

Vasoregression, a Common Biological Phenomenon Mediating Development of Atherosclerosis and Ocular Microangiopathy

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Abstract—*Vasoregression is the progressive obliteration of capillaries that represents the first and crucial step in the development of microvascular complications. Besides playing a prominent role in microvascular diseases of the central and peripheral nervous system, it is also an alarming signal for the onset of oculovascular pathologies like diabetic retinopathy. Vasoregression phenomenon in microvasculature is similar to destabilization of mature blood vessels in macrovascular complications like atherosclerosis. Endothelial dysfunction and loss of mural cells (pericytes/smooth muscle cells) are the hallmarks underlying both phenomenon. A model is proposed suggesting the important role of vasoregression in Atherosclerosis and ocular diseases like Diabetic Retinopathy, Diabetic Macular Edema and Macular Degeneration. The co-occurrence of these conditions in diabetic subjects can thus be inferred. With expanding understanding of the inter-relationship between atherosclerosis, ocular diseases and vasoregression, therapeutic strategies aimed at limiting vasoregression can be advocated for the clinical management of atherosclerosis and ocular diseases like diabetic retinopathy.*