GW23-e1874

SIMVASTATIN PREVENT ATHEROSCLEROSIS DEVELOPMENT THROUGH INHIBITING PROTEIN EXPRESSION OF ADHESION MOLECULES

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Objectives To explore the effects of simavastatin on protein expressions of intercellular adhesion molecule 1 (ICAM-1), vascular cell adhesion molecule 1 (VCAM-1) and endothelial leukocyte adhesion molecule 1 (E-selectin) of cholesterol diet rabbits and the underlying mechanisms of the beneficial effects of simvastatin on atherosclerosis (AS).

Methods Twenty-four male rabbits were randomly divided into three groups: normal diet groups, cholesterol diet groups and the simvastatin groups which received both cholesterol diet and simastatin 5 mg/kg/d intragastrically. ELISA was used to detect plasma protein levels of ICAM-1, VCAM-1 and E-selectin of rabbits at 0, 8 and 16 weeks, respectively. After 16 weeks, rabbits were executed and the artery wall was harvested for the pathologic and morphologic observations. Western blot and RT-PCR were used to

determine ICAM-1, VCAM-1 and E-selectin level of rabbits artery wall.

Results Compared with normal diet groups, the expression of ICAM-1, VCAM-1 and E-selectin in cholesterol diet groups plasma and artery wall was obviously increased both in protein and mRNA level.(n=6; p<0.01). However, simavastatin could inhibit the formation of atherosclerotic plaques obviously; suppress plasma and artery wall protein expression and mRNA level of ICAM-1, VCAM-1 and E-selectin (n=6; p<0.01).

Conclusions Simvastatin could ameliorates atherosclerosis (AS) through inhibiting expression level of plasma and artery wall adhesion molecule.