Letter to Editor

Sir,

I appreciate Dr. Khazaei's interest in our article "Aqueous concentrations of VEGF and soluble VEGF receptor-1 (sVEGFR1) in diabetic retinopathy patients" and have read with interest the comments sent by him.[1]

We found no significant difference in the aqueous fluid levels of vascular endothelial growth factor (VEGF) in nonproliferative diabetic retinopathy (NPDR) patients compared with nondiabetic patients, whereas that of sVEGFR-1 was significantly decreased in NPDR patients compared with nondiabetic patients. There was no significant different VEGF/sVEGFR-1 ratio between groups in our study (0.39 ± 0.04 in controls vs 0.29 ± 0.04 in NPDR patients, $P = 0.3$).

We were aware of Dr. Waltenberger's interesting explanation of angiogenic paradox based on the concept of VEGF resistance;[2] however, it seems that not only VEGF resistance is not the case in microenvironment of the retina of diabetic patients, but also local increase in angiogenesis is associated with diabetic retinopathy.

It has been shown that in early stages of NPDR, leakage of retinal microvessels is possibly caused by local VEGF production in areas of capillary nonperfusion,[3] while VEGF messenger ribonucleic acid (mRNA) levels are increased in the ischemic retina of patients with advanced DR.[4] With respect to imbalances between angiogenic and antiangiogenic factors, sVEGFR-1 has been suggested to act as a scavenger for VEGF-A, thereby protecting vessels from becoming leaky or proliferative.[5] It has been suggested that production of sVEGFR-1 is also regulated by hypoxia and participates in regulation of angiogenesis.[6] So, we speculate that decreased levels of sVEGFR-1, which increases the availability of VEGF-A may be an initial compensatory event in early steps of NPDR. However, further studies are needed to investigate other interesting possibilities which explain the role of VEGF and its receptors in DR.

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