

**Methods** 32 patients with SSS or AVB associated chronic heart dysfunction were divided two groups RA-URIS pacing group (13 cases) and RA-RVA pacing group (19 cases). The parameters including left ventricular mass index (LVMI), left ventricular ejection fraction (LVEF) and 6 min walk test (6-MWT) were compared between two groups in pre-pacing and in follow up 24 months after pacing.

**Results** There were no difference on LVEF, LVMI and 6-MWT between two groups before pacemaker implanted. But after 24 months for pacing therapy in RA-URIS group, there was significant increase in LVEF ( $48.3 \pm 10.1$  vs  $40.7 \pm 8.4$ ,  $p < 0.05$ ), 6MWT ( $386 \pm 69$  vs  $330 \pm 78$ ,  $p < 0.05$ ) and decrease in LVMI ( $102.5 \pm 16.3$  vs  $120.1 \pm 18.5$ ,  $p < 0.05$ ). Meanwhile, LVEF, 6-MWT ( $48.3 \pm 10.1$  vs  $43.7 \pm 5.5$ ,  $386 \pm 69$  vs  $329 \pm 91$ ,  $p < 0.05$ ) were increased and LVMI ( $102.5 \pm 16.3$  vs  $113.6 \pm 17.4$ ,  $p < 0.05$ ) were decreased significantly in RA-URIS group compared with those of RA-RVA group in 24 months follow up.

**Conclusion** The results showed that RA-URIS pacing may reverse left ventricular remodelling in patients with chronic heart dysfunction as well as improving life quality.

#### e0650 THE EFFECTS OF BIVENTRICULAR SYNCHRONOUS PACING ON CBF, MVO<sub>2</sub> AND CWE IN DOGS

doi:10.1136/hrt.2010.208967.650

Fu Xianghua, Ma Ning, Li Shiqiang, Wu Weili, Li Liang, Gu Xinshun, Jiang Yunfa. *The 2nd Hospital of Hebei Medical University, Shijiazhuang, Hebei, China*

**Objective** To compare the effects of biventricular synchronous pacing with different pacing site on coronary Blood flow (CBF), myocardial oxygen consumption (MVO<sub>2</sub>) and cardiac work efficiency (CWE).

**Methods** RA-cHisB and RA-RVA sequential pacing, RVA-LVPL and cHisB-LVPL pacing, RA-RVA-LVPL and RA-cHisB-LVPL pacing were randomly performed in 14 dogs with general-anaesthetised, opened chest and artificial-ventilation. SNR was as self-control. Every pacing mode was to capture SNR for 20 min with a recovery of physiologic parameters for 10 min, and then shift another pacing mode in turn. CBF and CO were measured by a electromagnetic flowmeter. Blood sample were respectively collected from the catheters in left ventricle and coronary sinus for getting the arterial O<sub>2</sub> saturation (SaO<sub>2</sub>), coronary sinus O<sub>2</sub> saturation (ScsO<sub>2</sub>) and Hgb.

**Results** No significant difference in CBF among the RA-cHisB-LVPL, RA-RVA-LVPL and RA-cHisB pacing were found. CBF in RA-RVA pacing was decreased than that in RA-cHisB-LVPL, RA-RVA-LVPL and RA-cHisB pacing. MVO<sub>2</sub> among the all groups had no significant changes compared with each other. CO of RA-cHisB, RVA-LVPL and cHisB-LVPL pacing were increased as compared with that in RA-RVA pacing ( $p < 0.01$ ). CO in cHisB-LVPL pacing was increased by 6.7% than that in RVA-LVPL pacing. CO in RA-cHisB pacing was increased by 8.7% than that in RA-RVA pacing. CO in RA-RVA-LVPL pacing was increased as compared with that in RA-cHisB and cHisB-LVPL pacing, respectively. CO in RA-cHisB-LVPL pacing was increased than that in RA-RVA-LVPL pacing. The changes of CWE were similar to that of CO among all pacing groups. CWE in RA-cHisB-LVPL pacing was significantly enhanced as compared with that in RA-cHisB and RA-RVA-LVPL pacing. Conclusions RA-cHisB dual chamber, cHisB-LVPL biventricular and RA-cHisB-LVPV triple-chamber pacing might significantly increase CBF and CWE without the increment of MVO<sub>2</sub>.

**Conclusion** The biventricular synchronous pacing have the beneficial effects on maintaining the balance between myocardial oxygen supply and consumption and increasing CWE by enhancing the cardiac ejection performance.

#### e0651 EVALUATION ON ACUTE HAEMODYNAMIC EFFECTS OF INTRAVENOUS rhBNP IN ACUTE MYOCARDIAL INFARCTION PATIENTS WITH HEART FAILURE BY CONTINUOUS SWAN-GANZ CATHETER MONITORING

doi:10.1136/hrt.2010.208967.651

Fu Xianghua, Li Shiqiang, Fan Weize, Gu Xinshun, Liu Jun, Hao Guozhen, Jiang Yunfa, Ma Ning, Zhang Jing, Fan Xinna. *The 2nd Hospital of Hebei Medical University, Shijiazhuang, Hebei, China*

**Objectives** To compared and evaluated the acute haemodynamic effects and safety of intravenous rhBNP versus nitroglycerin (NIT) in AMI patients with ADHF by Swan-Ganz catheter (6F, ARROW, Inc USA) monitoring through a prospectively designed study.

**Methods** 42 consecutive AMI patients with ADHF were randomised into rhBNP group ( $n=21$ ,  $1.5 \mu\text{g} \cdot \text{kg}^{-1}$  bolus intravenous injection followed by  $0.0075 \mu\text{g} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$  for the first 3 h and  $0.015-0.03 \mu\text{g} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$  infusion for following 21 h) and NIT group ( $n=21$ , 10 to  $100 \mu\text{g} \cdot \text{min}^{-1}$  intravenous infusion for 24 h). The invasive haemodynamic parameters were measured at the baseline, during 24 h of drug infusion and 6 h of post-infusion by Swan-Ganz catheter monitoring via subclavian access while total urine output during 30 h and relative serum chemistries were measured. MACE was followed up 1 week.

**Results** As early as 30 min after the initiation of rhBNP, PCWP was reduced by 48.9% contrasted to baseline and cardiac index (CI) was increased by 27.1% at 1 h of rhBNP infusion respectively, ( $p < 0.05$ ); these significant changes in PCWP and CI continued throughout 24 h of rhBNP infusion and 6 h of discontinuing the infusion ( $p < 0.05$ ). Although PCWP reduced significantly at 2 h of NIT infusion ( $p < 0.05$ ) and CI elevated significantly at 3 h of infusion. The total urine output for 30 h of this study in rhBNP group tended to be more than that in NIT group ( $p > 0.05$ ), while serum potassium concentration in rhBNP group was significantly increased relative to baseline value ( $3.4 \pm 0.5$  vs  $4.0 \pm 0.4 \text{ mmol} \cdot \text{L}^{-1}$ ,  $p < 0.05$ ). There was no symptomatic hypotension or other adverse events appeared to be associated with rhBNP administration under this study.

**Conclusions** Intravenous injection of rhBNP results in more rapid, strong and prolong haemodynamic improvement than that of NIT in AMI patients with ADHF as well it is also feasible and safe in clinic as a selective agent for AMI patients with ADHF.

#### e0652 THE LEVEL CHANGES OF IL-8 AND THE RELATIONSHIP TO THE LEFT VENTRICULAR ANEURYSM FORMATION AND CARDIAC PERFORMANCE IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

doi:10.1136/hrt.2010.208967.652

Fu Xianghua, Liu Jun, Wu Weili, Wang Xuechao, Wang Yanbo, Fan Weize. *The 2nd Hospital of Hebei Medical University, Shijiazhuang, Hebei, China*

**Objective** To investigate the changes in interleukin-8 (IL-8) and the relationship with the left ventricular aneurysm (LVA) and cardiac function in acute myocardial infarction (AMI) patients using left ventriculography (LVG).

**Methods** A total of 106 patients with primary anterior AMI accompanied LVA diagnosed by LVG were submitted to LVG after onset of AMI symptom and divided into LVA group and non-LVA group. Plasma IL-8 was measured. At the immediately after PCI and 6th month after AMI, the parameters of left ventricular end diastolic volume index (LVEDVI), left ventricular end systolic volume index (LVESVI), left ventricular ejection fraction (LVEF), wall motion score (WMS) and left ventricular end diastolic pressure (LVEDP) were measured by LVG. The main adverse cardiac events were recorded in 24th week after PCI.

**Results** There was no difference between the two groups in clinical characteristic, while the interval time of onset to reperfusion in LVA group was longer and the incidence of Killip 3 grade was higher than those in non-LVA group ( $p<0.05$ , respectively). The peak value of plasma IL-8 in LVA was significant higher and the peak time of plasma cTnI was much earlier than those in the non-LVA group ( $p<0.05$ , respectively). The peak values of plasma IL-8 in LVA group with LVEDP $\geq$ 18 mm Hg were significant higher than that in non-LVA with LVEDP. The peak value of plasma IL-8 in LVA group with LVEDP $<$ 18 mm Hg were significant higher than that in non-LVA with LVEDP ( $p<0.05$ ). At 6th month post-AMI, the value of LVEF, LVESVI, LVEDVI, WMS and LVEDP in non-LVA group were much better than those in LVA group. The values of LVEF, LVESVI, LVEDVI, WMS and LVEDP in non-LVA group at 6th month post-AMI were significantly improved as compared with those at the first time after PCI but the values of LVEDVI, WMS, LVEDP were improved in the LVA group. Within the 6th month follow-up, the incidences of angina post-AMI, heart failure of NYHA $\geq$ 3 grade and mortality in LVA group were significantly higher than those in the non-LVA group ( $p<0.05$ , respectively).

**Conclusions** The value of plasma IL-8 is significantly increased and correlated closely with left ventricular remodelling status and haemodynamic change in patients with LVA after AMI. It is indicated that the over activity of immune inflammatory medium IL-8 involves in the process of LVA formation and has an important clinic significance in early diagnosis and appreciation of LVA post AMI.

#### e0653 LEVEL CHANGE OF PLASMA BNP AND THE RELATIONSHIPS TO THE LEFT VENTRICULAR ANEURYSM FORMATION AND CARDIAC PERFORMANCE IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

doi:10.1136/hrt.2010.208967.653

Fu Xianghua, Liu Jun, Gu Xinshun, Wei Yongyun, Fan Weize, Wang Yanbo. *The 2nd Hospital of Hebei Medical University, Shijiazhuang, Hebei, China*

**Objective** To investigate the change of brain natriuretic peptide (BNP) in plasma and the relationships with the left ventricular aneurysm (LVA) and cardiac performance in acute myocardial infarction (AMI) patients using left ventriculography (LVG).

**Methods** A total of 64 patients with primary anterior AMI accompanied LVA diagnosed by LVG were enrolled in this study and divided into LVA group (33 patients) and non-LVA group (31 patients). Plasma BNP was measured. At the immediately after PCI and 6th month after AMI, the parameters of LVEDVI, LVESVI, LVEF, WMS and LVEDP were measured by LVG. The main adverse cardiac events (MACE) were recorded during 24 week after PCI.

**Results** The peak value of plasma BNP in LVA group was higher and the arrived time of peak values of peak time of plasma BNP was earlier than those in the non-LVA group ( $p<0.01$ , respectively). In 5th day and 24th week after AMI, the values of BNP in LVA group were higher as compared to those in non-LVA group ( $p<0.05$ , respectively). The peak value of plasma BNP in LVA group, regardless of whether LVEDP $\geq$ 18 mm Hg or LVEDP $<$ 18 mm Hg, were higher than that in non-LVA group under the same level of LVEDP ( $p<0.05$ ). At 6th month after AMI, the parameters of LVEF, LVESVI, LVEDVI, WMS and LVEDP in non-LVA group were much better as compared to those in LVA group. The peak value of plasma BNP was significantly correlated with LVESVI, LVEDVI, WMS, LVEDP in LVA group ( $p<0.01$ , respectively), while negatively correlated with LVEF at primary PCI ( $r=-0.72$ ,  $p<0.01$ ). During the 6 months follow-up, the incidence of MACE in LVA group were higher than that in the non-LVA group ( $p<0.05$ ). The peak value of plasma BNP in LVA group was significantly correlated with the incidence of MACE ( $r=0.56$ ,  $p<0.05$ ).

**Conclusions** The value of plasma BNP in the AMI patients with LVA was higher than that with non-LVA, and significantly correlated with left ventricular remodelling status and homodynamic change. It is indicated that the over secretion of BNP is involved in the left ventricular remodelling and the process of LVA formation.

#### e0654 THE EFFECT OF PREVENTIVE INTRACORONARY ADMINISTRATION OF ANISODAMINE ON MICROCIRCULATION PERFUSION IN MINISWINE WITH AMI

doi:10.1136/hrt.2010.208967.654

Fu Xianghua, Gu Xinshun, Fan Weize, Wei Yongyun, Hao Guozhen, Jiang Yunfa, Liu Jun. *The 2nd Hospital of Hebei Medical University, Shijiazhuang, Hebei, China*

**Objective** Anisodamine is a M-cholinergic receptor inhibitor that plays improvement effectiveness on the microcirculative perfusion. Our previous study had ever shown reversing effect on no-reflow phenomenon (NRP) in the miniswine models with AMI. The purpose of this study was continually to explore the effect of preventive intracoronary administration of anisodamine on myocardial microcirculation in York swines models with AMI by TIMI frame count, TIMI myocardial perfusion grade and haemodynamic parameters.

**Methods** 18 York swines (25~35 kg, 3~4 months old) were divided into saline group (n=9) and Anisodamine group (n=9). Immediately after 2 ml saline and 2 mg anisodamine were injected into LAD in the two groups respectively, PMBS were injected into the coronary artery by three times with 5 min interval, then incidence of NRP was recognised by TIMI frame count and TIMI myocardial perfusion grade. TnI and CK-MB were measured before PMBS injection and at 5, 60, 120, 180 min after PMBS injection. MPP and PCWP were measured by Swan-Ganz catheter. ECG was recorded before and immediately after PMBS injection and  $\Sigma$ ST were calculated. The changes of PR, QRS and QT duration were also compared.

**Results** 16 of 18 York swines survived in the whole procedure. NRP was found in all of the eight swines in saline group while four of eight swines in anisodamine group. MPP (mean perfusion pressure) was slightly increased by 4.76% only in anisodamine group ( $p>0.05$ ), while MPP were significant decreased by 25.23%, 23.63%, 19.66 % immediately, 3 min and 1 h after NRP in saline group ( $118.5\pm16.2$  vs  $88.6\pm12.3$ ,  $118.5\pm16.2$  vs  $90.5\pm14.3$ ,  $118.5\pm16.2$  vs  $95.2\pm16.3$  mm Hg,  $p<0.05$ ), respectively, and PCWP, values of  $\Sigma$ ST and myocardial Infarct size in anisodamine group were much lower than that in saline group significantly ( $p<0.05$ ).

**Conclusion** Preventive intracoronary administration of anisodamine could improve AMI survival rate with NPR by maintaining effective myocardial microcirculation status and raising coronary perfusion pressure as well decreasing the size of myocardial infarction.

#### e0655 THE EFFECT OF INTRAVENOUS ADMINISTRATION OF TIROFIBAN ON MYOCARDIAL REFLOW AND LEFT VENTRICULAR REMODELLING DURING PCI IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

doi:10.1136/hrt.2010.208967.655

Fu Xianghua, Fan Weize, Jiang Yunfa, Hao Guozhen, Wang Xuechao, Wang Yanbo. *The 2nd Hospital of Hebei Medical University, Shijiazhuang, Hebei, China*

**Objective** To investigate the efficacy and safety of platelet glycoprotein IIb/IIIa inhibition (tirofiban) during PCI in AMI patients performed primary PCI.

**Methods** A total of 96 patients with AMI were randomised to divide into two groups: the tirofiban group (TG, n=44,) and the control