GW25-e0841
The Investigation of the Method of Continuously transverse Scan of Fetal Heart
Li Yuntao, Li Jianguo, Pei Qiyuan
Peking University People’s Hospital

Objectives: By analyzing the detection rate of the typical sections that established in the anatomical image database of normal fetal heart cross-section during the 105 fetal heart scan transversely. And further investigate the feasibility of the screening method of continuously transverse scan for comprehensive cardiac evaluation.

Methods: After pretreating, 5 cases of normal fetal heart samples induced labor were cut transversely and serially, producing 60mm thick sections and then macthcastrophed by a digital camera to obtain serial images of the section. Then establish the database of anatomical cross-sectional images of fetal heart. The typical anatomical cross-sections that can display seteadly and reflect the characteristics of auricular vein connection, atrioventricular connection, ventricular artery connection and vessels of bottom of the heart were chose from the database. And simultaneously, 105 cases of fetal heart were scanned transversly by Fetal Echocardiography (FECG) during second trimester the detection rate of the typical sections above were analyzed.

Results: In the database of the 5 normal fetal hearts, the typical sections conformed to the standards mentioned above are the section of coronary sinus, four-chamber, outflow tract of left ventricle, outflow tract of right ventricle and the transverse-section of ductal arches and aortic arch. During the transverse scan of the 105 cases fetal heart examination, the detection rate of the sections above is 100%, except for the coronary sinus, with the presenting rate of 79%.

Conclusions: The anatomical cross-section image database of normal fetal heart provides the anatomical basis to transverse scan of fetal heart. The highly detection rate of the typical sections during the 105 cases fetal heart examination has further proved the feasibility of transversely scanning method.

GW25-e5115
Comparison of Characteristics and Outcome From Infective Endocarditis in Blood-culture Negative Endocarditis Versus Blood-culture Positive Endocarditis
Sun Xiaolu, Wang Guo-Gan, Yang Yan-Min, Yu Li-Tian, Tan Hai-Qiong, Zhu Jun, Zhang Jian
Department of Cardiology, State Key Laboratory of Cardiovascular Disease, Fuwai Hospital, National Center for Cardiovascular Diseases, CAMS&PUMC

Objectives: Diagnosis and management of blood culture-negative endocarditis constitute a formidable clinical challenge and a systemic approach is necessary for a successful outcome.

Methods: This study was designed to explore the general characteristics, treatment patterns, and outcomes of patients with IE in Fuwai hospital and compare these data between blood culture-negative endocarditis (BCNE) and blood culture-positive endocarditis (BCPE).

Results: Five hundred and eight patients were admitted to Fuwai hospital from January 2006 to December 2011. BCNE accounted for 43.3% (220 cases) of all IE cases. Patients with BCNE, compared with BCPE, were more likely to affect mitral valve (33.6% vs. 20.8%, P<0.001), more common in moderately severe regurgitation (57.3% vs.39.6%, P<0.01) and peri-valve complications (70% vs. 50.7%, P<0.01). Streplococcus viridans remained the predominant causative pathogen (27.6% of all IE). Patients with PVE, compared with NVE, and were more likely to have Coagulase negative staphylococcus (21.3% vs. 9.4%, P<0.05), staphylococcus aureus (16% vs. 8%, P<0.05) and fungi (16% vs.9.4%, P<0.05). Patients with BCNE, compared with BCPE, were more likely to have heart failure, severe sepsis, and operation (P<0.05). In-hospital mortality rate was 10.2%, and the 12-month cumulative mortality rate was 27%. Recurrence of IE was more common in BCNE patients during the 3-month follow-up. The incidence of combined end point events was no significant difference between two groups.

Conclusions: BCNE is associated with high moderately severe regurgitation, heart failure, peri-valve complications and recurrence rates.

GW25-e0615
Value of C-reactive protein in predicting adverse prognosis after cardiac valve replacement surgery in patient with Chronic Rheumatic Valve Disease
Lin Tsowyang, Yu Dungang
Southern Medical University Affiliated Guangdong General Hospital Guangdong General Hospital (Guangdong Academy of Medical Sciences)

Objectives: Aimed to evaluate the usefulness of C-reactive protein (CRP) in predicting the short-term clinical outcome after valve replacement surgery in patient with Chronic Rheumatic Valve Disease (CRVD) when compared to sedimentation rate (ESR).

Methods: 1135 Patients were screened and separated into two groups according to the in-hospital death during hospitalization: the survival group and the death group. The data of participants was collected with the use of standardized electronic case report form to determine the correlation between CRP and short-term clinical outcome compared to ESR.

Results: We represent 1081 patients survived and 54 patients died during hospitalization. The laboratory findings were: CRP 4.7±4.3 vs 9.0±3.5 mg/l (P<0.000) ; ESR 13.5±15.2 vs 22.7±10.2 mm/hr (P<0.000) . The CRP and ESR level before surgery represented significant difference with in-hospital death (P<0.000). And CRP (OR 3.67; 95%CI 1.35, 8.808; P=0.000), ESR (OR 1.512; 95%CI 1.061, 5.948; P=0.036) were independently associated with in-hospital death by multiple logistic regression analysis. Furthermore, during hospitalization, the CRP and ESR were significant difference with paravalvular or perivalvular leakage (PVL) and cardiac valve re-replacement (P<0.05).

Conclusions: We conclude that level of CRP and ESR had substantial relationship with the short-term clinical outcome. Integration of CRP and ESR may be valuable for risk evaluation in patients with CRVD.

GW25-e5129
Bicuspid aortic valve may be more common in China—a single-center study by echocardiographic screening
Wei Xin, Li Yitian, Chen Hao, Mao Fong, Yuan Chen, Liping, Tang Hong
Department of Cardiology, West China Hospital, Sichuan University, Chengdu, China

Objectives: Transcatheter aortic valve implantation (TAVI) in aortic stenosis patients with bicuspid aortic valve (BAV) is widely noted, but there are few data on the prevalence of BAV and its morphology in China. The purpose of the study is to investigate the prevalence of the BAV and the distribution of BAV types and the associated aortic abnormalities.

Methods: The 2D transhoracic echocardiographic database of the patients (more than 18 years) who referred to our hospital from June 2008 to March 2011 was analyzed retrospectively. The first examination recording was analyzed if the patients examined more than once during this period. The patient’s gender, age, number and morphology of the aortic valve leaflets, ascending aorta were obtained from the echocardiographic report.

Results: Of the 12040 subjects, the aortic valve lesion was observed in 8612 patients (7.2%), and the BAV was 543 patients (4.5%). Of the 543 BAV patients, patients combined with congenital heart disease, infective endocarditis and aortic dissection were 39 cases (7.3%) 34 cases (6.4%), and 2 cases (0.4%), respectively. In the residual 459 BAV patients, 63.2% was male and 36.8% female, 112 patients with severe aortic stenosis (24.4%), 60 patients with moderate aortic stenosis (13%), 36 patients with severe aortic regurgitation (7.8%) and 49 patients with moderate aortic regurgitation (10.7%). According to the age, the 459 pure BAV patients were divided into 3 groups: age<65 years, age of 40-64 years, age 18-39 years. The detection rate of severe aortic stenosis was highest in patients>65 years and lowest in patients with age 18-39 years.

Apart from the 29 cases without description of the aortic valve in the report, there were four types of the morphology of the aortic valve: left anterior-right posterior (172 cases: 37.5%); right anterior- left posterior (88 cases: 19.2%); left-right (128 cases: 27.8%); anterior-posterior (40 cases: 8.7%).Compared with tricuspid aortic valve, the ascending mitral valve with BAV had obvious dilation (39.7±27.4mm vs. 37.1±5.8cm, P<0.000), the same results were observed after matching the age and the degree of aortic stenosis.

Conclusions: BAV may be more common in China than the previous reports, and the male prevailed over the female. The diagnostic rate of the aortic stenosis of BAV was higher than the aortic regurgitation. The most common morphology of the BAV was left anterior-right posterior type. And the ascending aorta of BAV were larger than the tricuspid aortic valve.

GW25-e0768
Circulating level of miR-378 predicts left ventricular hypertrophy in patients with aortic stenosis
Li Chen, Chen Zhongxiu, Xu Yuanning, Li Yajiao, Hao Yang, Rao Li
Department of Cardiology, West China Hospital of Sichuan University

Objectives: MicroRNAs (miRs) play crucial roles in the regulation of left ventricle hypertrophy (LVH). However, few circulating miRs have been established as predictors of LVH in aortic stenosis (AS) patients. In this study, we aimed to investigate whether circulating levels of miR-1, miR-133, and miR-378 predict LVH in patients with AS.

Methods: One-hundred twelve moderate to severe AS patients without heart failure and 40 healthy controls were included in the study. All patients received routine trans-thoracic echocardiography examination. Left ventricular mass (LVM) was calculated by the American Association for Cardiovascular and Pulmonary Rehabilitation. AS patients were further divided into two subgroups according to their LVM index (LVH group: LVM index >105 g/m2 for male or >95 g/ m2 for female). Circulating levels of miR-1, miR-133 and miR-378 were measured using miRCyte miRNA qPCR detection kit and compared between groups. Data are shown as the means± standard deviation or median (25th and 75th IQR).

C194 JACC Vol 64/16/Suppl C   October 16–19, 2014   GW-ICC Abstracts/Cardiovascular Disease Clinical Research
Results: There were no significant differences in age, sex, blood pressure, heart rate or LVEF between the AS patients and controls. The LV mass index was dramatically higher in AS patients than controls (106.3 ± 27.5 vs. 67.4 ± 10.5 g/m², P < 0.001). Comparing with healthy controls, AS patients had significantly lower circulating levels of miR-1 (0.557 ± 0.202 vs. 0.711, P < 0.001), miR-133 (0.540 ± 0.214 vs. 0.947 (0.749-1.434), P < 0.001) and miR-378 (0.560 ± 0.736 vs. 0.944 (0.627-1.610), P < 0.001). In the AS group, patients with LVH had significantly lower miR-378 (0.539 (0.515-0.629) vs. 0.624 (0.549-0.930), P = 0.022) but not miR-1 and miR-133 compared with those without LVH. Linear regression analysis showed circulating miR-378 had strong correlation with left ventricular mass index (r = 0.283, P = 0.002) and logistic regression showed that lower miR-378 in patients was an independent predictor for LVH in patients with AS (P = 0.037, OR 4.110, 95% CI 1.086-15.558).

Conclusions: Circulating levels of miR-1, miR-133 and miR-378 were decreased in AS patients, and miR-378 predicts LVH independent of the pressure gradient. Further prospective investigations are needed to elucidate whether these circulating miRs affect clinical outcome.

GW25-0613 Clinical profile and predictors of outcomes of patients with mitral stenosis undergoing percutaneous transapical mitral commissurotomy
Edgar Timbol, Jaime Alfonso M. Aherrera, Gino Rei Quizon, Wilfredo Dee
Philippine General Hospital

Objectives: To present the clinical, echocardiographic, and hemodynamic profile of adult patients with MS who have undergone percutaneous transapical mitral commissurotomy from 2010 to 2013 at the Philippine General Hospital. Methods: We conducted a retrospective study of all adult patients with MS who have undergone percutaneous transapical mitral commissurotomy from 2010 to 2013 at the Philippine General Hospital. Results: The SK channels in patients with CAF were sensitive to intracellular calcium, but not to extracellular calcium. Whole-cell Conventional patch clamp techniques were used. The ionic currents were quantified using enzymatic dissociation with two-step method. The APD50 and APD90 were significantly longer in patients with CAF compared with those without CAF. Conclusion: SK channels are involved in the pathogenesis of CAF. Further studies are needed to elucidate the role of SK channels in the pathogenesis of CAF.

GW25-0215 The impact of Klotho protein and FGFB2 on degenerative heart valvular disease
Zhang Jianyu, Yu-Li Huang, Liang Su, Ding-Li Xu, Ding-Li Xu
Nanjing Hospital, Southern Medical University

Objectives: This study aimed to evaluate the expression of Klotho protein, Fibroblast growth factor 23 (FGFB2) in degenerative heart valvular disease (DHVD) patients and their role in valvular calcification.

Methods: 71 suspected DHVD hospitalized patients (aged >50 years) were enrolled between August 2012 and April 2013. Patients were divided into with valvular calcification (DHVD group) and without valvular calcification group (non-DHVD group) according to transthoracic echocardiographic examination. Serum calcium, phosphorus, iPTH, hs-CRP were detected. Klotho and FGFB2 were detected by ELISA. Patients were followed for death or recurrent hospital admission in 32 weeks.

Results: (1) There were 39 patients with DHVD. Patients in DHVD group were older than those in non-DHVD group (73.8 vs 69.4 years, P<0.03). There were no significant differences in coronary heart disease, hypertension, diabetes and smoking between DHVD group and non-DHVD group (P>0.05). (2) The survival rate were higher in non-DHVD group than that in DHVD group (73.8 vs 69.4 years, P=0.03) . There were no significant differences in age, sex, blood pressure, heart rate or LVEF between the AS patients and controls. The LV mass index was dramatically higher in AS patients than controls (106.3 ± 27.5 vs. 67.4 ± 10.5 g/m², P < 0.001). Comparing with healthy controls, AS patients had significantly lower circulating levels of miR-1 (0.557 ± 0.202 vs. 0.711, P < 0.001), miR-133 (0.540 ± 0.214 vs. 0.947 (0.749-1.434), P < 0.001) and miR-378 (0.560 ± 0.736 vs. 0.944 (0.627-1.610), P < 0.001). In the AS group, patients with LVH had significantly lower miR-378 (0.539 (0.515-0.629) vs. 0.624 (0.549-0.930), P = 0.022) but not miR-1 and miR-133 compared with those without LVH. Linear regression analysis showed circulating miR-378 had strong correlation with left ventricular mass index (r=0.283, P=0.002) and logistic regression showed that lower miR-378 in patients was an independent predictor for LVH in patients with AS (P=0.037, OR 4.110, 95% CI 1.086-15.558). The aortic annulus dimension (AAD) measured by RT 3D-TEE was larger in AS patients than controls (106.3 ± 27.5 vs. 67.4 ± 10.5 g/m², P<0.001). The maximum aortic valve velocity and mean aortic pressure gradient was decreased significantly after TAVI (5.2 ± 0.5 m/s vs. 2.7 ± 0.5 m/s, 67.2±15 mmHg vs.16±5 mmHg, respectively, P<0.05). The left ventricular ejection fraction (LVEF) increased by 3D TTE was increased (68.7±8.7% vs. 73.0±7.5%, P<0.05). And the left ventricular mass was improved (165.5±47.7 g/m² vs.144.0±39.2 g/m², P<0.05). No server AR and central AR was observed post-TAVI. 2.3% patients presented with moderate paravalvular AR, 30.2% patients with mild paravalvular AR, and 67.5% with trace or no paravalvular AR.

Conclusions: Echocardiography play an important role in pre-operative, intra-operative, and postoperative TAVI.

GW25-0116 Inhibitory Effects of Dronedaron on Small Conductance Calcium Activated Potassium Channels in Patients with Chronic Atrial Fibrillation: Comparison to Amiodarone
Li Miaoing, Huan Lan, Tao Li, Xianhong Ou, Guilan Chen, Yan Yang, Xiaorong Li Miaoling, Huan Lan, Tao Li, Xianhong Ou, Guilan Chen, Yan Yang, Xiaorong Zeng
Department of Electrophysiology, Institute of Cardiovascular Research, Lanzhou Medical College

Objectives: Small conductance calcium activated potassium channels (SK) were found closely related to Atrial Fibrillation (AF). Dronedarone is recently used for the treatment of AF. The aim of this study was to compare the inhibitory effects of dronedaron on SK channels in patients with AF and amiodarone.

Methods: The SK channels in patients with chronic AF were sensitive to intracellular calcium, but voltage-independent. Similar to amiodaron, dronedaron showed a concentration-dependent inhibitory manner on SK channels current. In patients with SR, dronedaron and amiodarone inhibited the SK channel current with IC50 values of 0.23 and 6.37 mM respectively, which were close to their therapeutic concentrations. In patients with CAF, the IC50 values were 0.09 mM with dronedaron and 2.1 mM with amiodarone. The inhibitory effects of dronedaron on SK channels were

GW25-0356 Prevalence of Calcific Aortic Valve Disease in Southern China: A retrospective echocardiographic study
Siza Ngenomo, Zeng Qingchun, Xu Zhihua, Zhi Dengji, Liu Changhua, Wang Peng, Xu Dingli
Southern Hospital, Southern Medical University, Guangdong Province, Guangzhou

Objectives: In order to identify the value of the echocardiography in pre-operative, intraoperative, and postoperative transcatheter aortic valve implantation (TAVI).

Methods: This study included 43 patients (27 males/16 females, average age was 74±7.2 years) with severe aortic valve stenosis who underwent successful TAVI in our hospital. The anatomy of the aortic valve, aortic annulus, ventricular function and other concern were assessed by transthoracic echocardiography (TTE) one week before TAVI and also by transesophageal echocardiography (TEE) during TAVI. After the deployment of the prosthesis, TEE was used to evaluate the position/stability of prosthesis, severity and mechanism of aortic regurgitation (AR), and to assess complications. One week post TAVI, TTE is sufficient to check the prosthesis, quantify the AR, and evaluate the changes of the ventricular function and left ventricle.

Results: The aortic annulus dimension (AAD) measured by RT 3D-TEE was larger and measured by 2D TEE, with no statistically significant difference. But the AAD measured by TEE was smaller than by RT 3D-TEE and 2D-TTE, with significant difference. The aortic annulus dimension in patients with significant aortic regurgitation was larger (68.2±8.7% vs. 75.0±7.5%, P<0.05). And the left ventricular mass was improved (165.5±47.7 g/m² vs.144.0±39.2 g/m², P<0.05). No sever AR and central AR was observed post-TAVI. 2.3% patients presented with moderate paravalvular AR, 30.2% patients with mild paravalvular AR, and 67.5% with trace or no paravalvular AR.

Conclusions: Echocardiography play an important role in pre-operative, intra-operative, and postoperative TAVI.