3. There were no significant changes in PaCO$_2$, PH, HCO$_3$-, SaO$_2$ in the control group (P > 0.05; there were significant changes in NT-pro BNP (P < 0.05).

4. There were significant changes in PaO$_2$ in both groups after the experiment (P < 0.05), there were no significant changes in NT-pro BNP, PH, PaCO$_2$, HCO$_3$-, SaO$_2$ group (P > 0.05).

5. There were no significant changes in Na$^+$, K$^+$, Cl$^-$, Ca$^{2+}$ concentration and creatinine.

CONCLUSIONS This study shows that inhaled furosemide for heart failure patients improve hypoxemia and dyspnea have a role in the degree of reduction. To reduce cardiac wall tension, decreased plasma levels of NT-pro BNP is not helpful. Study of inhaled furosemide serious adverse event occurred, it has a good safety.

GW26-e5448
A simple score model to predict 30-day in-hospital mortality in patients with acute decompensate heart failure at admission only by patients’ age and comorbidities
Yamin Cao, Yanming Chen, Xingli Wu, Yusheng Zhao
Chinese PLA General Hospital

OBJECTIVES More and more patients with acute decompensate heart failure (ACHF) appear in hospitals. How to estimate in-hospital mortality and stratify these patients become very important, but simple and easy to handle approaches are few. The article tried to develop a practical score model.

METHODS A total of 6,949 patients were identified from the hospital database. The patient whose hospital stay was over less than 30-day were included. The basic characters, all kinds of co-morbidities and all cause deaths in hospital within 30-day were recorded from the patients’ medical file.

All co morbidities that co-existed in patients were collected. Percentages were reported to describe categorical variables, mean ± SD to describe the continuous variables. The variables that associated with 30-day in-hospital death were pick out by univariate analysis from the candidate variables, and were included in a multiple logistic regression model as predicting covariates. Age and nine co morbidities were correlated with the 30-day in-hospital death and became valuable predictors. The basic characters, all kinds of co-morbidities and all cause deaths in hospital within 30-day were recorded from the patients’ medical file.

GW26-e2326
The effect of serum N-terminal pro-brain natriuretic peptide (NT-proBNP) and QTc interval dispersion in the diagnosis of CHF and evaluation of heart function
Ruhua Wang, Yanfen Li, Yuhong Huang, Lanjun Sun
The Second Affiliated Hospital of Tianjin University of Traditional Chinese Medicine

OBJECTIVES By observing the relationship between serum N-terminal pro-brain natriuretic peptide (NT-proBNP) concentration, QTc interval dispersion (QTcd) and the NYHA heart function classification, left ventricular ejection fraction (LVEF), we study the effect of NT-proBNP and QTcd on the diagnosis of CHF and evaluation of heart function.

METHODS We select 84 hospitalized patients with CHF disease and 60 healthy controls from 2014 March to December in our hospital. The serum NT-proBNP concentration was measured by immune chemiluminescence method. QTc interval was detected by Mortara 12 lead ECG ELI250, LVEF was determined by America HP5500 type color echocardiography, heart function in patients with CHF was classified according to the NYHA.

RESULTS The mean serum NT-proBNP concentration in patients with CHF (323.38 ±16.41) pg/ml and QTc interval dispersion (42.84 ± 4.16) ms was significantly higher than that in healthy controls (44.87 ±6.20) pg/ml, 23.00 ±1.00 ms, there were statistically differences P < 0.01. There was a positive correlation between serum NT-proBNP concentration and QTc interval dispersion (r = 0.817, P < 0.01). There was a significant positive correlation between NYHA classification and QTc interval dispersion (r = 0.810, P < 0.01). There was a significant negative correlation between QTc interval dispersion (r = 0.770, P < 0.01), r = 0.810, P < 0.01). The analysis of effects of NT-pro BNP, QTcd in the diagnosis of heart failure by employing the receiver operating characteristic (ROC) curve led to the following conclusions: area under the curve AUC = 0.723, the specificity and confidence interval were 0.737-0.875 and 0.630-0.822, respectively with the existence of statistical difference. The diagnostic cutoff value respectively was 128.45 pg/ml, 42.3 ms; the Youden index which was the highest, respectively was 0.807, 0.706.

CONCLUSIONS NT-pro BNP and QTc interval dispersion can be objective and accurate assessment of heart function in patients with chronic congestive heart failure. NT-pro BNP and QTc interval dispersion have ideal sensitivity and specificity in diagnosis of heart failure NYHA classification and left ventricular systolic dysfunction and can be used as a laboratory marker of clinical diagnosis and heart failure degree evaluation.

GW26-e2439
Based on clinical studies of plasma NT-proBNP for the diagnosis of diabetic heart failure optimal cutoff value observed
Qixia Heng
Zhongmou County People’s Hospital

OBJECTIVES To investigate the relationship between high blood pressure in patients with plasma NT-proBNP and diabetic heart
failure clinical severity, and echocardiographic evaluation of the relationship between the severity of diastolic dysfunction, and get plasma NT-proBNP in the diagnosis of diastolic heart failure most good community values.

**METHODS** The study is outpatient or inpatient treatment of non-systolic heart failure in patients with hypertension 61 cases were divided into three groups: no clinical signs and symptoms of heart failure, heart failure with a history of coronary artery disease, and non-systolic heart failure without diastolic dysfunction group I; clinical None signs and symptoms of heart failure, echocardiographic diastolic dysfunction group II; clinical signs and symptoms of heart failure, echocardiographic diastolic dysfunction group III. In 20 heart failure control group. All patients enrolled in clinical data are collected to determine the presence or absence of heart failure, and cardiac function NYHA classification. 24 hours of admission or treatment echocardiography expert to determine whether the diastolic dysfunction and diastolic function of the extent of becoming divided into four weight: I level (normal diastolic function), grade II (impaired relaxation), III grade (pseudonoization filling), grade IV (restrictive filling). Admission or treatment plasma NT-proBNP concentrations within 24 hours. Comparison between different experimental groups, between different classification of diastolic function, plasma NT-proBNP levels between different NYHA class; evaluate the relationship between echocardiographic indices of diastolic function and plasma NT-proBNP for; were constructed NT-proBNP diagnostic diastolic dysfunction and diastolic ROC curve of heart failure, and were the best diagnostic cutoff value.

**RESULTS** The area under the ROC curve of plasma NT-proBNP diagnosis of diastolic heart failure (AUC) was 0.886 (95% CI 0.818-0.954, P = 0.000). Plasma NT-proBNP when 112.45pg/ml, diastolic heart failure diagnostic sensitivity 94.0%, specificity 81.8%, positive predictive value of 72.7%, negative predictive value of 94.6%.

**CONCLUSIONS** The plasma NT-proBNP for diagnosis of diastolic heart failure is valuable.

GW26-e3591

**Predicting Value of Biomarkers for Short-Term Outcomes in Acute Heart Failure**

Rongrong Gao, Xinli Li
The First Affiliated Hospital of Nanjing Medical University

**OBJECTIVES** B-type natriuretic peptide (BNP) and N-terminal pro-B-type natriuretic peptide (NT-proBNP) are increasingly being used to guide the management of acute heart failure (AHF) patients. This study aims to explore some new biomarkers providing predicting values for short term prognosis in patients with AHF.

**METHODS** A total of 206 patients with AHF were enrolled and followed for 3 months. Baseline level of complete blood count, complete biochemistry, D-dimer and NT-proBNP were measured at admission or the following morning. Primary endpoints of the study were cardiovascular (CV) events, defined as cardiac death and/or readmission for AHF.

**RESULTS** During the 90-day follow-up period, 15 patients died and 10 patients were re-hospitalized due to worsening of heart failure (12.14%). Red cell distribution width (RDW), D-dimer and NT-proBNP were significantly higher in the patients who had a CV events at the 90-day (p < 0.001). The area under receiver operating characteristic (ROC) curve (AUC) of NT-proBNP, D-dimer and RDW for predicting CV events by 90- day was 0.806, 0.887 and 0.754. Kaplan-Meier survival curve for 90-day CV events showed that patients with a D-dimer level > 1.1mg/dL and NT-proBNP > 2262.09pg/mL were at high risk (p < 0.001) for short-term outcomes of AHF.

**CONCLUSIONS** D-dimer could be as a new biomarker combined with NT-proBNP for predicting early prognostic value to cardiovascular events of AHF.

GW26-e4381

**Resveratrol protects the heart from sepsis without systemically anti-inflammatory effect**

Tao Bai,1,2 Fan Wang,1 Lu Cai,1 Yang Zheng1
Cardiovascular Center, The First Hospital of Jilin University, Changchun, China; 1KCHRI of Department of Pediatrics, the University of Louisville, KY, USA; 1Department of Infective Disease, People’s Hospital of Jilin Province, Changchun, China

**OBJECTIVES** Resveratrol can protect the heart from sepsis, but the detailed mechanism remains unknown; therefore, we try to explore the mechanism.

**METHODS** FVB and C57BL/6J male mice (age: 8-12 weeks; body weight: 20-25g) were subjected to lipopolysaccharide (LPS) injection at 6 mg/kg to set up a sepsis model. One study included 5 groups: Group 1 (control mice); Group 2 (intraperitoneal injection with LPS); Group 3 (treated with resveratrol only for 3 days); Group 4 (treated with resveratrol for 3 days before LPS); Group 5 (treated with LPS and resveratrol at same time). These mice were sacrificed at 48 h after LPS treatment. The dose of resveratrol was 20 mg/kg/d. Serial echocardiograms were performed to assess cardiac function.

**RESULTS** In both strains of mice, LPS injection could significantly decrease the left ventricular EF% from 6 to 48 h. For resveratrol prevention study, we found that tumor necrosis factor alpha (TNF-α) levels in plasma and heart tissue were significantly increased at 6 h after LPS injection in groups 2, 4, and 5, compared to the groups 1 and 3. Among the groups 2, 4 and 5 there was no significant difference. CD45 is a pan-leucocyte marker, heart wax section immunohistochemistry staining for CD 45 shows no difference in all groups. Using immune blot and ELISA to assess the ratio of cleaved caspase 3 to caspase 3 and plasma level of troponin I, markers for cardiac cell apoptosis and injury, respectively, showed no difference in all groups, which indicates that cardiac dysfunction in sepsis is not due to cardiac cell loss. Time-course comparison between FVB and C57BL/6J mice, we found that C57BL/6J mice was more susceptible to FVB mice since the former showed a significant decrease (more than 50%) in EF% while FVB mice showed about 40% decrease in EF%. However, cardiac dysfunction of C57BL/6J mice showed a faster recovery from 6 to 24 h compared to FVB that recovered from 6 to 48 hours.

**CONCLUSIONS** Resveratrol protection of the heart from sepsis is not due to its prevention of LPS-induced inflammation. Since resveratrol is a multiple bioactive natural compound, we should focus other mechanisms to explore how resveratrol protect heart from sepsis in the future studies.

GW26-e5471

**The Correlation between Cardiac function in patients with different classification levels of serum NT-proBNP and cardiac function**

Zhiqing Fan,1 Pinghui Sun1
1Department of Cardiology, Daqing Oil Field General Hospital, China; 2Jilin University college of public health statistics teaching and research, Changchun, China

**OBJECTIVES** To observe correlation between the standard of N-terminal pro-B-type natriuretic peptide (NT-proBNP) and cardiac function in different NYHA classification, LVFE and LVED.

**METHODS** For the 83 patients of heart failure in hospital, to assay their NT-proBNP of blood serum by enzyme-linked immunosorbent assay (ELISA) and determine their LVFE and LVED by UCC. To analyse the correlation of patients’ NT-proBNP, the different cardiac functional grading and the indexes above-mentioned.

**RESULTS** (1) Different NYHA cardiac function classification levels of serum NT-proBNP levels was significantly. Its level is positively correlated with cardiac function. (2) NT-proBNP is significantly correlated with LVFE and positively correlated with the LVED.

**CONCLUSIONS** NT-proBNP measurement is one of the methods of effective assistance in clinical diagnosis of heart failure, on the whole reflect the severity of heart failure.

GW26-e0191

**Altitude difference of HMGB1, Fetuin-A in the patients with congestive heart failure and effects on ventricular remodeling**

Aiqi Xi, Guofeng Li
The People’s Hospital of Onghai Province

**OBJECTIVES** Inflammation and dystrophic calcification have been associated with cardiovascular disease (CVD) and chronic heart failure (CHF), changes in pathophysiological functions are reported during sea level altitude; however, Few study have explored altitude difference(2260m, 3300m) of change levels of serum high mobility group box 1 protein (HMGB1), Fetuin-A in the patients with congestive heart failure and effects on ventricular remodeling. The aim of the present study was to evaluate the effect the altitude difference explore on HMGB1, Fetuin-A, and to study the relationship between changes of HMGB1, Fetuin-A and left ventricular mass index (LVMi), mean wall stress (MWS) and cardiac function.

**METHODS** A total of 129 consecutive patients with CHF with matched age and sex were enrolled, and CHF patients were divided into high altitude group (3300m) (n = 62) and moderate altitude group (2260m)