[gw22-e0796] **ELECTROPORATION-MEDIATED ANGIOTENSIN II TYPE 2 RECEPTOR GENE TRANSFECTED INTO RAT CAROTID ARTERIES AND THE EFFECTS OF AT2R GENE TRANSFER ON NEOINTIMAL HYPERPLASIA IN RAT CAROTID ARTERIES AFTER BALLOON ANGIOPLASTY.**

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Aim To study the effects of Electroporation on the angiotensin type 2 receptor (AT2R) transfected into rat carotid arteries and study the effects of AT2R gene transfer on neointimal hyperplasia in rat carotid arteries after balloon angioplasty.

Methods Electroporation-mediated AT2R gene transfected into rat carotid arteries after the establishment of rat carotid balloon injury restenosis model. The arteries were harvested at five days, 14 days and 21 days after gene transfer. The expression of AT2R in arteries and morphology analysis were evaluated by fluorescence microscope, immunohistochemistry, HE staining and in situ hybridisation.

Results Electroporation-mediated AT2R gene delivered into injured rat carotid arteries significantly up-regulated the levels of AT2R mRNA in neointima from day five to day 14. At day 21, compared with no Electroporation-mediated group, no transfection group and GFP transfection group, AT2R transfection reduced I/M intimal/medial area ratio significantly (0.85 ±0.1, 1.32±0.19, 1.51 ±0.19, 1.49 ±0.25, $p<0.01$). No significant difference between no Electroporation-mediated group, GFP group and no transfection group was observed.

Conclusion The results of this study provide evidence that electroporation is an effective means for introducing naked AT2R DNA into the blood vessel wall and gene transfer of AT2R in vessel wall may effectively inhibit VSMC proliferation and neointimal hyperplasia in the rat carotid arteries after balloon angioplasty.