

ARVC or sudden death (OR=7.300, 95% CI 1.606 to 33.177, $p=0.010$), the accordion sign (OR=7.000, 95% CI 1.509 to 32.468, $p=0.013$) and number of regions with myocardial fibrosis (OR=2.204, 95% CI 1.116 to 4.354, $p=0.023$) were independent predictors for life-threatening ventricular arrhythmia in ARVC.

Conclusions MRI is the optimal imaging approach for detecting ARVC. Familial history of ARVC or sudden death, the accordion sign and number of regions with myocardial fibrosis were associated with an increased risk of life-threatening ventricular arrhythmia in patients with ARVC.

e0605 "ONE-STOP SHOP" EXAMINATION OF COMPLICATED AND COMPLEX CONGENITAL HEART DISEASE WITH MRI

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Objective To evaluate the diagnostic value of MRI in complicated congenital heart disease, comparing with echocardiography and x-ray cardio-angiography.

Methods 20 patients with complicated or complex congenital heart disease (male 12, female 8, mean age 17.8 y, ranging from 3–46 y) underwent MR examination. A wireless vector ECG-gating was used for triggering; all the sequences were applied with breath hold or free breathing. Turbo spin echo and multiple gradient echo sequences including FLASH (fast low angle shot) and TrueFISP (true fast imaging with steady-state precession.) with TSENSE (adaptive sensitivity encoding incorporating temporal filtering) and TREAT (time resolved echo-shared technique) were used to evaluate the morphology, function, flow status of the heart. MR findings were compared with the results of echocardiography and x-ray cardio-angiography.

Results All the examination were accomplished successfully and diagnostic MR images were obtained satisfactory. The mean total scan time was 38 min ranging from 29~55 min. According to the main malformation diagnosed by MRI, double-outlet of right ventricle (DORV) were 11 cases, single ventricle were 3 cases, function-corrected transposition of great arteries were 2 cases, endocardial cushion defect, interruption of aortic arch, coarctation of the aorta and pulmonary atresia was 1 case, respectively. The total coincidence was 95% comparing with cardio-angiography, while the echocardiography was 75%. It is difficult for x-ray cardio-angiography to evaluate the atrio-ventricular valve in 25% cases, while MR can clearly and precisely show the number, morphology and function of the valves in all cases. There is 20% of the cases that traditional x-ray cardio-angiography cannot demonstrate the connection of ventricular-great arteries, or the main pulmonary artery and its main branches because of anatomy overlapping, tolerance of the patients and skill of catheterisation, while MR provide important complementarities for these cases.

Conclusion Combined with new robust techniques, MRI can provide a comprehensive evaluation of complicated congenital heart disease including morphology, function, and flow and so on. With some characteristics of both echocardiography and x-ray angiography, in some aspects MRI is even better than x-ray angiography and can offer important supplemental information.

e0606 TRANSCATHETER CLOSURE OF A GIGANTIC RIGHT SINUS OF VALSALVA ANEURYSM TO RIGHT VENTRICULAR FISTULA: A CASE REPORT

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Ruptured aneurysms of the sinus of Valsalva with a gigantic fistulous tract are extremely rare. A single origin of the coronary arteries

is a rare coronary anomaly. We describe the case of a 6-year-old girl who had a ruptured aneurysm of the right coronary sinus with a gigantic fistulous tract and an anomalous origin of the right coronary artery. Transthoracic echocardiography showed the right coronary artery (RCA) aneurysm and RCA fistula connecting to the right ventricular (RV). Aortography revealed the presence of a right coronary sinus of Valsalva aneurysm (SVA)-RV fistula and the originating of right coronary artery (RCA) from left circumflex artery (LCX). She was diagnosed as having a gigantic SVA to right ventricle fistula and a single origin of the coronary arteries. Successful transcatheter closure of the fistulous ostium was performed.

e0607 ANALYSIS ON EARLY DIAGNOSIS GRADING MODEL OF ACUTE AORTIC DISSECTION

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Objective To investigate the features of the clinical manifestation, laboratory data and imageology information in acute Aortic Dissection (AD) patients, to find the early, right and easy grading model of diagnosing AD.

Method Analyze the clinical manifestation, Laboratory data and imageology information of 182 AD patients, who were our patients at Emergency Department in last three years, and meanwhile, compared them with 184 chest and back ache patients, to search the early diagnosis grading model of AD.

Results If 5 score was the standard of the grading system to early diagnose AD on the basis of logistic regression equation and clinical practice, the sensitivity of AD forecast is 96.7%, specificity is 81.0%.

Conclusions We can improve the emergency diagnose level of AD through establishing the early grading model which contains the stabbing and severe pain, distinct rise of the blood pressure, asymmetry of the blood pressure and/or the pulse, wide arteriae aorta and/or mediastinum on chest x-ray, obvious rise of D-dimmer.

e0608 A NITINOL OCCLUDER AND A SPECIAL DELIVERY DEVICE FOR PATENT DUCTUS ARTERIOSUS (PDA) CLOSURE

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Background Nitinol occluders used for patent ductus arteriosus (PDA) may result in the stenosis of aortic and pulmonary artery when applied for smaller-sized children. The present study sought to design and develop an improved nitinol occluder and delivery system, and to verify the reliability and safety of this device on canine model of PDA.

Methods A canine PDA model was established by anastomosing the internal jugular vein with the left pulmonary artery and the descending aorta in an end-to-side fashion. The effects of the novel nitinol occluder and its delivery system were followed-up for 6 months after the closure.

Results PDA was successfully established in 10 out of 18 dogs and was treated by transcatheter occlusion with the novel nitinol occluder. Postoperative echocardiography showed that the location and shape of the occluder were normal without any regurgitation. Morphological examination revealed that the surface of the occluder was covered by a grey membrane-like tissue, which was identified as endothelial tissue by histological and electron microscopy examinations. There was no corrosion or severe inflammation on the

nitinol wire surface. Three to six months after implantation, the occluder surface was completely endothelialized.

Conclusion The novel nitinol occluder can be safely and effectively used for PDA closure, providing a high success rate with few complications, and good biocompatibility.

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e0609 THE GENDER DIFFERENCES OF RED BLOOD CELL DISTRIBUTION WIDTH IN PATIENTS WITH CORONARY HEART DISEASE

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Objective To observe the changes of RDW in patients with coronary heart disease (CHD).

Methods 287 CHD patients diagnosed by coronary angiography were selected from Jun. 2007 to Jun. 2008. Meanwhile, 286 hypertensive patients and 302 healthy adults were enrolled as control group. Red blood cell count (RBC), Haemoglobin (HGB), red blood cell distribution width (RDW-CV) was detected by full automatic haemocyte analyser (Sysmex XE-2100).

Results Compared with hypertension and normal control group, the RDW of CHD group significantly increased. There was no difference between the male RDW in three groups. But the RDW of female CHD subgroup was higher than those of female hypertensive and normal subgroups (13.5 ± 0.8 vs 13.0 ± 0.6 vs 13.1 ± 0.8 , $p < 0.05$). Meanwhile, the RDW of female CHD subgroup was higher than that of male CHD subgroup also (13.5 ± 0.8 vs 13.1 ± 0.7 , $p < 0.05$).

Conclusion The RDW in CHD group has gender differences and only female RDW significantly increase.

e0610 THE CHANGES OF B-TYPE NATRIURETIC PEPTIDE IN CHRONIC HEART FAILURE PATIENTS WITH DIABETES MELLITUS

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Objective To observe the changes of B-type natriuretic peptide (BNP) in chronic heart failure (CHF) patients with diabetes mellitus (DM).

Methods In this study, 559 CHF patients were enrolled, of them 276 patients with coronary heart disease diagnosed by coronary angiography, 234 with hypertensive heart disease, and 49 with dilated cardiomyopathy. They were divided into non-DM group and DM group of 175 patients. NYHA cardiac function degree, and routine blood test, BNP, fasting blood glucose, serum creatinine were detected. Left ventricular ejection fraction and the average thickness of left ventricular wall were detected by echocardiography. The heart failure scale was evaluated for each patient with the age, hypertension, LVEF, LVW and NYHA degree. And the relationship curve of scale-BNP was constructed.

Results 1. The BNP was significantly higher in DM group than in non-DM group (1143.73 ± 94.0 vs 884.34 ± 57.0 , $p < 0.05$). 2. The relationship between the scale and BNP either in DM group or in no-DM was significantly positive. But the scale-BNP relationship curve was notably steeper in DM group. At the same scale, the levels of BNP were significantly higher in the DM than in the no-DM.

Conclusion As the CHF patients with DM have significantly higher BNP level, the DM history and fasting blood glucose should be taken into consideration when for evaluating the heart failure with BNP.

e0611 DIABETES IS A PROGNOSTIC RISK IN PATIENTS WITH DIASTOLIC HEART FAILURE

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Objective This study was designed to evaluate the prognostic impact of diabetes on diastolic heart failure (DHF) patients.

Methods We collected data on 359 consecutive patients with DHF (61 ± 19 [SD] years, female 65.5%), defined by the Framingham criteria (history of congestive heart failure (CHF) with left ventricular ejection fraction (LVEF) $\geq 50\%$), from 2004 to 2009. Diabetes was defined by oral glucose-tolerance test. The main outcomes were death and re-hospitalisation. Secondary outcomes were new myocardial infarction (MI) and percutaneous coronary intervention (PCI). The outcomes were compared in DHF with diabetes and without diabetes patients.

Results The study population presented 40.7% of DHF patients with diabetes. The rates of total death and re-hospitalisation were 31.5% (37.9% among men and 28.1% among women) and 42.3% (46.8% among men and 40.0% among women), respectively. The in-hospital mortality was higher among women than among men (20.0% vs 16.9%, $p < 0.05$). The rates of death and re-hospitalisation of DHF patients with diabetes were higher than that of DHF patients without diabetes (41.8% vs 24.4%, $p < 0.001$) and (50.7% vs 36.6%, $p < 0.001$). Furthermore, the mortality rate of DHF with diabetes patients increased with increasing courses of diabetes (17.6%, 35.4%, 57.1%, and 62.1% among patients who suffer from diabetes 1 to 5, 6 to 10, 11 to 15, and ≥ 15 years, respectively). The rates of new MI and PCI of DHF patients with diabetes were also higher than that of DHF patients without diabetes (26.7% vs 17.4%, $p < 0.01$) and (19.2% vs 8.0%, $p < 0.01$).

Conclusions These results indicate that the prognosis of DHF patients with diabetes is significantly poor. DHF patients with diabetes had a worse outcome than those patients without diabetes. Diabetes is an important modifiable risk factor in patients with DHF. Maybe strategies targeted at the prevention and therapy of diabetes can improve prognosis in DHF patients. And further investigation is needed.

e0612 CHANGES IN EXPRESSION LEVELS OF SERUM ACTIVIN A IN PATIENTS WITH HEART FAILURE AND ITS CLINICAL SIGNIFICANCE

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Objective The cytokine of the TGF- β superfamily called "activin A" regulates a wide variety of biological events. Recently, it is discovered that ACT-A has played an important role in the occurrence and the development of heart failure, such as promoting myocardial fibrosis and cardiac remodelling. In this paper, we detected the expression levels of serum activin A (ACT-A) in patients with heart failure and compared with brain natriuretic peptide (BNP) to discuss the changes in them and its clinical significance.

Methods Patients with CHF were divided into two groups according to the left ventricular ejection fraction (LVEF) and E/A value: LVEF $< 45\%$ group (Group HFREF, 62 cases), normal LVEF and E/A