HEART FAILURE

GW26-e4474
Effect of carvedilol on adenylyl cyclase activity in erythrocyte membranes in patients with chronic heart failure
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OBJECTIVES
The aim of the study was to evaluate the effect of carvedilol on adenylyl cyclase (AC) activity in erythrocyte membranes in patients with chronic heart failure (CHF).

METHODS
There were studied 56 patients aged from 45 to 55 (mean age 51.2±4.6 years) with CHF-FC-II. The patients were divided into two groups according to the New York Heart Classification (NYHA) functional class (FC). NYHA FC was determined by the 6-minute walk test (6MWT) and the Russian scale of evaluation of the clinical condition of the patients (Yu, Mareev, 2000). All patients underwent clinical examination, ECG, and echocardiography. Group 1 consisted of 30 post-MI patients with CHF FC-II and Group 2 consisted of 26 post-MI patients with CHF-III. The AC activity in red blood cells homogenate was determined according to the method of V. Salomon. All patients received a carvedilol, nonselective beta blocker with β1- and β2-blocking properties, on the background of basic therapy (ACE inhibitors, spironolactone, nitrates, aspirin, loop diuretics). Initial carvedilol dosage was 3.125 mg and was titrated up 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 33.6±6.9 mg/day in Group II. Results were statistically processed using the software package Statistica 6.1 for Windows and the Excel package of Microsoft Excel 2007. The mean (M) and Standard Deviation (SD) were deduced.

RESULTS
Basal AC activity was less by 31.9% in patients of Group 1 compared to the control group (4.15±0.14 vs 6.1±0.19 pmol/mg/min); in patients of Group 2 it was less by 41.6% compared to the control group (5.56±0.19 pmol/mg/min). In Group 1 patients, the epinephrine-stimulated AC activity was lower about 2 times compared to the control group (5.5±0.19 pmol/mg/min vs. 11.3±0.5 pmol/mg/min). In Group 2 patients, this parameter was reduced to 3.82±0.19 pmol/mg/min and was 65.9% (P <0.05) lower than in the control group and 28.7% lower than in Group1 patients. Long-term therapy with carvedilol (for 6 months) was accompanied by an increase in AC activity by 15.3% in patients with CHF FC-II and 13.9% in patients with CHF FC-III in comparison with the initial data (P <0.05).

CONCLUSIONS
In patients with CHF FC I-III, there was a reduction of adenylyl cyclase activity, which is more pronounced in patients in group 2 and therapy with carvedilol for 6 months increases the AC activity in erythrocyte membranes in patients with CHF FC-III.

GW26-e1339
Analyses of risk factors for heart failure and cardiac mortality after surgical operation of proximal femoral fractures
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OBJECTIVES
Patients undergoing surgical operation of proximal femoral fracture are at risk for heart failure and cardiac mortality. The objective of this work is to identify predictors of heart failure and cardiac mortality and in-hospital death in surgical patients of proximal femoral fracture.

METHODS
From the Surgery of proximal femoral fracture Registry (2,238 operations from January 2003 through December 2012), it was identified that 28 patients in whom heart failure developed during the same hospital stay. The data were analyzed regarding preoperative cardiac disease and surgical and anesthetic factors to study association with heart failure and cardiac death according to the type of surgery, to identify patients at risk of heart failure, and age, and year of surgery.

RESULTS
By using univariable analysis the following predictors of heart failure were identified: valvular disease (P = 0.04), general anesthesia (P = 0.03), preoperative history of coronary artery disease (P = 0.001), preoperative treatment with beta-blockers (P = 0.003), lower preoperative (P = 0.03) and postoperative (P = 0.002) hemoglobin concentrations, increased bleeding rate (P = 0.025). Of the 28 patients with heart failure, 21.4% died of cardiac cause during the same hospital stay. The following factors increased the odds ratios for cardiac death: age (P = 0.001), type of surgery (P = 0.05), lower intraoperative diastolic blood pressure (P = 0.001), new intraoperative ST-T changes (P = 0.01). Patients who underwent coronary artery bypass grafting, even more than 12 months before index surgery, had a 56% reduction in risk of death if they had perioperative myocardial infarction (P = 0.01). Multivariable analysis revealed preoperative definitive diagnosis of coronary artery disease (P = 0.001) and significant valvular disease (P = 0.04) were associated with increased risk of heart failure. Increased intraoperative use of blood (P = 0.045) were associated with cardiac death.

CONCLUSIONS
The in-hospital cardiac mortality rate is high for patients of proximal femoral fracture who undergo surgery and experience clinically significant heart failure. Stress of surgery (increased perioperative bleeding), poor preoperative cardiac functional status (lower ejection fraction, diagnosis of coronary artery disease) are the factors that determine perioperative cardiac morbidity and mortality rates.

GW26-e2330
Efficacy and safety of 1-hour infusion of recombinant human atrial natriuretic peptide in patients with acute decompensated heart failure: a phase III, randomized, double-blind, placebo-controlled, multicenter trial
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OBJECTIVES
To evaluate the efficacy and safety of 1-h infusion of recombinant human atrial natriuretic peptide (rhANP), in combination with standard therapy, in patients with acute decompensated heart failure (ADHF).

METHODS
Eligible patients with ADHF were randomized to receive either rhANP or placebo for 1-h infusion at a ratio of 3:1 in combination with standard therapy. The primary endpoint was dyspnoea improvement (a decrease of at least two grades of severity in dyspnoea at 12 h from baseline). In addition, reduction in pulmonary capillary wedge pressure (PCWP) one h after infusion was the co-primary endpoint for catheterized patients.

RESULTS
Overall, 477 patients were randomized into two groups: 358 (91 catheterized) patients with rhANP and 118 (28 catheterized) with placebo. The proportion of patients with dyspnoea improvement at 12 h was higher, although not statistically significant, in the rhANP group than in the placebo group (32.0% vs 25.4%, odds ratio=1.382, 95% confidence interval: 0.863-2.122, P =0.172). Reduction in PCWP at 1 h was significantly greater in patients treated with rhANP than those with placebo (-7.74±5.95 vs. -1.82±4.47 mmHg, P <0.001). The frequencies of adverse events and renal impairment within 3 days were similar between the two groups. Serious adverse events and mortality rates were low in both groups.

CONCLUSIONS
For ADHF patients receiving standard therapy, 1-h rhANP infusion results in prompt, transient hemodynamic improvement with a small, but non-significant, effect on dyspnoea. The safety of 1-h rhANP infusion is acceptable. (WHO International Clinical Trials Registry Platform (ICTRP) number, ChiCTR-IJR-14005719.)