



New Therapeutic Window of Regenerative Opportunity in Diabetic Retinopathy by Vesgen

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BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 44 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. Vascular pattern may serve as a useful new biomarker principle of complex, multi-scale signaling in pathological, physiological angiogenesis and microvascular remodeling. Each angiogenesis stimulator or inhibitor we have analyzed, including VEGF, bFGF, TGF-beta1, angiostatin and triamcinolone acetate, has induced a novel fingerprint or signature biomarker vascular pattern that is spatio-temporally unique. Remodeling vasculature thereby provides an informative read-out of dominant molecular signaling, when analyzed by innovative, fractal-based VESSEL GENERATION (VESGEN) Analysis software. Using VESGEN to analyze ophthalmic clinical vascular images, we recently introduced a potential paradigm shift to the understanding of early-stage progression that suggests new regenerative opportunities for human diabetic retinopathy (DR), the major blinding disease for working-aged adults. In a pilot study, we discovered that angiogenesis oscillates as a surprising, homeostatic-like regeneration of retinal vessels during early progression of DR (IOVS 51(1): 498). Results suggest that the term non-proliferative DR may be a misnomer. In new studies, normalization of the vasculature will be determined from the response of vascular pattern to therapeutic monitoring and treatment. We have mapped and quantified in vivo experimental models of angiogenesis, lymphangiogenesis and intravital...



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