



Effect of atorvastatin on diabetic rat endothelial cells and retinal lesions

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Genet. Mol. Res. 14 (2): 5462-5467 (2015)

Received October 10, 2014

Accepted February 9, 2015

Published May 22, 2015

DOI <http://dx.doi.org/10.4238/2015.May.22.16>

ABSTRACT. We investigated the effect of atorvastatin on vascular endothelial growth inhibitor (VEGI) expression in rats with diabetic retinopathy. Wistar rats were divided into a blank group and diabetic model group, which was further randomly divided into treatment and control groups. Rats in the treatment group received 10 mg/kg atorvastatin daily, while rats in the blank and control groups received normal saline. Rats were randomly euthanized at 3 or 6 months. Immunohistochemical staining was used to determine changes in VEGI and vascular endothelial growth factor, interleukin-4, and tumor necrosis factor α levels in rats with diabetic retinopathy. Survival rate in the treatment group was 84% (63/75) after 6 months, which was significantly higher than that in the control group ($P < 0.05$); rats in the control group showed the lowest survival rate. Survival in the treatment group was higher than that in the control group but not significant compared with the blank group after 3 months. VEGI, vascular endothelial growth factor, tumor necrosis factor α , and interleukin-4 expression was lower than that in the control group, but higher than the blank group after 3 months. The

expression of each factor decreased to the blank group level in the treatment group and was significantly lower than that in the control group after 6 months ($P < 0.05$). Expression in control and blank groups was similar at 3 and 6 months. Atorvastatin can inhibit VEGI and vascular endothelial growth factor expression to protect rats from diabetic retinopathy.

Key words: Atorvastatin; Diabetic retinopathy; Wistar rats; Vascular endothelial growth inhibitor; Vascular endothelial growth factor