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Preventive Effects of Atorvastatin on Atherosclerosis in Experimental Rabbits are Associated With Reduction in Cholesterol Level and VCAM-1 Expression

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***SUMMARY*. In this study, blood samples of rabbits were collected to measure plasma total cholesterol, total triglyceride, and LDL-cholesterol. After 16 weeks of high cholesterol diet with or without atorvastatin treatment, the rabbits were sacrificed and morphological changes in tissues were examined with hematoxylin and eosin (HE) staining, and the expression of vascular-cell adhesion molecule 1 (VCAM-1) was determined by immunostaining and reverse transcription-polymerase chain reaction (RT-PCR). We demonstrate that atorvastatin significantly reduced plasma levels of total cholesterol (41.7 %) and LDL-cholesterol (34.6 %). Neither the hyper cholesterol diet nor atorvastatin treatment had any significant impact on body weight and plasma triglycerides (TG). Atorvastatin significantly restored the intima with widening of 40.9 % and even down-regulated the ratio of intima/media by 55.5 %. The inhibitory effects of atorvastatin on the expression of VCAM-1 showed a decrease of up to 46.9 % ($P < 0.01$). The diseased rabbits showed a 63.2 % increase in VCAM-1 mRNA expression ($P < 0.01$), which was reversed by nearly 60 % by treatment with atorvastatin.**

KEY WORDS: Atorvastatin, Atherosclerosis, Inflammation, Statin, VCAM-1.

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