e0661 THE VALUE OF SERUM HOMOCYSTEINE LEVEL IN EVALUATION OF OXIDATIVE STRESS IN ATRIAL FIBRILLATION PATIENTS WITH HEART FAILURE

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Background Serum homocysteine, an intermediate, is produced during the metabolism of methionine. It has been related to the development of cardiovascular diseases, such as coronary heart disease, heart failure and so on. On the other hand, it is a long-time issue whether atrial fibrillation will affect the mortality among patients with heart failure, which is still controversial. We argue that atrial fibrillation at least will alter the status of oxidative stress in patients with heart failure.

Methods 124 (72 men, mean age 64.1 ± 10.5) patients from our hospital between January and June, 2010 were recruited. They were divided into four groups as follows: group 1, control, $n=40$; group 2, patients of heart failure (NYHA III-IV), $n=24$; group 3, patients of atrial fibrillation (NYHA I-II or over), $n=24$ and group 4, patients of atrial fibrillation with heart failure (NYHA III-IV), $n=36$. Homocysteine and C reactive protein (CRP) level were measured after hospitalisation.

Result There were no significant difference between the first three groups both in homocysteine (13.0 ± 2.8 vs. 13.8 ± 3.7 vs. 14.6 ± 7.2) and CRP (4.5 ± 4.0 vs. 6.8 ± 3.2 vs. 6.8 ± 5.1) level. The p values were 0.36, 0.63, 0.44 for homocysteine and 0.57, 0.98, 0.64 for CRP, respectively. While there was a huge difference between group 4 (homocysteine, 21.8 ± 6.5 ; CRP, 23.2 ± 13.1) and others groups, p value were all below 0.0001 for both of homocysteine and CRP.

Conclusion Our data indicated that the status of oxidative stress was much more obvious in heart failure patients (NYHA III-IV) with atrial fibrillation. In other words, atrial fibrillation and heart failure made patients highly stressed.

e0662 EVALUATION OF THE WHOLE AND REGIONAL MYOCARDIAL FUNCTION OF LEFT VENTRICLE IN DOGS WITH CONGESTIVE HEART FAILURE INDUCED BY FAST RIGHT VENTRICULAR PACING

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Objective Use the Doppler and strain rate imaging (SRI) to evaluate the systolic and diastolic function of the whole and regional ventricular myocardial in congestive heart failure dog models induced by rapid ventricular pacing, and in order to provide more mature and sound methods and parameters to assess the clinical tachyarrhythmia left heart function.

Methods 13 healthy mongrel dogs received rapid right ventricular pacing 4 weeks at the rate of 230 beats per minute, to establish congestive heart failure models. The diastolic diameters of the left ventricle (LVDd), left ventricular end diastolic volume (LVEDV), left ventricular end systolic volume (LVESV), ejection fraction (EF), diastolic flow velocity E and A wave, E/A, and E wave deceleration time (EDT) were measured before operation and after pacing of 4 weeks. Meanwhile, the peak systolic velocities were measured by Doppler quantitative tissue velocity image at four mitral ring sites (LV septum, LV lateral wall, LV inferior wall, LV anterior wall). At SRI condition, analysis was performed in basal and mid of septal and lateral walls in the apical 4-chamber view, in basal and mid of inferior and anterior walls in the apical 2-chamber view. All the walls SRI and SR curves were obtained, and the peak strain rate in

every cardiac cycle, such as peak systolic strain (PSS), and peak systolic strain rate (SRs), peak diastolic strain (PDS) were recorded.

Result 1. After 4 weeks, compared with prior pacing, the following parameters increased significantly ($p<0.01$): the LVDd, LVEDV, LVESV and Tei index. While LVEF of CHF dogs decreased significantly ($p<0.01$). 2. After 4 weeks, Compared with prior pacing, the peak systolic velocities at four mitral ring sites decreased significantly ($p<0.01$, or $p<0.05$). 3. After 4 weeks, Compared with prior pacing, the PSS and SRs in basal and mid of LV walls decreased significantly ($p<0.01$). While, the gradient of the PSS and SRs among the basal and mid of LV walls all disappeared ($p>0.05$). For example, the PSS in basal of LV walls decreased significantly ($p<0.01$): LV septum ($5.7 \pm 5.2\%$ vs $15.3 \pm 2.4\%$), LV lateral wall ($7.3 \pm 1.2\%$ vs $15.8 \pm 1.6\%$), LV inferior wall ($4.9 \pm 3.8\%$ vs $13.7 \pm 1.6\%$), LV anterior wall ($6.6 \pm 0.6\%$ vs $15.5 \pm 1.9\%$). The SRs in basal of LV walls decreased significantly ($p<0.01$): LV septum ($1.0 \pm 0.4 S^{-1}$ vs $2.4 \pm 0.6 S^{-1}$), LV lateral wall ($1.3 \pm 0.5 S^{-1}$ vs $2.3 \pm 0.5 S^{-1}$), LV inferior wall ($1.0 \pm 0.3 S^{-1}$ vs $1.8 \pm 0.4 S^{-1}$), LV anterior wall ($1.4 \pm 0.4 S^{-1}$ vs $2.6 \pm 0.7 S^{-1}$). 4. Compared with prior pacing, peak velocities of E and A waves, E/A and EDT showed no difference ($p>0.05$). However, the PDS in basal and mid of LV walls decreased significantly ($p<0.01$). While, the gradient of the PDS among the basal and mid of LV walls all disappeared ($p>0.05$). For example, the PDS in basal of LV walls decreased significantly ($p<0.01$): LV septum ($7.1 \pm 1.2\%$ vs $15.6 \pm 2.7\%$), LV lateral wall ($7.5 \pm 1.1\%$ vs $14.9 \pm 1.7\%$), LV inferior wall ($6.6 \pm 1.5\%$ vs $13.6 \pm 1.8\%$), LV anterior wall ($6.5 \pm 1.0\%$ vs $15.5 \pm 2.3\%$).

Conclusion After rapid ventricular pacing, congestive heart failure occurred in these experimental dogs, not only did the whole and regional myocardial systolic function decreased significantly, but also did to some extent the ventricle diastolic function changed. SR and SRI can be used to evaluate systolic and diastolic regional myocardial function in CHF dog models induced by rapid ventricular pacing and may provide more mature and sound parameters to assess the left heart function.

Clinical and Research Medicine: Cardiovascular Surgery

e0663 INITIAL EXPERIENCE OF SYNCHRONISED ELECTRICAL CARDIOVERSION FOR ATRIAL FIBRILLATION AFTER BIPOLAR RADIOFREQUENCY ABLATION MAZE OPERATION

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Background The purpose was to explore clinical experience of electrical cardioversion for atrial fibrillation (AF) after bipolar radiofrequency ablation Maze operation.

Methods From July 2006 to July 2009, 223 patients underwent bipolar radiofrequency maze operation for AF Out-patient were followed up after discharge on a regular basis. If effects of oral administration drugs such as digoxin, amiodarone and metoprolol were not obvious, with AF staying alive, patients should receive electrical cardioversion therapy. There were 13 cases underwent cardioversion therapy. After admission, ECG monitoring was needed. After intravenous anaesthesia using propofol, electrical cardioversion was carried out with dose of $1 \sim 2 J/kg$. Three times had they failed to turn to normal sinus rhythm (NSR), cardioversion be given up.

Results Four cases within 6 months after operation were given electrical cardioversion, three cases (75%) turned to NSR and one case (25%) was in AF instantly, the same until now. Of nine cases more than 6 months after operation, four cases (44.45%) turned to NSR instantly, two cases (22.22%) were still in AF, three cases

(33.33%) were in junctional rhythm, however, five cases (55.56%) were in NSR, three cases (33.33%) were in AF and one (11.11%) was in junctional rhythm by far. Of three cases more than one year after operation, two cases (66.67%) were in NSR, one case (33.33%) was in AF. The cardiac function (NYHA) of 84.62% was grade I and 15.38% grade II. No thrombo-embolism occurred. Sinus bradycardia occurred in two cases during hospitalisation. 13 patients were followed up, reviewing ECG and echocardiography. The overall results of follow-up of cardiac rhythm were NSR in eight cases (61.54%), AF in four cases (30.77%), and junctional rhythm in one case (7.69%). Within seven cases whose heart rhythm immediately were able to turn NSR, one case converted to AF later, the rate of maintenance of NSR was 85.71%, however, six patients could not be transferred into NSR instantly, only two cases (33.33%) turned into NSR. In NSR group left atrial diameter ECG (LAD) values reduced significantly after cardioversion ($t=6.9580$, $p=0.0000$), while LAD in AF group had no significant changes ($t=0.7308$, $p=0.4925$). The successful transfer rate was 71.43% in patients whose AF duration was less than 5 years and was 50% in patients whose AF duration was more than 5 years. There was no significant difference between the two AF duration groups ($X^2=0.174$, $p=0.6788$).

Conclusion Electrical cardioversion after bipolar radiofrequency maze operation was an effective option for the treatment of AF. The best time for cardioversion was within 6 months, which had high immediate success rate and be able to maintain a higher rate of NSR. Those who can be instantly converted to NSR, NSR maintenance rates are relatively high, but cannot be converted to NSR immediately who were less likely to NSR. With the prolonged time, successful rate of turning to NSR after electrical cardioversion reduced gradually. The effect of electrical cardioversion would be better if LAD were significantly reduced.

Related Subjects: Pulmonary Hypertension

e0664 **CLINICAL RESEARCH ON INFLUENCE FACTORS OF PULMONARY ARTERY SYSTOLIC PRESSURE DERIVED FROM TRICUSPID REGURGITATION BY ECHOCARDIOGRAPH**

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Objective To explore which factors influence PASP calculated by echocardiograph through tricuspid regurgitation pressure gradient.

Methods The retrospective study recruited 869 consecutive inpatients of Department of Cardiology in Peking University First Hospital, excluding patients who had acute myocardial infarction, pericardial effusion, congenital heart diseases, acute pulmonary embolism and organic tricuspid diseases. Their admission NYHA classification, N-terminal pro-B-type natriuretic peptide (NT-proBNP), echocardiographic and other clinic data were collected. Pulmonary artery systolic pressure (PASP) was derived from trans-tricuspid regurgitation pressure gradient (TRPG) by echocardiograph. We analysed the correlations between PASP and age, sex, renal function, cardiopulmonary diseases and echocardiograph parameters, using single factor analysis and multivariate linear regression analysis.

Results Among these patients, 658 were found to have TR, with a proportion of 75.7%. PASP was independently correlated to chronic obstructive pulmonary disease (COPD) (B (SE): 2.489 (1.121), $p=0.027$), chronic pulmonary embolism (B (SE): 9.282 (2.175), $p<0.001$), aortic stenosis (B (SE): 13.846 (3.545), $p<0.001$), aortic regurgitation (B (SE): 2.386 (1.091), $p=0.029$), mitral regurgitation (B (SE): 2.093 (0.934), $p=0.025$) and hypertension (B (SE): 1.560 (0.677), $p=0.022$), but not to other cardi-

ovascular diseases such as cardiomyopathy, atrial fibrillation, coronary heart diseases and renal function ($p>0.05$). PASP had independent correlation with both NYHA classification (B (SE): 3.701 (0.468), $p=0.002$) and NT-proBNP (B (SE): 2.235 (0.569), $p<0.001$). PASP was correlated to TR severity positively (B (SE): 5.801 (0.798), $p<0.001$), but not parallel to it. Age was an important predictor of PASP (B (SE): 0.081 (0.027), 95% CI (0.028 to 0.134), $p<0.001$), with an average increase in PASP of 0.81 mm Hg per decade.

Conclusions Tricuspid regurgitation is common in cardiac patients. PASP was independently correlated to COPD, chronic pulmonary embolism, left ventricular valve diseases and hypertension, but not to cardiomyopathy, atrial fibrillation, coronary heart diseases and renal function. PASP elevated with the increase of NYHA classification and NT-proBNP. It may play an important role in the evaluation of heart function. PASP should not be substituted by TR severity on the valuation of pulmonary circulation pressure. Age was an important predictor of PASP.

e0665 **CLINICAL FEATURE AND FOLLOW-UP RESULTS OF 60 PATIENTS WITH PULMONARY ARTERY HYPERTENSION**

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Objective To review the clinical feature of pulmonary artery hypertension (PAH) and analyse the results of following up.

Methods Clinical feature of 60 PAH patients who was diagnosed as PAH from Dec 2007 to Dec 2009 were reviewed retrospectively and those patients were followed up.

Results Six patients (three patients were CTD) died and six patients lost contact during following up. Those patients were divided into two groups based on pathogeny, Pulmonary Arterial Hypertension Associated With Connective Tissue Diseases (PAH-CTD) group ($n=23$) and the Pulmonary Arterial Hypertension Associated With Non-Connective Tissue Diseases PAH-Non-CTD) group ($n=25$). The former patient's condition obvious more critical than the latter and 20 patients using PAH targeted drug. In the course of follow-up, the condition had relieved somewhat in the two group patients, but the former still serious than the latter.

Conclusion Many complicated reasons can lead to PAH. The patients of Pulmonary Arterial Hypertension Associated With Connective Tissue Diseases had high morbidity and unfavourable prognosis. It is beneficial for PAH-CTD patient's administrated with targeted drug treatment and pay attention to follow-up visit.

Related Subjects: Cerebrovascular Disease and Stroke

e0666 **VASOPRESSIN AND EPINEPHRINE VERSUS EPINEPHRINE ALONE IN MANAGEMENT OF PATIENTS WITH OUT OF HOSPITAL CARDIAC ARREST A METAANALYSIS**

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Objective A combination of vasopressin and epinephrine may be more effective than epinephrine alone in cardiopulmonary resuscitation, but evidence is lacking to make a clinical recommendation. Our meta-analysis conducted to estimate the efficacy of vasopressin