ophthal Focus

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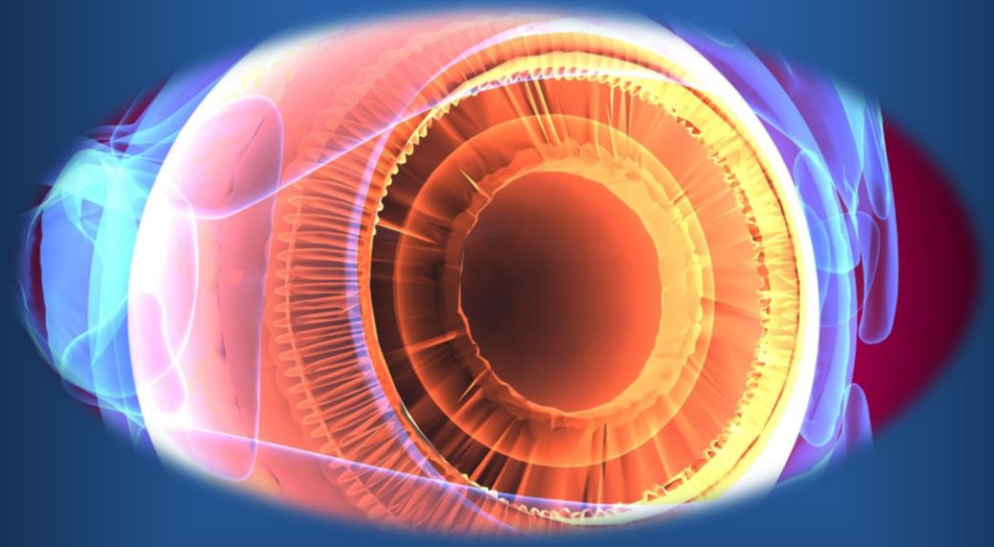


Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you 'Ophthal Focus' which contains latest and interesting news in the field of Ophthalmology.

This issue contains

- Stargardt Disease and Microperimetric Changes
- Association between Deep-layer Microvasculature and Preperimetric Glaucoma Patients
- Delayed Macular Hole with Inverse Pseudohypopyon Post Silicone Oil Removal

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in
Looking forward to your valuable feedback

Best Regards,
Medical Team, Micro Labs Limited

Stargardt Disease and Microperimetric Changes

Stargardt disease type 1 (STGD1) is caused by pathogenic mutations in the ABCA4 gene (OMIM 601691) and leads to atrophic-appearing macular lesions and variable loss of best-corrected visual acuity (BCVA) to often from 20/20 to 20/400 or worse.

This study assessed longitudinal changes in microperimetric sensitivity during a 12-month period and their association with various parameters in patients with STGD1 and the yearly rate of change of macular function in patients with STGD1 using microperimetry.

Microperimetry may serve as a useful functional outcome parameter for clinical trials aimed at slowing the progression of STGD1

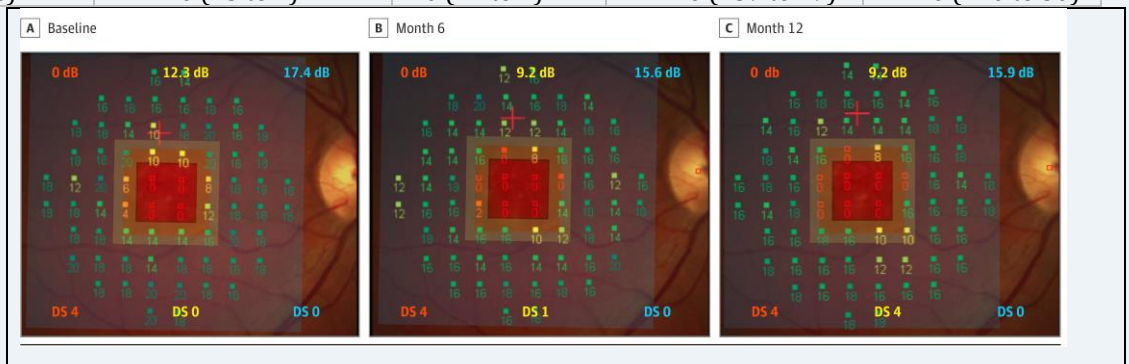
This multicenter prospective cohort study was conducted in a international selection of tertiary referral centers from October 21, 2013, to February 15, 2017. The study included participants with ABCA4-related STGD1 who were enrolled in the Natural History of the Progression of Atrophy Secondary to Stargardt Disease (ProgStar) study at baseline. Data were analyzed from February 16, 2017, to December 1, 2019. ABCA4-related STGD1 with a minimum lesion size on fundus autofluorescence and a minimum visual acuity. Main outcomes and measures were changes in overall macular sensitivity (MS), deep scotoma count, number of points that tested normal, and location-specific sensitivity changes.

Among the 359 eyes from 200 patients (87 [43.5%] men; mean [SD] age, 33.3 [15.2] years) who underwent microperimetry examination graded at baseline and month 12, the mean (SD) yearly change in MS was −0.68 (2.04) dB (95%CI, −0.89 to −0.47 dB; P < .001), and deep scotoma points increased by a mean (SD) of 1.56 (5.74) points per year.

The points with sensitivity of 12 dB or higher decreased in sensitivity by a mean (SD) of −3.01 (9.84) dB (95%CI, −4.03 to −1.99 dB; P < .001). The mean (SD) yearly change in MS was not significantly different between the eyes with a grading of good or fair pattern placement at both visits (−0.67 [2.1] dB) and the eyes with a poor pattern placement during at least 1 visit (−0.64 [2.2] dB) (P = .91).

Table: Location-Specific Changes in Microperimetric Variables From Baseline to 1 Year

Variable	Foveal center	Inner ring	Outer ring	Overall
Change in mean sensitivity, dB				
Mean (SD)	−0.89 (3.04)	−1.1 (2.3)	−1.1 (2.1)	−1.1 (1.9)
Median (range)	0	−0.83	−1.06	−1.15
	(−14.5 to 9.25)	(−6.5 to 8.8)	(−6.5 to 5.8)	(−5.9 to 4.8)
Change in deep scotoma points				
Mean (SD)	0.29 (0.88)	1.0 (1.8)	1.0 (2.7)	2.3 (3.9)
Median (range)	0 (−2 to 3)	0 (−3 to 6)	0 (−10 to 10)	2.0 (−10 to 15)
Change in relative scotoma points				
Mean (SD)	−0.08 (0.98)	−0.42 (2.3)	1.9 (8.1)	1.4 (9.0)
Median (range)	0 (−2 to 3)	0 (− 6 to 6)	1.0 (−27 to 36)	1.0 (−27 to 36)
Change in normal points				
Mean (SD)	−0.21 (0.87)	−0.60 (2.1)	−2.9 (8.5)	−3.7 (9.7)
Median (range)	0 (−3 to 2)	0 (−7 to 7)	−2.0 (−39 to 29)	−2.0 (−40 to 30)



Location-Specific Outcome Measures for Microperimetry in Patients With Stargardt Disease

This study showed that MS and the number of deep scotoma points had measurably changed after follow-up of approximately 1 year. Microperimetry may serve as a useful functional outcome parameter for clinical trials aimed at slowing the progression of STGD1.

Source: Schönbach EM et al. JAMA Ophthalmol. Published online May 28, 2020. doi:10.1001/jamaophthalmol.2020.1735.

Association between Deep-layer Microvasculature and Preperimetric Glaucoma Patients

Preperimetric glaucoma (PPG) is defined as the presence of characteristic glaucomatous changes in the optic disc and increased vulnerability to damage in the retinal nerve fiber layer (RNFL), without the presence of visual field defects detectible with standard automated perimetry. This study compared disease severity between preperimetric primary open-angle glaucoma (POAG) patients with and without deep-layer microvasculature dropout.

Deep-layer microvasculature dropout was observed in a considerable number of preperimetric POAG eyes

Ninety-four eyes of 94 preperimetric POAG patients with β-zone parapapillary atrophy (βPPA) were categorized according to the presence of deep-layer microvasculature dropout defined as a complete loss of microvasculature within the choroid or scleral flange on optical coherence tomography angiography. Parameters representing disease severity, that is, visual field (VF) mean deviation (MD), global and sectoral (6-sector) retinal nerve

fiber layer (RNFL) thickness, and other factors including age, focal lamina cribrosa (LC) defect, width of βPPA with and without Bruch membrane (BM) (βPPA+BM and βPPA–BM), and optic disc hemorrhage were compared between eyes with and without dropout.

Deep-layer microvasculature dropout was observed in 33 preperimetric POAG eyes (35.1%). Eyes with dropout had significantly thinner RNFL in all areas except the inferonasal sector, worse VF MD, and higher prevalence of focal LC defect, and larger βPPA–BM ($P<0.05$), whereas the 2 groups did not differ in age, disc hemorrhage, or βPPA+BM width ($P>0.05$). In the multivariable logistic regression, worse VF MD [odds ratio (OR), 1.485; $P=0.045$], thinner RNFL (OR, 1.141; $P<0.001$), and higher prevalence of focal LC defect (OR, 6.673; $P<0.001$) were significantly associated with dropout.

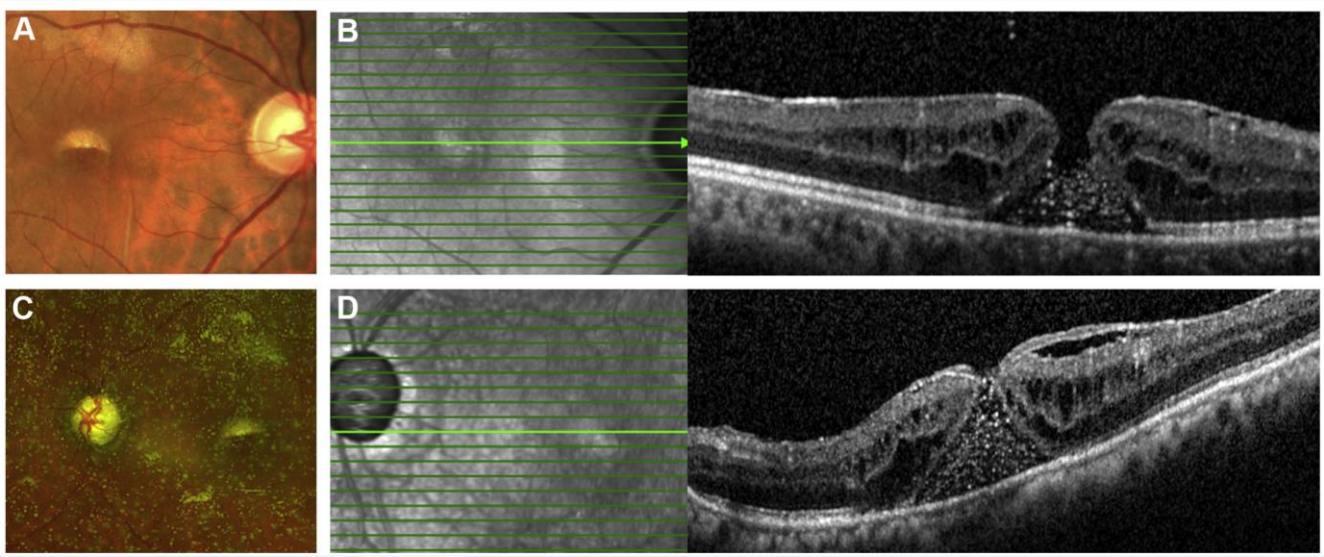
Deep-layer microvasculature dropout was observed in a considerable number of preperimetric POAG eyes, and worse disease severity was associated with dropout. Future studies elucidating the pathogenic role of deep-layer microvasculature dropout in the development and progression of glaucoma are warranted.

Source: Suh MH et al. J Glaucoma. 2020 Jun;29(6):423-428. doi: 10.1097/IJG.0000000000001489.

Delayed Macular Hole with Inverse Pseudohypopyon Post Silicone Oil Removal

Two patients underwent vitrectomy with silicone oil (SO) tamponade for rhegmatogenous retinal detachment followed by SO removal 3 months later. After an uneventful period (6 years), they presented with a macular hole with residual emulsified SO droplets that resembled an inverse

pseudohypopyon. (A) Fundus photograph of the first patient showing hyperreflective subretinal emulsified SO droplets layered in the superior part of the macular hole. (B) Corresponding OCT image showing a macular hole with subretinal dot-like hyper-reflective material suggestive of emulsified SO droplets. (C) Ultra-widefield image of the second patient showing emulsified SO in the vitreous and a similar submacular inverse pseudohypopyon and (D) the corresponding OCT line scan.



Source: Babu N et al. Ophthalmol Retina. 2020 May;4(5):470. doi: 10.1016/j.oret.2020.01.002.