GW26-e3971
Relation of Inflammatory Status to Reverse Remodeling in Patients Undergoing Cardiac Resynchronization Therapy
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OBJECTIVES
Cardiac resynchronization therapy (CRT) improves heart function and reduces all-cause mortality in patients with chronic heart failure (CHF). However, there are still about one third patients, who fulfilled the indications of guidelines, unrespond to CRT. The inflammatory injury is the major reason for CHF which could lead to myocardial damage and remodeling. High sensitivity C reactive protein (hs-CRP), as a marker of inflammation, would change even with minor inflammatory reaction, and is an independent predictor for adverse prognosis in CHF. The aim of this study is to better clarify the effects of CRT on inflammatory status by evaluating hs-CRP and left ventricular remodeling in patients with CHF who underwent CRT.

METHODS
A total of 92 patients who underwent CRT and followed up regularly were enrolled in this study (since September 2006 to October 2014). Clinical, biochemical and echocardiographic information were recorded before and after 6 months of CRT. CRT response was defined as the reduction in end-systolic left ventricular volume(LVESV) more than 15%. Moreover, we compared left ventricular ejection fraction, NYHA heart function classification, left ventricular end-systolic and end-diastolic volume and serum hs-CRP before CRT and at follow up. Spearman rank analysis was used to assess the correlation between the changes of serum hs-CRP and end-systolic left ventricular volume. Logistic regression analysis was performed to investigate associations of response category with baseline hs-CRP and other clinical indexes.

RESULTS
After CRT implantation, left ventricular ejection fraction significantly increased (28.57±7.30 % vs. 40.08±14.91, P < 0.05), and NYHA heart function classification changed (2.75±0.76 vs. 2.00±0.31, P < 0.05). After 6 months, there were 51(55.4%) CRT responders, in which 38 cases with LVESV decreased >30%; and 41(44.6%) CRT nonresponders, in which 20 cases with LVESV increased. Compared with CRT nonresponders, there were more patients with complete left bundle branch block (63.7% vs. 41.4%, P < 0.05) decreased hs-CRP [2.51(1.15-4.35)mg/L vs. 3.76(1.48-7.29), P < 0.05] and intraventricular mechanical dysynchrony (P < 0.05) in CRT responders. But there were no significant differences in other clinical, biochemical and echocardiographic indexes (P > 0.05). After CRT, hs-CRP significantly decreased, especially in CRT responders[0.4 (0-1.78)mg/L vs.1.5 (0.33-3.35)mg/L, P < 0.05]. The changes of hs-CRP correlated with the reduction in LVESV at follow-up (r=0.426; P < 0.01). In Logistic regression analysis, CRT response was associated with increased baseline hs-CRP (OR 0.764, P = 0.010, 95% CI 0.622-0.938).  

CONCLUSIONS
The reduction of inflammatory status seems to be linked with reverse remodeling in patients with HF who underwent CRT. Baseline hs-CRP predicted LVEF response in CRT-treated patients.

GW26-e3991
Study on the correlation of asymmetric dimethylarginine and degree of dyspnea in patients with chronic heart failure
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OBJECTIVES
To evaluate the correlation of the level of ADMA in patients with congestive heart failure and the degree of heart failure.

METHODS
Choose 45 patients with heart failure who reach the standard of Framingham admitted in the first hospital affiliated Harbin medical university between 2011.03-3.03. Among them ischemic cardiomyopathy group 25 cases, idiopathic dilated cardiomyopathy group 20 cases and control group 30 cases. Acquired venous blood 5 mL from all the patients in the second day of admission after fasting. The plasma ADMA measured by normal performance liquid chromatography mass spectrometry. Left ventricular ejection fraction (LVEF) were measured by two-dimensional echocardiography. Compared serum levels of ADMA in the three groups and estimated the correlation serum levels of ADMA with their LVEF.

RESULTS
We found that ADMA was significantly elevated in patients with heart failure compared to normal control (p < 0.001 for both). There was no difference between ischemic and idiopathic groups in ADMA (p > 0.05), there was an inverse correlation between EF and serum ADMA level (p < 0.01).

CONCLUSIONS
ADMA was significantly elevated in patients with heart failure and there was an inverse correlation between EF and serum ADMA level. There was no correlation between ADMA and etiology-specific heart failure.

GW26-e2250
Prognostic Role of Hypothyroidism in Heart Failure: a Meta-analysis
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OBJECTIVES
Hypothyroidism is a risk factor of heart failure (HF) in the general population. However, the relationship between hypothyroidism and clinical outcomes in patients with established HF is still inconclusive.

METHODS
We conducted a systematic review and meta-analysis to clarify the association of hypothyroidism and all-cause mortality as well as cardiac death and/or hospitalization in patients with HF. We searched MEDLINE via PubMed, EMBASE and Scopus databases for both grey and published clinical outcomes in patients with HF published up to the end of Jan 2015. Random-effects models were used to estimate summary relative risk (RR) statistics.

RESULTS
We included 13 articles that reported RR estimates and 95% confidence intervals (95% CIs) for hypothyroidism with outcomes in patients with HF. For the association of hypothyroidism with all-cause mortality and with cardiac death and/or hospitalization, the pooled RR was 1.44 (95% CI 1.29-1.61) and 1.37 (95% CI: 1.22-1.55), respectively. However, the association disappeared on adjustment for B-type natriuretic protein level (RR 1.17, 95% CI: 0.90-1.52) and in studies of patients with mean age < 65 years (RR 1.23, 95% CI: 0.88-1.76).

CONCLUSIONS
We found hypothyroidism associated with increased all-cause mortality as well as cardiac death and/or hospitalization in patients with HF. Further diagnostic and therapeutic procedures for hypothyroidism may be needed for patients with HF.

GW26-e3912
Clinical analysis of inhaled furosemide relieving dyspnea in patients with chronic heart failure
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OBJECTIVES
1. To observe the efficacy of inhaled furosemide relieve dyspnea in patients with chronic heart failure, correct hypoxemia; 2. To preliminary evaluate the the safety of inhaled furosemide when applied to the treatment of chronic heart failure patients.

METHODS
The study enrolled 60 patients with heart failure, recorded the subjects’ breathing rate, heart rate, mean arterial pressure, and plasma N-terminal brain natriuretic peptide (NT-pro BNP), arterial blood gas analysis (including pH, PaCO2, PaO2, HCO3- and SaO2). In addition, subjects were asked to evaluate their degree of dyspnea (0 – no dyspnea, 10 – most severe degree of dyspnea). Arterial blood gas was collected through the radial artery or femoral artery. In this randomized, double blind, placebo controlled trial, subjects were divided into a control treatment group and the control group, after conventional treatment in both groups were 4ml inhaled furosemide (20mg /2ml) once a day, or 4ml saline, each once a day. Recording respiratory rate, arterial blood gas analysis, patients were asked to evaluate their degree of difficulty breathing again; NT-pro BNP was collected in the fifth day after the treatment.

RESULTS
1. There were significant changes in the respiratory rate of the two groups (P < 0.05) after the first day of administration within one hour change. There were significant changes in respiratory rate in those groups at the end of the fifth day of administration (P < 0.05). There were significant changes in dyspnea score after the first day of administration within one hour in both groups (P < 0.05). There were significant changes in dyspnea score at the end of the fifth day of administration in both groups (P < 0.05), but There were no significant changes between two groups (P > 0.05).
2. There were no significant changes in PH, PaCO2, SaO2 after the treatment in experimental group (P > 0.05). There were significant changes in PaO2, NT-pro BNP, (P < 0.05).