LITERATURE SURVEY

AUTHOR	TECHNOLOGY	DESCRIPTION	ADVANTAGES	DISADVANTAGES
Shin ES, Sorenson CM, Sheibani N. Diabetes and retinal vascular dysfunction. J Ophthalmic Vis Res. 2014; 9: 362–373	Fractal Dimensional Analysis of Optical Coherence Tomography Angiography in Eyes With Diabetic Retinopathy	It used fractal dimensional analysis to analyze retinal vascular disease burden in eyes with diabetic retinopathy using spectral-domain optical coherence tomography angiography (OCTA).Applying fractal analysis to OCTA imaging holds the potential to establish quantitative parameters for microvascular pathology.	The advent of OCTA analysis can provide high resolution images that allow the visualization of morphologic microvascular abnormalities, and also are well-suited to mathematical analysis of each vascular layer.	A small sample size and persistence of imaging artifacts, which may reduce the precision of fractal analysis
Wenbo Zhang 1 , Hua Liu, Mohamed Al-Shabrawey, Robert W Caldwell, Ruth B Caldwell.	Comparing diabetic retinopathy lesions in scanning laser ophthalmoscopy and colour fundus photography	It evaluate the detection of different lesions of diabetic retinopathy (DR) in scanning laser ophthalmoscopy (SLO) compared to colour fundus photographs within the same retinal field.Scanning laser ophthalmoscopy and colour fundus photographs of 67 eyes taken on the same day of dilated patients with different grades of diabetic retinopathy were retrospectively examined.	Features of DR including haemorrhages, microaneurysms, exudates, cotton wool spots, intraretinal microvascular abnormalities, venous beading and neovascularization were analysed	Due to high efficiency it is not applicable for advanced level.It is lower response to the application model.
Lucy Q. Shen, Angie Child, Griffin M. Weber, Judah Folkman, Lloyd Paul AielloPublish Year: 2008	Rosiglitazone and Delayed Onset of Proliferative Diabetic Retinopathy	evaluate whether rosiglitazone maleate, an oral peroxisome-proliferating activated receptor agonist and oral insulin sensitizing agent with potential antiangiogenic activity, delays onset of proliferative diabetic retinopathy (PDR).	All visual acuity measurements were bestcorrected and conducted on Early Treatment Diabetic Retinopathy Study (ETDRS) visual acuity charts	Rosiglitazone may delay the onset of PDR, possibly because of its antiangiogenic activity

Osakada F, Ikeda H, Sasai Y, Takahashi M (2009)	Early retinal differentiation of human pluripotent stem cells in microwell suspension cultures	It develop a microwell suspension platform for the adaption of attached stem cell differentiation protocols into mixed suspension culture	Only major capital expenditure for standard cell culture laboratories is a relatively cheap shaking platform.	Shaking microwells is that they do not include many potentially beneficial functionalities associated with suspension bioreactors such as pH, O2 control and medium feeding regimes
M Wu · 2012 · Cited by 69 — 26. Kowluru RA Chan PS	Oxidative and Endoplasmic Reticulum Stresses Mediate Apoptosis Induced by Modified LDL in Human Retinal Müller Cells	It extravasated, modified LDL is implicated in pericyte loss in diabetic retinopathy (DR).Cultured human retinal Müller cells (MIO-M1) were treated with highly oxidized glycated LDL (HOG-LDL, 200 mg protein/L) or native LDL (N-LDL, 200 mg protein/L) for up to 24 hours with or without pretreatment with N-acetyl-cysteine (NAC, a blocker of oxidative stress) and 4-phenylbutyrate (4-PBA, a blocker of endoplasmic reticulum [ER] stress)	NAC attenuated activation of ER stress. Similar to HOG-LDL, 7KC, and 4HNE also induced apoptosis, oxidative stress, and ER stress	The critical functions in maintaining the healthy retina, any damage to Müller cells is likely to promote both retinal neuronal and vascular injury

REFERENCES :

- E. S. Shin, C. M. Sorenson, and N. Sheibani, “Diabetes and retinal vascular dysfunction,”Journal of Ophthalmic & Vision Research, vol. 9, no. 3, pp. 362–373, 2014.

- W. Zhang, H. Liu, M. Al-Shabrawey, R. W. Caldwell, and R. B. Caldwell, “Inflammation and diabetic retinal microvascular complications,” Journal of Cardiovascular Disease Research, vol. 2, no. 2, pp. 96–103, 2011.

- L. Q. Shen, A. Child, G. M. Weber, J. Folkman, and L. P. Aiello, “Rosiglitazone and delayed onset of proliferative diabetic retinopathy,” Archives of Ophthalmology, vol. 126, no. 6, pp. 793–799, 2008.

- F. Osakada, H. Ikeda, Y. Sasai, and M. Takahashi, “Stepwise differentiation of pluripotent stem cells into retinal cells,” Nature Protocols, vol. 4, no. 6, pp. 811–824, 2009.

- R. A. Kowluru and P. S. Chan, “Oxidative stress and diabetic retinopathy,” Experimental Diabetes Research, vol. 2007, Article ID 43603, 12 pages, 2007.