[gw22-e0884]

EXPRESSION OF ERBB4 IN THE MYOCARDIAL TISSUE OF DIABETIC RATS

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10.1136/heartjnl-2011-300867.81

Objectives To investigate the changes of ErbB4 expression and Phospho- ErbB4 in the cardiac tissue of diabetic rats.

Methods Thirty six male Sprague–Dawley (SD) rats (8 weeks), were randomly divided into 4 weeks control group (n=6), 4 weeks diabetes group (n=12), 12 weeks control group (n=6) and 12 weeks diabetes group (n=12). Streptozotocin-induced (55 mg/kg) diabetic rats were adopted. Body weight (BW)/ heart weight (HW), echocardiographic parameters, collagen content, ErbB4 mRNA expression and Phospho- ErbB4 level were observed at four weeks and 12 weeks, respectively after the STZ administered.

Results Compared with rats in control group, both HW/BW of diabetic rats and myocardium mesenchyme fibrosis were significantly increased at 4 weeks after the STZ administered ((3.41±0.12)mg/g vs (2.32±0.22) mg/g, p<0.01; 4.48±0.21% vs 2.79±0.36%, p<0.01); Compared with rats in control group at 12 weeks, both HW/BW of diabetic rats and myocardium mesenchyme fibrosis were significantly increased ((3.72±0.38) mg/g vs (2.39± 0.26) mg/g, p<0.01; 15.29%±0.67% vs 3.01%±0.13%, p<0.01), but cardiac function of diabetic rats were significantly decreased, ErbB4 mRNA expression and Phospho-ErbB4 level in the left ventricle of diabetic rat's myocardium were significantly decreased (0.51±0.16 vs 0.99±0.17, p<0.01; 0.931±0.016 vs 1.012±0.011, p<0.01).

Conclusions Reduced ErbB4 and ErbB4 signal conduction may participate in the progression of diabetic rat cardiomyopathy.