

## **Effects of Losartan on expression of connexins at the early stage of atherosclerosis in rabbits**

Li-ming Ruan, Wei CaiJun-zhu Chen, Jin-feng Duan

**Abstract :**

Aim: to investigate effects of Losartan on expression of connexin 40 and 43 (Cx40 and Cx43), in arteries at the early stage of atherosclerosis in a rabbit model. Methods: A total of 28 male New Zealand white rabbits were divided into following groups: control group, high fat diet group, and Losartan group (10 mg/kg/day). Losartan was administrated in food for two weeks. Iliac arteries were obtained for immunohistochemistry, transmission electron microscopy, Western blot, and reverse transcriptase-polymerase chain reaction (RT-PCR). Results: Transmission electron microscopy revealed abundant gap junctions between neointimal smooth muscle cells (SMCs), which were markedly reduced by treatment. RT-PCR and Western blot assay showed that the mRNA and protein expression of Cx40 and Cx43 were elevated in the neointimal area at the early stage of atherosclerosis. The mRNA and protein expression of Cx43 were significantly down-regulated by losartan treatment but those of Cx40 were not markedly changed. Conclusion: Cx40 and Cx43 in the neointimal SMCs were up-regulated at the early stage of atherosclerosis. Losartan (an angiotensin- converting enzyme inhibitor) could reduce neointima proliferation and down-regulate the elevated protein expression of Cx43, suggesting the rennin-angiotensin system (RAS) plays an important role in the remodeling of gap junction between ventricular myocytes under pathological conditions

**Key Word :**

vascular proliferation; gap junction; connexin; balloon angioplasty; statin

*Volume 7, Number 2, - 2010 , ISSN 1449-1907*