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EXPRESSION OF ERBB4 IN THE MYOCARDIAL TISSUE OF DIABETIC RATS

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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 ($(3.41 \pm 0.12) \text{ mg/g}$ vs $(2.32 \pm 0.22) \text{ mg/g}$, $p < 0.01$; $4.48 \pm 0.21\%$ vs $2.79 \pm 0.36\%$, $p < 0.01$); Compared with rats in control group at 12 weeks, both HW/BW of diabetic rats and myocardium mesenchyme fibrosis were significantly increased ($(3.72 \pm 0.38) \text{ mg/g}$ vs $(2.39 \pm 0.26) \text{ mg/g}$, $p < 0.01$; $15.29\% \pm 0.67\%$ vs $3.01\% \pm 0.13\%$, $p < 0.01$), 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.