

nitinol wire surface. Three to six months after implantation, the occluder surface was completely endothelialized.

Conclusion The novel nitinol occluder can be safely and effectively used for PDA closure, providing a high success rate with few complications, and good biocompatibility.

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e0609 THE GENDER DIFFERENCES OF RED BLOOD CELL DISTRIBUTION WIDTH IN PATIENTS WITH CORONARY HEART DISEASE

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Peng Qiang, Su Hai, Wang Ji-Wei, Wu Qing-Hua, Chen Xiao-shu. *The Second Affiliated Hospital and Cardiovascular Institute of Nanchang University*

Objective To observe the changes of RDW in patients with coronary heart disease (CHD).

Methods 287 CHD patients diagnosed by coronary angiography were selected from Jun. 2007 to Jun. 2008. Meanwhile, 286 hypertensive patients and 302 healthy adults were enrolled as control group. Red blood cell count (RBC), Haemoglobin (HGB), red blood cell distribution width (RDW-CV) was detected by full automatic haemocytometer analyser (Sysmex XE-2100).

Results Compared with hypertension and normal control group, the RDW of CHD group significantly increased. There was no difference between the male RDW in three groups. But the RDW of female CHD subgroup was higher than those of female hypertensive and normal subgroups (13.5 ± 0.8 vs 13.0 ± 0.6 vs 13.1 ± 0.8 , $p < 0.05$). Meanwhile, the RDW of female CHD subgroup was higher than that of male CHD subgroup also (13.5 ± 0.8 vs 13.1 ± 0.7 , $p < 0.05$).

Conclusion The RDW in CHD group has gender differences and only female RDW significantly increase.

e0610 THE CHANGES OF B-TYPE NATRIURETIC PEPTIDE IN CHRONIC HEART FAILURE PATIENTS WITH DIABETES MELLITUS

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Qiang Peng, Hai Su, Tian Xie, De-zhi Hong, Qing-hua Wu, Xiao-shu Cheng. *Cardiovascular Department, Second Affiliated Hospital of Nan Chang University*

Objective To observe the changes of B-type natriuretic peptide (BNP) in chronic heart failure (CHF) patients with diabetes mellitus (DM).

Methods In this study, 559 CHF patients were enrolled, of them 276 patients with coronary heart disease diagnosed by coronary angiography, 234 with hypertensive heart disease, and 49 with dilated cardiomyopathy. They were divided into non-DM group and DM group of 175 patients. NYHA cardiac function degree, and routine blood test, BNP, fasting blood glucose, serum creatinine were detected. Left ventricular ejection fraction and the average thickness of left ventricular wall were detected by echocardiography. The heart failure scale was evaluated for each patient with the age, hypertension, LVEF, LVW and NYHA degree. And the relationship curve of scale-BNP was constructed.

Results 1. The BNP was significantly higher in DM group than in non-DM group (1143.73 ± 94.0 vs 884.34 ± 57.0 , $p < 0.05$). 2. The relationship between the scale and BNP either in DM group or in no-DM was significantly positive. But the scale-BNP relationship curve was notably steeper in DM group. At the same scale, the levels of BNP were significantly higher in the DM than in the no-DM.

Conclusion As the CHF patients with DM have significantly higher BNP level, the DM history and fasting blood glucose should be taken into consideration when for evaluating the heart failure with BNP.

e0611 DIABETES IS A PROGNOSTIC RISK IN PATIENTS WITH DIASTOLIC HEART FAILURE

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Zhang Liangdeng, Wang Jie, Yao Kuiwu. *Guang An Men Hospital, China Academy of Chinese Medical Sciences*

Objective This study was designed to evaluate the prognostic impact of diabetes on diastolic heart failure (DHF) patients.

Methods We collected data on 359 consecutive patients with DHF (61 ± 19 [SD] years, female 65.5%), defined by the Framingham criteria (history of congestive heart failure (CHF) with left ventricular ejection fraction (LVEF) $\geq 50\%$), from 2004 to 2009. Diabetes was defined by oral glucose-tolerance test. The main outcomes were death and re-hospitalisation. Secondary outcomes were new myocardial infarction (MI) and percutaneous coronary intervention (PCI). The outcomes were compared in DHF with diabetes and without diabetes patients.

Results The study population presented 40.7% of DHF patients with diabetes. The rates of total death and re-hospitalisation were 31.5% (37.9% among men and 28.1% among women) and 42.3% (46.8% among men and 40.0% among women), respectively. The in-hospital mortality was higher among women than among men (20.0% vs 16.9%, $p < 0.05$). The rates of death and re-hospitalisation of DHF patients with diabetes were higher than that of DHF patients without diabetes (41.8% vs 24.4%, $p < 0.001$) and (50.7% vs 36.6%, $p < 0.001$). Furthermore, the mortality rate of DHF with diabetes patients increased with increasing courses of diabetes (17.6%, 35.4%, 57.1%, and 62.1% among patients who suffer from diabetes 1 to 5, 6 to 10, 11 to 15, and ≥ 15 years, respectively). The rates of new MI and PCI of DHF patients with diabetes were also higher than that of DHF patients without diabetes (26.7% vs 17.4%, $p < 0.01$) and (19.2% vs 8.0%, $p < 0.01$).

Conclusions These results indicate that the prognosis of DHF patients with diabetes is significantly poor. DHF patients with diabetes had a worse outcome than those patients without diabetes. Diabetes is an important modifiable risk factor in patients with DHF. Maybe strategies targeted at the prevention and therapy of diabetes can improve prognosis in DHF patients. And further investigation is needed.

e0612 CHANGES IN EXPRESSION LEVELS OF SERUM ACTIVIN A IN PATIENTS WITH HEART FAILURE AND ITS CLINICAL SIGNIFICANCE

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Liu Miao, Wei Qun, Liu Yuxia. *Department of Cardiology, Sino-Japanese Friendship Hospital, Jilin University Jilin, China*

Objective The cytokine of the TGF- β superfamily called "activin A" regulates a wide variety of biological events. Recently, it is discovered that ACT-A has played an important role in the occurrence and the development of heart failure, such as promoting myocardial fibrosis and cardiac remodelling. In this paper, we detected the expression levels of serum activin A (ACT-A) in patients with heart failure and compared with brain natriuretic peptide (BNP) to discuss the changes in them and its clinical significance.

Methods Patients with CHF were divided into two groups according to the left ventricular ejection fraction (LVEF) and E/A value: LVEF $< 45\%$ group (Group HFREF, 62 cases), normal LVEF and E/A