GW25-e1440
Study on four-dimensional Echocardiography of Left Ventricular Systolic Function
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Objectives: To assess the left ventricular function of patients with myocardial infarction by 4D Auto LVQ, and correlation with 4D strain to positioning and quantitative analysis of the infarction area and size. To explore the application value of left ventricular function in the patients with myocardial infarction or myocardial ischemia to positioning and quantitative analysis of the infarction area and size by 4D Auto LVQ and 4D strain.

Methods: Twenty subjects and thirty patients with myocardial infarction using 4D full-volume cardiac probe, in order to obtain the full-volume full-time dynamic images on apical 4-chamber views of 4-6 cardiac cycle, to ensure the image frame frequency is greater than the heart rate of 40%, then choose the volume, start the software of the 4D Auto LVQ, and put two points in the end-diastolic volume and end-systolic volume of the endocardial, one point put on the middle of the mitral valve ring, another put on the apex of the endocardial. The left ventricular end-diastolic volume (LVEDV), end-systolic volume (LVESV), ejection fraction (LVEF), stroke volume (SV), heart rate (HR) were derived by 4D Auto LVQ. We can use 4D strain to obtain the left ventricular 17 segments of LS which is based on 4D Auto LVQ. Take all the segments to express by the color-code of IBE. All date use SPSS19.0 to analysis.

Results: (1) The difference for age HR was not significant between the group of patients with myocardial infarction and the normal group. Through 4D Auto LVQ compared to the normal group, the SV of the MI was not significant (P=0.05) LVEDV and LVESV were larger and the LVEF was lower in the group of patients with myocardial infarction than those of the control group, and had statistically significant difference (P<0.05). (2) The decrease of LVEF and the increase of the LVEDV moved with 4D strain in the MI was high in the middle of the mitral valve ring (r=0.720). (3) The 17 segment LS of the patients with 4D Strain were lower at the basal, mid, apical and apex those of the control subjects and had statistically significant difference (P<0.05). (4) The control subjects with 4D Strain in the different left ventricular level had regular: the left ventricular systolic peak strain of the mid is largest, the basal is minimum, the apical is in middle. Conclusions: (1) The left ventricular systolic function measured with 4D Auto LVQ and assesses the regional wall motion or myocardium deformation of the left ventricular function accurately. (2) Correlated with 4D strain to positioning and quantitative analysis with myocardial infarction or myocardial ischemia of the infarction area and size.

GW25-e1452
Evaluation of Left Ventricular Remodeling by Three-Dimensional Speckle Tracking in Patients with ST-elevation Myocardial Infarction
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Objectives: To evaluate the left ventricular remodeling, left ventricular dimension, ejection fraction, left ventricular rotation and torsion movement were detected by three-dimensional ultrasound speckle tracking in patients with ST-elevation myocardial infarction. The relationship between fatty acid desaturase polymorphism and left ventricular remodeling were analyzed.

Methods: Sixty patients admitted with acute ST-elevation myocardial infarction (STEMI) and received percutaneous coronary intervention (PCI) in our study. Thirty patients of left ventricular remodeling were on the proper level. The ACS patients were not always exist blood lipid disorder. (4) Regardless of men and women, the earlier they were attacked, the higher of TC, LDL-C, non-HDL and LDL-C/HDL-C ratio was. (5) There is a significant effect on the severity of coronary artery lesions of both HDL-C and non-HDL-C, and the effects didn’t have gender differences.

GW25-e1717
The value of aorta pulse pressure/pulse pressure index in predicting the coronary heart disease in female patients
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Objectives: The present study was undertaken to investigate the significance of aorta pulse pressure (PPI) and pulse pressure index (PPI) in predicting the incidence of coronary heart disease (CHD) and the severity of coronary artery lesion in female patients.

Methods: 717 female patients who had undergone coronary angiography were divided into CHD group (n=426, mean age 68.85±9.11 years old) and non CHD group (n=291, mean age 61.9±9.6 years old) according to the results of coronary angiography. The severity of coronary artery arteriosclerosis was assessed by the number of stenosis coronary artery. Aorta blood pressure was measured during angiography.

Results: Aortic PP and PPI in the CHD group were significantly higher than those in the non CHD group (PP 62.55±22.65 mmHg vs. 54.96±21.51 mmHg, P<0.001; PPI 0.44±0.10 vs. 0.40±0.11, P<0.001). Linear correlation analysis indicated that PP and PPI were significantly positively associated with the occurrence of CHD (r = 0.166, P = 0.001). Furthermore, the severity of coronary artery arteriosclerosis was increased with associated PP and PPI (r = 0.177, 0.196, P<0.001). Logistic multivariate analysis showed that PPI was a independent predictor of CHD (OR=8.065, 95% CI 1.628-39.951, P=0.003).

Conclusions: The levels of aorta PP and PPI were significantly positively associated with the occurrence of CHD and the severity of coronary artery lesion in female patients. PPI is the most prominent predictor in diagnosis of CHD in woman.
Results: After follow-up observations, angina condition in FFR group and non-FFR group was compared. The FFR group improved after the drug was used. The FFR group was better than non-FFR group. The FFR group was better than conservative treatment group. In the FFR group, 2 patients had the symptom of chest distress and breathe hard, but the symptom eased after about 20 seconds; while in the non-FFR group, one case of chest pain caused by coronary artery side branch occlusion. JACC occurred in two patients. One case occurred in the FFR group, but the other occurred in the non-FFR group, the patient stroked 7 months after the operation. The dose of the contrast agent, number of stents implantation, hospitalization time, all hospitalization expenses and the follow-up period all expenses, FFR group has an advantage over the others.

Conclusions: Though not doing the FFR testing, the critical lesions with Coronary artery stenosis >50% is given drug therapy is being efficient, safe and economical. The athero hard plaque CAG found the critical lesions with the degree of coronary stenosis >50%, adopting FFR to guide treatment decisions. Its efficacy and safety are better than treatment decision of CAG. So it should be widely applied. Although FFR testing can increase in supplies expense, the average total cost of FFR group is lower than that of the non-group. It has a better price performance ratio; FFR determination after PCI is of help that evaluate the immediate efficacy and judge the Long-term prognosis.

GW25-e3249
Ischemic postconditioning may increase Serum Fetuin-A Level in patients with acute ST-segment elevation myocardial infarction undergoing percutaneous intervention
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Objectives: Fetuin-A inhibits inflammation and has a protective effect against myocardial ischemia. We investigated the influence of ischemic postconditioning on Serum Fetuin-A levels and high-sensitive C-reactive protein (hs-CRP) in patients with acute ST-segment elevation myocardial infarction undergoing percutaneous intervention.

Methods: Forty-five patients undergoing percutaneous coronary intervention (PCI) were randomly assigned to a control (n = 21) or postconditioning (PC, n = 24) group within 90 minutes after admission. After predilatation, in the Control group, no intervention was applied in the first 3 minutes of reperfusion, while in the Post-conditioning group, three cycles of 30-second angioplasty balloon deflation and 30-second inflation were repetitively applied. Blood samples were obtained and assayed for creatinine kinase MB (CK-MB), Fetuin-A, and hs-CRP.

Results: The control group presented with higher peak CK-MB as compared with the PC group (123.67±44.19 vs. 93.08±36.17 U/L, P<0.05). After PCI, PC was associated with a lower level of hs-CRP in comparison with the control group (6.07±1.35 vs. 7.03±1.27 mg/dL, P<0.05). Serum Fetuin-A levels in the PC group was higher than that in the control (161.06±23.98 mg/L vs. 144.59±27.76 mg/L, P<0.05).

Conclusions: Postconditioning may increase Serum Fetuin-A level and decreased high-sensitive C-reactive protein in myocardial infarction patients.

GW25-e3431
The comprehensive evaluation of Coronary artery anatomy and myocardial perfusion imaging using dual-source computed tomography of the heart: comparison with conventional coronary angiography
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Objectives: To assess the feasibility and accuracy of 128-slice dual-source computed tomography in the comprehensive evaluation of coronary artery anatomy and myocardial perfusion function.

Methods: 30 patients (20 male, 10 female, mean age 59.03±8.16 years, suspected or diagnosed as stable angina, were performed computed tomography coronary angiography (CTCA) and adenosine-induced stress (AIS) computed tomography perfusion (CTP) using dual-source computed tomography (DSCT). We completed coronary angiography (CAG) two weeks later. According to the results of CAG, they were divided into 3 groups: no stenosis, non-obstructive stenosis (coronary artery stenosis 50-70%) and obstructive stenosis (coronary artery stenosis ≥70%). We compared the results of DSCT with the gold standard CAG and evaluated the accuracy of DSCT in the diagnosis of coronary artery disease (CAD).

Results: 87 vascular territories of 29 patients who completed both CAG and CTCA combined with CTP were analyzed. Compared with CAG (n=29), the sensitivity, specificity, PPV and NPV of CTCA on a per vessel basis were 0.841, 0.907, 0.902, 0.848 for non obstructive stenosis, and 0.821, 0.847, 0.719, 0.909 for obstructive stenosis, respectively. The sensitivity, specificity, PPV and NPV of CTP on a per vessel basis were 0.545, 0.837, 0.774, 0.643 for non obstructive stenosis, and 0.643, 0.780, 0.581, 0.821 for obstructive stenosis, respectively. The sensitivity, specificity, PPV and NPV of CTP combined with CTCA on a per vessel basis were 0.868, 0.674, 0.736, 0.853 for non obstructive stenosis, and 0.893, 0.627, 0.532, 0.925 for obstructive stenosis, respectively.

Conclusions: Using DSCT, we could complete AIS-CTP and CTCA at the same time. CTCA and CTP provide different and complementary information in the aspect of coronary artery anatomy and myocardial perfusion function. DSCT may be the promising non-invasive methods for CAD diagnosis in the future.