METHODS 62 Patients, with grade NYHA IV heart function, had been poor effect by routine digitals, diuretic and nitratergic therapy, were recruited into our centre, then were divided into 2 groups randomly: rhBNP therapy group (n=31), milrinone therapy group(n=31). The frequency of breathing and heart beating, the grade of NYHA heart function, left ventricular ejection fraction (LVEF), and the centre venous pressure (CVP), of the patients were observed. The level of creatinine, alanine amonotransferase (ALT) and NT-proBNP were measured.

RESULTS The descending frequency of heart beating, the descending amplitude of the level of creatinine and NT-proBNP, of rhBNP group were higher than that of milrinone group respectively (25.6±8.4 beating/min, (18.5±7.3) beating/min (p <0.05); (68.7±21.1) ng / L , (46.4±10.9) ng / L (p <0.01)); (68.7±21.1). The elevation amplitude of the LVEF of rhBNP group also were higher than that of milrinone group respectively (18.1±4.7%,(6.5±3.3)% (p <0.05)). There were no difference in the altered levels of alanine amonotransferase, the descending frequency of breathing, and the descending grade of NYHA heart function, between two groups respectively (56.4±13.3) u/l, (47.8±12.6) u/l (p >0.05);(5.4±3.3) cmH2O,(4.0±2.8)cmH2O (p >0.05); (15.1±8.7)/min,(12.5±9.3)/min (p >0.05)(1.0±0.3),(1.0±0.4) (p >0.05).

CONCLUSIONS The rhBNP is efficacious and safe for acute decompensated ischemic heart failure.

GW26-e3982 Evaluating the effectiveness of carvedilol on the beta-adrenoreceptor density in patients with chronic heart failure
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OBJECTIVES The purpose of this study was to evaluate the effect of carvedilol on β2-adrenoreceptor density in erythrocyte membranes of post-MI patients with chronic heart failure (CHF).

METHODS The study included 56 post-MI male patients aged from 45 to 55 (mean age 51.2±4.6 years) years with CHF FCI-III; duration of post-MI period was 2.3±0.9 years. All the patients were divided into two groups according to the New York Heart Classification (NYHA) functional class (FC). Group 1 consisted of 30 post-MI patients with CHF FCI-II and Group 2 consisted of 26 post-MI patients with CHF FCI-III. The β2-adrenoreceptor density in erythrocyte membranes was determined using β-APM-AGAT kits. All patients received a carvedilol, nonselective beta blocker with β1-, β2- and β2-blocking properties, on the background of basic therapy (ACE inhibitors, spironolactone, nitrates). Initial carvedilol dosage was 3.125 mg and was titrated to achieve the target dosage of 25-50 mg twice a day. Mean carvedilol dosage was 23.8±4.6 mg/day in Group 1 and 33.65±6.9 mg/day in Group II. Exclusion criteria were diabetes, heart rhythm disorders, COPD, asthma, and acute stroke.

RESULTS In Group 1 patients, the initial erythrocyte β2-adrenoreceptor density was 27.7±14.4CU and exceeded the control value group by 2.4 times; in Group 2 patients it was 30.8±1.3CU and exceeded the control value by 2.9 times. Our studies have shown that therapy with carvedilol for 6 months led to a decrease of β2-adrenoreceptor density by 15.2% (P <0.05) in post-MI patients with CHF FC-II and by 22.7% (P <0.05) in post-MI patients with CHF FCI-III in comparison with the initial levels.

CONCLUSIONS In conclusion, in post-MI patients with CHF FCI-I, the increased β2-adrenoreceptor density, which is more pronounced in patients of Group 2. Long-term therapy with carvedilol reduces the β2-adrenoreceptor density in erythrocyte membranes of post-MI patients with CHF FCI-III.

GW26-e4531 The Clinical Observation of Cardiac Resynchronization Therapy in Patients with Chronic Heart Failure
Dongming Xie, Jiayuan Lin, Yihong Yang, Zhanglin Yan, Xiangzhong Liao, Xufeng Zhou, Jiumei Cai, GuoJiang Zhang, Shike Luo, Zuofeng Cao, Yuping Lin, Wenting Zhong, Xiangqun Chen, Haiting Chang, He Huang, Mei Zhong, Jinhui Zhu, Bei Wang, Ping Lai, Kun Xiao

OBJECTIVES To explore the clinical effects of Cardiac resynchronization therapy (CRT) in patients with chronic heart failure.

METHODS 6 cases which received CRT by cardiology department 2 from January 2014 to January 2015 were selected, 4 cases with dilated cardiomyopathy, 2 cases with ischemic cardiomyopathy; 5 cases were males and 1 case was female; 5 cases with left bundle branch block(LBBB);mean range was 52-70 years. Inclusion criteria:
1. after optimization drug treatment, the heart of New York (NYHA) levels were still at III to IV;
2. left ventricular end diastolic diameter (LVEDD)>55mm, left ventricular ejection fraction(LVEF)<35%;
3. the ventricular wall motion were incoordination;
4. QR S duration ≥120 ms;
5. sinus rhythm.

The medical history of the patients with heart failure were greater than 1 year, and the symptom of heart failure were still 6 existing after drug treatment. 5 cases NYHA class were III, 1 case was IV. The pacemaker wires were inserted in auricular dextra, right ventricular apex, Coronary sinus collateral or dexterramus through left subclavian vein. The implantation left ventricular pacing lead: To understand the direction of blood vessels by using coronary sinus imaging, and choose the best location according to the results of the pacemaker parameters and imaging. The pacemaker wires were installed in collateral or back of the top of sinus, the pacing thresholds were satisfied. Then, the right ventricle and right atrium wires were inserted, and to test the Pacemaker threshold and perception parameters. Lastly, the pacemaker wires were connected to pacemaker, and the pacemaker was implanted in the left side of pectoralis major., and sew up the incision. The AV period and V-V period were optimized after 1 week, 1 month, 3 month, 6 month, 12 month. To observe the cardiac function, QRS duration, LVEF, LVEDD after 6:4.3 month follow-up. Using SPSS13.0 software for statistical analysis, measurement data said with ‘x±s, and then compared by t-test, P <0.05 for statistical significance.

RESULTS The implantations of CRT were successful, and the NYHA class were great improvement from III - IV to I-II (P <0.05), the QRS duration was significant decreased from 149±12.4 ms to 117±2.8 ms (P <0.05), the LVEF was great improved from 0.28±0.06 to 0.48±0.06 (P <0.05), and the LVEDD was significant decreased from 69.9±6.4 mm to 56.9±7.7 mm (P <0.01).

CONCLUSIONS The cardiac resynchronization therapy combine drug treatment could improve cardiac function, alleviate clinical symptoms in patients with chronic heart failure, and improve the patient’s quality of life.

GW26-e0128 The Correlation of PI3K/Akt Signaling Pathway with the Occurrence of Cardiac Cachexia
Xin Zhang, Qinmei Fan

OBJECTIVES To explore whether the phosphoinositide 3-kinase / protein kinase B (PI3K/AKT) signaling pathway was related to the occurrence of isoproterenol (ISO) induced Cardiac Cachexia.

METHODS One hundred male Sprague-Dawey rats were randomly divided into ISO group and control group. In ISO group, the rats were administrated with ISO of 180mg/kg d via inguinal subcutaneous injection, once every other day, 2 times in all. After 4 weeks, the heart function of was measured by echocardiography. All rats were weighted before injecting ISO and after 4 weeks. According to the changes of body weight and the echocardiography results, ISO group were divided into cardiac cachexia group (n=29) and heart failure non cachexia group (n=40). The levels of total protein, triglycerides, cholesterol and blood glucose were detected by using automatic biochemical analyzer. The levels of insulin and Insulin-like growth factor-1 (IGF-1) in the serum of all rats were detected by enzyme-linked immunosorbent assay (ELISA); the expression of p85, p-Akt and NF-κB in the myocardial tissue were detected by immunohistochemical; the expression of caspase9 mRNA and Bcl-xl mRNA in the myocardial tissue were detected by reverse transcription polymerase chain reaction (RT-PCR).

RESULTS (1) The levels of LVEDD, LVESD increased significantly and LVEF, FS decreased significantly in ISO group(P <0.05) (2) the levels of total protein, glucose decreased significantly and tri-glycerides, cholesterol increased significantly in ISO group compared with control group (P <0.05) (3) the levels of insulin in cardiac cachexia group(30.85±1.90 μIU/mL) was significantly higher than in the heart failure non cachexia group(9.56±5.33 μIU/mL) and control group (27.45±5.36 μIU/L) (P <0.05), (4) the levels of IGF-1 in cardiac cachexia group(30.85±1.90 μIU/mL) was significantly higher than in the heart failure non cachexia group(9.56±5.33 μIU/mL) and control group (27.45±5.36 μIU/L) (P <0.05).
cachexia group(374.44±13.57 ng/ml) was lower than in the heart failure non cachexia group (421.80±9.14 ng/ml) (P < 0.05), (5) the expression of P53, P-Akt and NF-xB in cardiac cachexia group was lower than in the heart failure non cachexia group (P < 0.05) and control group (P < 0.05), but the heart failure non cachexia group was higher than the control group (P < 0.05); (6) the expression of caspas9 mRNA in cardiac cachexia group(38.02±0.02) was higher than in the heart failure non cachexia group(0.49±0.04) and control group(0.62±0.07) (P < 0.05), (7) the expression of Bcl-xl mRNA: in cardiac cachexia group (1.39±0.20) was lower than in the heart failure non cachexia group(8.03±0.28) and control group(7.80±0.15) (P < 0.05).

CONCLUSIONS (1) There were insulin and GH resistance in the heart failure cachexia patients, (2) P3K/Akt signal transduction pathways was activated by phosphorylation in heart failure, which is play a protective effect on the heart when combined with cachexia. and the expression of P53, P-Akt and NF-xB were decreased, illustrate that P3K/Akt signal pathway was restrained, which eventually lead to cell apoptosis. (3) P3K/Akt signal transduction pathway may be a new therapeutic target in cardiac cachexia.

GW26-e0429
Effect of Eplerenone on Plasma TGF-β1 level in Patients with Chronic Heart Failure
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OBJECTIVES Renin - angiotensin - aldosterone system (RAAS), by affecting the nervous hormone levels, involves in the development of chronic heart failure(CHF). Of interest, for patients with moderate to severe chronic heart failure, on top of angiotensin-converting enzyme inhibitors (ACEI) and beta blockers, eplerenone administration will further reduce the total mortality. However, the therapeutic mechanism for CHF with eplerenone administration is not yet fully understood.

METHODS Renin - angiotensin - aldosterone system (RAAS), by affecting the nervous hormone levels, involves in the development of chronic heart failure(CHF). Of interest, for patients with moderate to severe chronic heart failure, on top of angiotensin-converting enzyme inhibitors (ACEI) and beta blockers, eplerenone administration will further reduce the total mortality. However, the therapeutic mechanism for CHF with eplerenone administration is not yet fully understood.

RESULTS Compared with conventional treatment, LVEF and 6-minute walk test(6-MWT) distances increased, while LVP, LVEDD, IVS, TGF-β1 level, BNP level and the blood pressure all reduced in patients received eplerenone administration (P < 0.05), TGF-β1 levels were inversely correlated with LVEF, and positively correlated with BNP level (P < 0.05).

CONCLUSIONS Eplerenone can reduce plasma TGF-β1 level by reversing cardiac remodeling and improve function in chronic heart failure patients.

GW26-e4402
Silencing microRNA-155 reduces LPS-induced cardiac apoptosis via targeting pea15a
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OBJECTIVES Sepsis-related cardiac dysfunction is characterized by inflammation and metabolic repression. microRNAs, a small non-coding RNA, can bind to mRNA 3'-UTR of target genes mRNA. MiR155 is up-regulation as a continual feature of the mammalian inflammatory response. In this study, we tested the hypothesis that miR155 regulates in heart dysfunction with sepsis.

METHODS E.coli lipopolysaccharide (LPS)(5mg/kg) was administered to induce a sepsis-induced cardiac dysfunction model within 5-7 h. Cardiac function was assessed by Echocardiography 5 ~ 6h post-LPS administration. Myocardium were obtained within 7 ~ 9h after LPS treatment for gene expression and protein analysis. A systematic analysis of cardiac miRNA profiles using an established miRNAarray was performed to assess dys-regulated miRNAs in sepsis-induced cardiac dysfunction. To forced expression of miR155, miR155 agomirs were injected in the tail vein of C57Bl/6J mice on 3 consecutive days with a total of 30 mg/kg agomir and injection of miR155 in vivo by 80 mg/kg 155 antagoniser followed by LPS administration.

RESULTS LPS induced reduction 15% in Fractional shortening (%FS) and 25% in ejection fraction (%EF). Expression of miR155 was increased by 2 fold. Over-expressing of miR155 with systemic delivery of agomir led to 5% decrease in FS and 10% in EF as compared to scramble control. Aggravation of the LPS induced cardiac dysfunction by miR155 agomir is not associated with alteration in inflammation or cardiac metabolism. MiR155 agomir increased LPS induced myocardium apoptosis and increased ratio of Bax/Bcl-2 at the protein level. Deficiency of miR155 markedly rescued the LPS induced heart failure and apoptosis. In vivo, western blotting found that over-expression of miR155, and to significantly inhibition of pea15a in mice. Using bioinformatics analyses and validated luciferase reporter assays, Pea15a was identified as a novel miR155 target. Finally, we observed that critically ill patients with sepsis had increased levels of miR155 compare with healthy control as well.

CONCLUSIONS The present study demonstrated that miR155 regulates sepsis-related cardiac apoptosis by target gene Pea15a. Finally, our results identify inhibition of miR-34a as a potential therapeutic strategy to improve sepsis -induced heart failure.

GW26-e4801
The correlations between iron metabolism and myocardial energy expenditure in patients with chronic heart failure
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OBJECTIVES Chronic heart failure (CHF) is a major public health burden worldwide and is associated with high morbidity, mortality and cost. Recent study demonstrated that iron metabolism and myocardial energy expenditure (MEE) were altered in CHF patients. In this study, we aimed to analyze the effects, clinical significance, and possible correlations of iron metabolism on MEE in patients with CHF.

METHODS We recruited 96 CHF patients [age: 67.4±11.5 years, males: 61.5%, New York Heart Association (NYHA) class II/III/IV: 4/5/6/15] from the Cardiology Department of Nanfang Hospital, Southern Medical University from January 2014 to January 2015. The concentrations of serum hemoglobin, Fe, total iron-binding capacity, transferrin saturation, transferrin, soluble transferrin receptor, ferritin, and Pro-BNP were evaluated. Echocardiography was used to assess LA, LV, PWTs, LVIDs, LVIDd, LVEF, LVFS, and MEE. Iron deficiency was defined as ferritin < 100 ng/mL or 100-300 ng/mL with transferrin saturation < 20%.

RESULTS The patients were divided into iron-deficient and iron-sufficient groups; the incidence of iron deficiency in all subjects was 38.5%. The differences of demographic characteristics (age, sex and BMI), and BNP and HGB concentrations in two groups were similar (P > 0.05). Interestingly, MEE was significantly higher in the iron-deficient group [64.983 (51.555 to 78.200) cal/min vs. 40.176 (25.346 to 56.914) cal/min, P < 0.001]. Similarly, MEE in patients with NYHA classes II and III was significantly higher in the iron-deficient group [55.6 ±11.4 cal/min vs. 39.7±17.5 cal/min, P < 0.002; 63.6±16.9 cal/min vs. 42.6±21.0 cal/min, P < 0.002]. Bivariate analysis confirmed that MEE was significantly correlated with ferritin (r = -0.406, P < 0.001), transferrin saturation (r = -0.307, P < 0.002), Pro-BNP (r = -0.333, P < 0.001), NYHA class (r = -0.456, P < 0.001), LVEF (r = -0.477, P < 0.001), LVSD (r = -0.657, P < 0.001), LV (r = -0.770, P < 0.001), and LVVDI (r = -0.748, P < 0.001). Multiple linear regression analysis on the above variables showed that iron deficiency, higher LVSD, NYHA class, and lower LVFS predicted higher MEE (r = -0.748, P < 0.001).

CONCLUSIONS Iron deficiency may play an important role in the disorders of MEE in CHF patients, regardless of baseline HGB concentrations.