinical prognosis in patients with PAH. And the bi-ventricular diastolic function score was better than single ventricular diastolic function score to predict clinical outcomes in patients with PAH. Contrast to routine echo parameters such as TAPSE, Tei, FAC, 3D-echo was superior to 2D-echo to evaluate right ventricular function. Cardiac diastolic function score was more accurate to predict survival of patients with PAH. GW52-e1624

Delayed-enhancement MRI using low-dose contrast for the assessment of myocardial infarction

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Objectives: A recent multicenter study shows delayed-enhanced magnetic resonance imaging (DE-MRI) using contrast doses of ≥0.2 mmol/kg is effective in the assessment of myocardial infarction (MI), and 0.1 mmol/kg is not enough; intermediate doses between 0.1 and 0.2 mmol/kg have not been tested. The aim of this study was to prospectively test the performance of DE-MRI using 0.15 mmol/kg of contrast agent for the detection of MI.

Methods: A total of 27 consecutive patients with chronic MI underwent DE-MRI using both 0.15 mmol/kg and 0.2 mmol/kg of contrast agent in random order and on separate days. Infarction segment and infarction size were compared on DE-MRI images using a 17-segment model. Bland-Altman analysis was used to analyze correlation and agreement between global infarct size.

Results: DE-MRI showed enhanced myocardium in all the 27 patients with chronic MI. There was no significant difference between the 0.15 mmol/kg and 0.2 mmol/kg images, except 27 patients (7.88±2.75 vs 7.83±2.55, respectively; P=0.05). There was no significant difference between the infarction size obtained from 0.15 mmol/kg acquisition and that from 0.2 mmol/kg acquisition (16.2±7.7% vs 16.3±7.8%, respectively; P=0.05). A strong correlation between the infarction size obtained from 0.15 mmol/kg acquisition and that from 0.2 mmol/kg acquisition was indicated through Bland-Altman analysis.

Conclusions: DE-MRI using 0.15 mmol/kg of contrast agent is effective for the assessment of MI. GW52-e2157

Evaluation of fetal cardiac structure and function of gestational diabetes mellitus by Echocardiography

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Objectives: To investigate the influence of gestational diabetes mellitus (GDM) on fetal cardiac structure and function.

Methods: 96 pregnant women with controlled GDM with 71 pregnancies with diet control and 25 pregnancies with insulin treatment and the same period 176 normal pregnancies were studied. All the fetuses were divided into 2 groups: <28; ≥28 weeks. The inner diameters of atrioventricular cavity, ventricular cavity, aorta and pulmonary artery were measured using two-dimensional ultrasound. The peak blood flow velocity of each valve orifice were measured by pulse doppler waveforms. M mode was obtained with after-processing of STIC. The thickness of ventricular wall and interventricular septal wall were measured with M mode. The end of systolic and diastolic ventricular volume were measured with after-processing of STIC. The left and right ventricular SV, EF and CO were calculated. The early diastolic velocity (Ea) and late diastolic velocity (Aa) of mitral annulus and tricuspid annulus were obtained by TDI. In the meantime, isovolumic contraction time (ICT), isovolumic relaxation time (IRT) together with ejection time (ET) were also acquired. The index of left and right ventricular Tei were calculated. The fetal cardiac function of GDM and normal pregnancy were compared.

Results: There was no statistics difference on all the parameters before 28th week of pregnancy. After 28th weeks of pregnancy, there was a significant increase in ventricular walls and interventricular septal thickness in GDM with insulin treatment compared with normal pregnancies. After 28th weeks of pregnancy, there was a significant increase in ventricular walls and interventricular septal thickness in GDM with insulin treatment compared with normal pregnancies. The diastolic function is mainly impaired. The diastolic function of right ventricle was lower in GDM with insulin treatment compared with pregnancies with diet control.

GW52-e2470

Increased longitudinal contractility and diastolic function at rest in well-trained amateur Marathon runners: a speckle tracking echocardiography study

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Objectives: Regular physical activity reduces cardiovascular risk. There is concern that Marathon running might acutely damage the heart. It is unknown to what extent intensive physical exercise activity influences the cardiac mechanics at resting age. The aim of this study was to prospectively test the performance of DE-MRI using 0.15 mmol/kg of contrast agent for the detection of MI.

Methods: A total of 27 consecutive patients with chronic MI underwent DE-MRI using both 0.15 mmol/kg and 0.2 mmol/kg of contrast agent in random order and on separate days. Infarction segment and infarction size were compared on DE-MRI images using a 17-segment model. Bland-Altman analysis was used to analyze correlation and agreement between global infarct size.

Results: DE-MRI showed enhanced myocardium in all the 27 patients with chronic MI. There was no significant difference between the 0.15 mmol/kg and 0.2 mmol/kg images, except 27 patients (7.88±2.75 vs 7.83±2.55, respectively; P=0.05). There was no significant difference between the infarction size obtained from 0.15 mmol/kg acquisition and that from 0.2 mmol/kg acquisition (16.2±7.7% vs 16.3±7.8%, respectively; P=0.05). A strong correlation between the infarction size obtained from 0.15 mmol/kg acquisition and that from 0.2 mmol/kg acquisition was indicated through Bland-Altman analysis.

Conclusions: DE-MRI using 0.15 mmol/kg of contrast agent is effective for the assessment of MI. GW52-e3388

Three-Dimensional Rotation, Twist and Torsion Analyses by Real-time 3-D Speckle Tracking Imaging: Feasibility, Reproducibility, and Normal Ranges in Pediatric Population

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Objectives: The aim of this study was to evaluate the feasibility and reproducibility of LV rotation, twist and torsion by real-time 3D speckle-tracking echocardiography (STE) in children and to establish their normal values.

Methods: A prospective study was conducted in 347 consecutive healthy subjects (181 male/166 female, and range from birth to 18 years) using RT 3-D echocardiography (3DE). The LV rotation, twist and torsion measurements were made off-line using new TomTec software. Manual landmark selection and endocardial border editing were performed in 3 planes (apical 2-, 4-, and 3’- chamber views) and semi-automated border identification and tracking yielded LV rotation, twist and torsion measurements.

Results: LV rotation, twist and torsion analysis by RT 3D-STI was feasible in 307 of 347 subjects (88.5%). There is no correlation between rotational or twist and age, height, weight, BSA or HR, respectively, using canonical correlation analysis. However, there is a negative correlation between age and LV torsion (P<0.001). The normal ranges were defined in this cohort for rotation and twist, and for each age group for torsion. The intraclass and interobserver variabilities for apical and basal rotation, twist and torsion ranged from 7.3%±3.8% to 12.3%±8.8% and from 8.0%± 4.6% to 15.7%±10.1%, respectively. Interclass correlation coefficients ranged from 0.78 to 0.89 and from 0.76 to 0.83 for intraobserver and interobserver measurements for rotation, twist and torsion, respectively.

Conclusions: Analyses of LV rotation, twist and torsion by this new RT3D STI methodology are feasible and reproducible in pediatric population.

GW52-e3473

In vivo quantification of VCAM-1 expression in atherosclerosis model using non-invasive targeted ultrasound imaging

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Objectives: Vascular cell adhesion molecule-1 (VCAM-1) is upregulated in the initiation and progression of atherosclerosis. We hypothesized that contrast-enhanced