LVESVI (p=0.01, r=−0.50) after CRT. The further multivariate analysis showed only the plasma PIINP level among clinic characters and all the biomarkers can predict the improvement of LVESVI index (OR=0.33, P=0.01).

**Conclusion** The low PIINP level, which is consistent with possible less cardiac fibrosis and a more plastic ventricle at baseline, is associated with CRT responsiveness. Contrary to previous reports, the NGF levels were not reduced during HF and that there was no NGF rebound in CRT responders.

**Table** Baseline clinical characters in the recurrence group and non-recurrence group

<table>
<thead>
<tr>
<th>Character</th>
<th>Non-recurrence</th>
<th>Recurrence</th>
<th>Univariate</th>
<th>Multivariate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (ys)</td>
<td>57.39±9.92</td>
<td>59.26±10.47</td>
<td>0.49</td>
<td>0.97</td>
</tr>
<tr>
<td>AF type</td>
<td>23 (53%)</td>
<td>10 (50%)</td>
<td>0.97</td>
<td>0.34</td>
</tr>
<tr>
<td>AF no. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AF duration (ys)</td>
<td>5.84±5.43</td>
<td>8.08±7.66</td>
<td>0.20</td>
<td>0.99</td>
</tr>
<tr>
<td>LA volume (mL)</td>
<td>57.62±25.39</td>
<td>81.20±40.88</td>
<td>0.02</td>
<td>1.01</td>
</tr>
<tr>
<td>LVEDP (mm Hg)</td>
<td>10.25±14.54</td>
<td>11.25±5.75</td>
<td>0.81</td>
<td>0.96</td>
</tr>
<tr>
<td>dp/dt max (mm Hg/s)</td>
<td>1294.02±373.13</td>
<td>1211.77±225.36</td>
<td>0.47</td>
<td>0.99</td>
</tr>
<tr>
<td>Mean LAP (mm Hg)</td>
<td>12.19±4.57</td>
<td>16.46±4.14</td>
<td>0.01</td>
<td>1.06</td>
</tr>
</tbody>
</table>

**Objective** To evaluate the impact of intravenous administration of rhBNP on coronary and renal artery haemodynamics in York pigs model of AMI-ADHF.

**Methods** Fourteen York pigs were included in this study. After the AMI-ADHF models were established, pigs were randomised into saline group and rhBNP group. Coronary pressure (Pc), the average peak velocity (APV), coronary vascular resistance (CR), coronary flow reserve (CFR) and coronary diameter were recorded simultaneously at baseline, instant after the model established, 60 min after continuous infusion of 0.01 μg kg⁻¹ min⁻¹ rhBNP and the time point of LVEDP<12 mm Hg. The blood flow of the coronary were measured at rest and maximal hyperaemia. Renal angiography was performed by 4F catheter and quantitative measurement of diameter was recorded by the computer assisting system. The average peak rate of renal artery (APVR) was recorded, determination of quantitative angiographic measurement of renal artery diameter, renal vascular resistance, LVEDP and LVEF was measured.

**Results** 1. Coronary artery diameter increased after rhBNP administration. APV and CBF were significantly increased and CR decreased after rhBNP administration. CFR was significantly rebound after continuous infusion of 0.01 μg kg⁻¹ min⁻¹ rhBNP for 50min. APV and CBF significantly increased and CR significantly decreased at the stage of infusion 0.010 μg kg⁻¹ min⁻¹ rhBNP in rhBNP Group. 2. Renal artery pressure was significantly lower after rhBNP administration. RhBNP exerts renal vasodilator effects in a dose related relationship. RBF increased gradually after administration of rhBNP and was significantly higher than control group. RVR decreased after administration of rhBNP. LVEF was lower than baseline after the models established and tended to increase after administration of rhBNP.

**Conclusion** It could increase blood flow of injury coronary artery, improve CFR and improve the coronary and renal haemodynamics after intravenous administration of rhBNP in pigs with AMI-ADHF.
and LVEF was measured. Serum creatinine (Scr) was measured before and after administering the medication 24 h, 48 h, 72 h, 7 days and 14 days using simplified MDRD equation to calculate estimated glomerular filtration rate (eGFR). Recording the major adverse cardiac events (MACE) occurrence within 30 d.

**Results**

rhBNP group had a less dyspnoea time than the control group; The plasma BNP levels significantly lower than before treatment at different time point in the two groups. The LVEF significantly higher in treatment group compared with baseline levels after treatment 24 h, while LVEFD significantly decreased even after discontinuation the treatments, which remain so when the 30 days. The LVEF and LVEDD improvements in rhBNP group were significantly better than in the control group after treatment 24 h, 14 days; At day 7 after PCI, the Scr lowered to the baseline level in the rhBNP group. The eGFR after PCI was higher in the rhBNP group than that in the control group. The occurrence of CIN was significantly lower in the rhBNP group than in the control group. The MACE event of 30 days in rhBNP group was significantly lower than the control group.

**Conclusion**

rhBNP can promptly and effectively improve the heart function, reduce the incidence of MACE rate in acute myocardial infarction with heart failure patients, which also had a renal function protective effect in patients with and decreased incidence on CIN.

---

**CLINICAL ANALYSIS OF ACUTE MYOCARDIAL INFARCTION IN YOUNG PATIENTS**

*Fu Xianghua, Wu WeiLi, Zhang WenJing, Wang YueChao, Wang YanBo, Jiang YunFa, Hao GuoZhen. The Second Hospital of Hebei Medical University*

**Objective**

To investigate the clinical characteristics of acute myocardial infarction (AMI) in young patients.

**Methods**

We carried out the contrasting analysis in the clinical data of acute myocardial infarction (AMI) in young patients.

**Results**

Young AMI patients were often male, and had the typical coronary heart disease (CHD). The plasma BNP levels significantly lower than before treatment at different time point in the two groups. The LVEF and LVEDD improvements in rhBNP group were significantly better than in the control group after treatment 24 h, 14 days; At day 7 after PCI, the Scr lowered to the baseline level in the rhBNP group. The eGFR after PCI was higher in the rhBNP group than that in the control group. The occurrence of CIN was significantly lower in the rhBNP group than in the control group. The MACE event of 30 days in rhBNP group was significantly lower than the control group.

**Conclusion**

rhBNP can promptly and effectively improve the heart function, reduce the incidence of MACE rate in acute myocardial infarction with heart failure patients, which also had a renal function protective effect in patients with and decreased incidence on CIN.

---

**THE EFFECTS OF SLEEP APNOEA SYNDROME ON MYOCARDIAL ISCHAEMIA IN PATIENTS WITH CORONARY HEART DISEASE DURING NIGHT**

*Fu Xianghua, Pang Jiangna, Wang Yuechao, Wang Yanbo, Jiang Yunfa, Hao Guozen, Gu Xinshun. The Second Hospital of Hebei Medical University*

**Objective**

To investigate the relationship between sleep apnoea syndrome (SAS) and myocardial ischaemic events in patients with coronary heart disease (CHD). 2. To compare the differences of age, gender distribution, coronary angiography results in CHD patients with and without SAS. 3. To compare the differences of C-reactive protein (CRP) and haemoglobin levels in CHD patients with and without SAS.

**Methods**

25 CHD patients with typical symptoms of angina and ECG changes were enrolled in this study. After overnight polysomnography (PSG), all the cases were monitored by portable device at night for 7 days in order to exclude the conditions that the cases did not sleep or had waked, apnoea and hypopnoea events were recorded during 24: 00–4:00. Blood samples were collected 5–10 min after monitoring, and the levels of haemoglobin and C-reactive protein were examined.

**Results**

1. The incidence of myocardial ischaemia caused by apnoea and low oxygen was significantly higher in CHD patients with SAS. 2. There were significant differences between the two groups in the decrease of oxygen desaturation and the increase of heart rate. 3. BMI in CHD patients was significantly higher in those with SAS. There were more multi-vessel lesions and long lesions in CHD patients with SAS (p < 0.05). The level of haemoglobin and C-reactive protein were much higher in CHD patients with SAS.

**Conclusion**

1. The incidence of SAS is much higher in patients with CHD, and the incidence of myocardial ischaemic events is higher in CHD patients with SAS. and the more serious respiratory disorders, the more easily myocardial ischaemia happens. With apnoea related to myocardial ischaemia and oxygen reduction, has nothing to do with the heart rate. 2. Lesions of SAS in patients with coronary heart disease are heavier than Simple CHD group in coronary angiography. BMI of SAS in patients with coronary heart disease are higher than Simple CHD group. 3. The levels of CRP and haemoglobin are higher in CHD patients with SAS.