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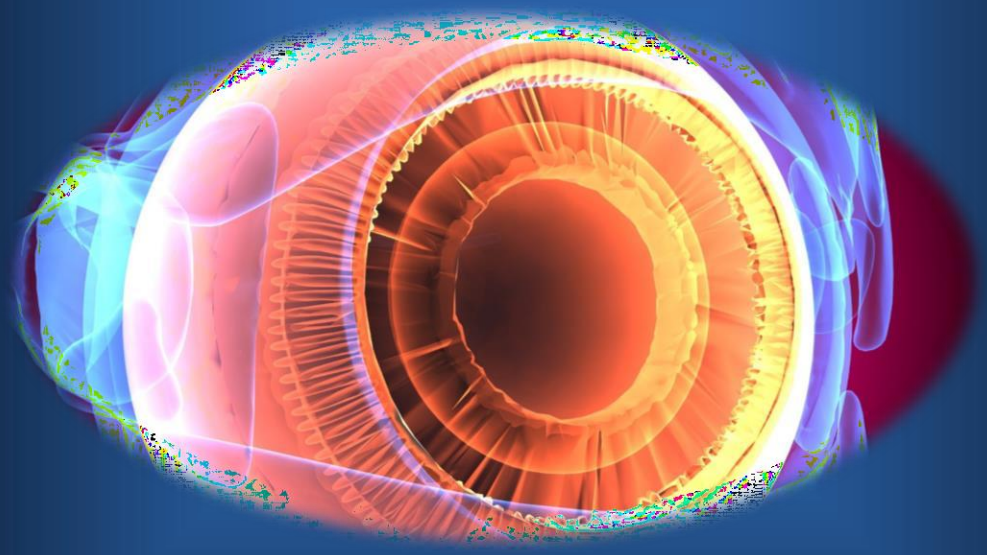


Dear Doctor,

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

- Detection of COVID-19 Viral Material on Environmental Surfaces of an Ophthalmology Examination Room
- Endolaser less vitrectomy with aflibercept for proliferative diabetic retinopathy-related vitreous hemorrhage (LASER LESS TRIAL)
- Effect of Refractive Astigmatism on All-Distance Visual Acuity in Eyes with a Trifocal Intraocular Lens

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

Detection of COVID-19 Viral Material on Environmental Surfaces of an Ophthalmology Examination Room

The COVID-19 is a significant heath burden. This pandemic poses a particular threat to health care professionals; however, there appear to be no objective data that demonstrate the risks of encountering individuals carrying the virus asymptomatically in the case of maintained elective examinations. The study was conducted to investigate the presence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on the environmental surfaces of an ophthalmology examination room after visits by patients who were asymptomatic and had passed COVID-19 triage.

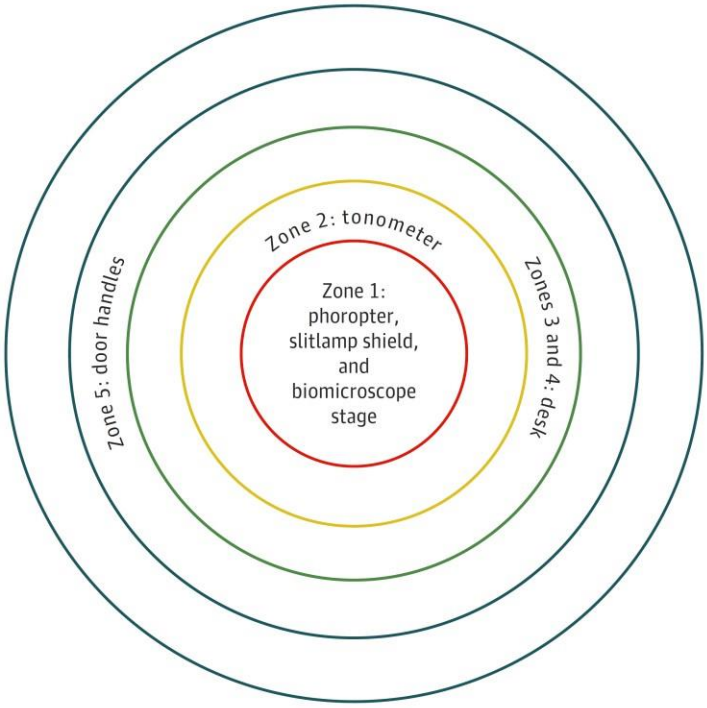
This study showed the presence of COVID-19 viral material in a circle 1 m in diameter around where the patients sat.

This is a quality improvement study conducted 1week after the first officially confirmed COVID-19 case in İzmir Tepecik Training and Research Hospital, İzmir, Turkey. A triage system was used to determine the risk of COVID-19 from patients who were asymptomatic and presented for examination in an ophthalmology clinic. Real-time polymerase chain reaction testing was used to detect the presence of viral RNA material in samples from the biomicroscope stage, slit lamp breath shield, phoropter, tonometer, and door handles. The first group of samples was taken before the beginning of the examinations, and the second group of the samples was taken after the last patient had left the room. The main outcome was the presence of viral material on surfaces in 5 circular zones with a diameter of 1meach around where the patients sat.

Twenty-nine patients came to the hospital for an eye examination; 7 were directed for COVID-19 tests following triage and did not come to the examination room. The remaining 22 patients came to the eye examination

room, along with 9 companions and 1 health care professional. This health care worker was not symptomatic. Thus, 31 visitors entered the room, of whom 22 underwent ophthalmic examinations. The mean (SD) examination time was 9 (4) minutes (range, 5-13 minutes).

Fourteen samples were collected from the surfaces in the examination room. All 7 samples taken before the beginning of the examinations had negative results. While 5 of 7 samples taken after the last patient had left the room had negative results, 2 samples obtained in zone 1, from the slit lamp shield and phoropter, were found to be positive for COVID-19 viral material. The negative sample that was closest to the patient was taken in zone 2, at 1.5 m distance. The other negative samples were from 3 to 4mand 5m, respectively.



Considering the patient in the center of the circles, each circle was determined to be 1 m distant from the previous circle. Zone 1 included a slitlamp shield, phoropter, and biomicroscope stage; zone 2, a tonometer; zones 3 and 4, a desk; and zone 5, the door handles.

Despite triage systems to exclude patients with coronavirus disease 2019, viral material was found on Ophthalmology examination room surfaces; however, the infectivity of the virus samples was unknown. This study showed the presence of COVID-19 viral material in a circle 1 m in diameter around where the patients sat. However, real-time polymerase chain reaction could only detect viral material, not the infectivity of these virus samples.

Source: Aytoğan H et al. JAMA Ophthalmol. Published online 2020 August. doi:10.1001/jamaophthalmol.2020.3154

Endolaser less vitrectomy with aflibercept for proliferative diabetic retinopathy-related vitreous hemorrhage (LASER LESS TRIAL):1-Year Results.

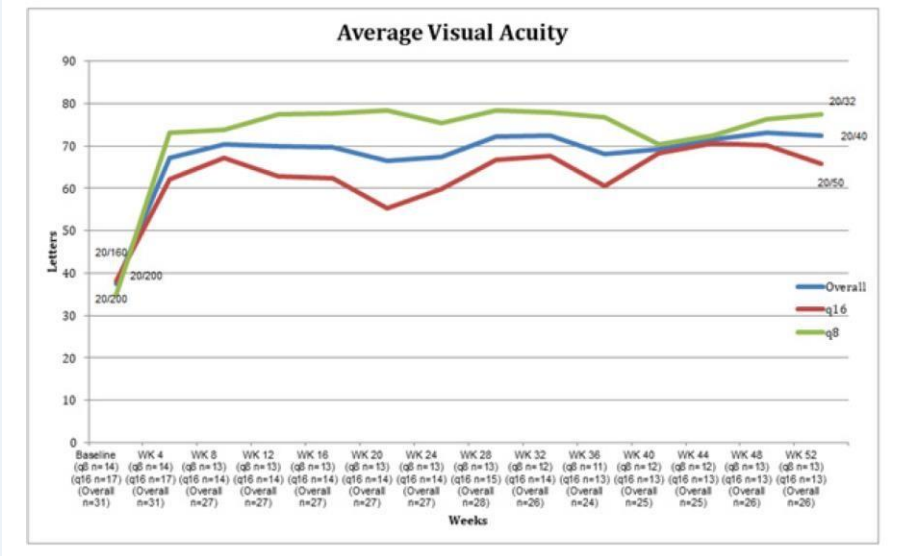
Intravitreal injection of anti-vascular endothelial growth factor (VEGF) agents is now established as optimal therapy for center involved diabetic macular edema (DME). Anti-VEGF's ability to reduce retinal neovascularization during DME treatment has led to investigation of anti-VEGF therapy for PDR and PDR-related vitreous hemorrhage. For over 4 decades, PRP has remained the standard therapy for PDR. However, anti-VEGF therapy has emerged as an alternative therapy for PDR eyes not requiring vitrectomy.

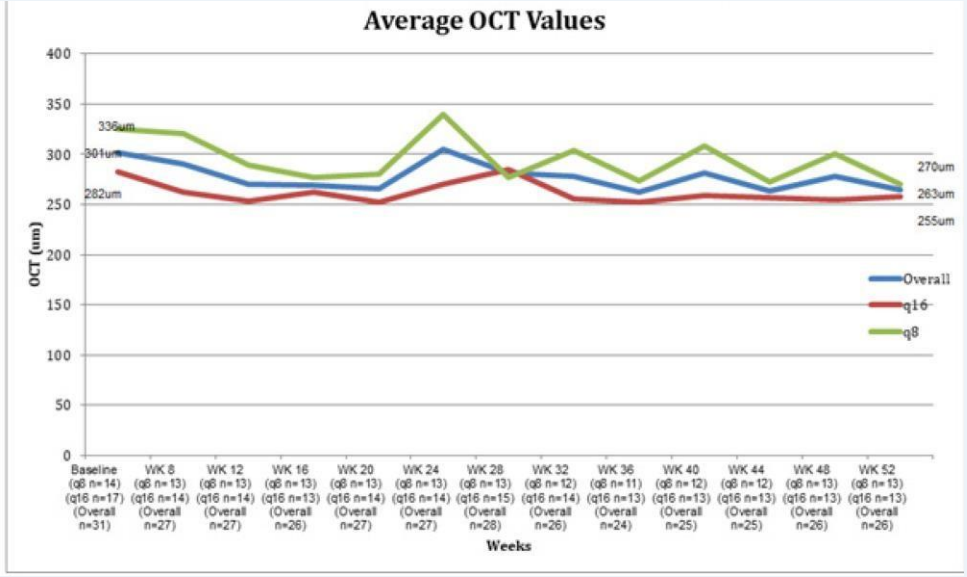
Endolaserless vitrectomy with aflibercept demonstrates 52-week safety with significant VA improvement.

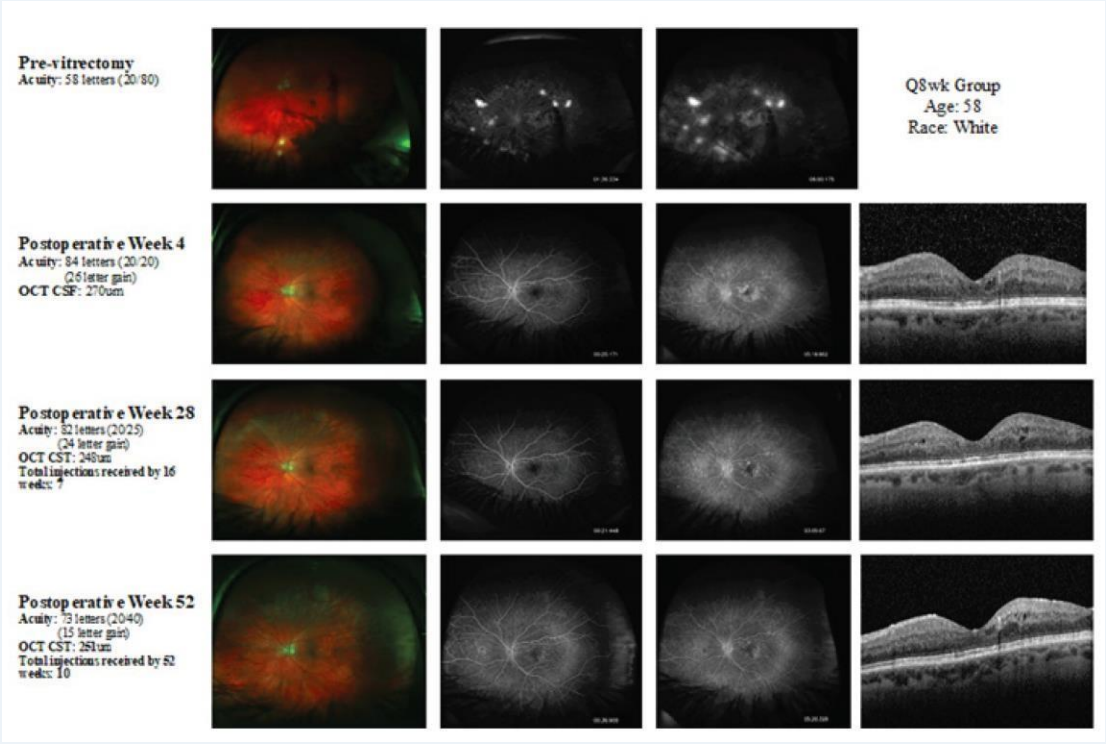
This study reports the 1-year safety and efficacy results of vitrectomy without endolaser for proliferative diabetic retinopathy (PDR)-related vitreous hemorrhage (VH). All eyes received one preoperative and intraoperative IAI (2 mg). The q8week group received postoperative IAI

every 4 weeks through week 16 followed by q8week IAI. The q16week group received postoperative IAI every 4 weeks through week 8 followed by q16week IAI. All patients were examined every 4 weeks; PRN IAI for PDR progression or diabetic macular edema (DME) was allowed.

Thirty-one eyes from 40 patients were randomized. Through 52 weeks, endophthalmitis, progression of traction retinal detachment, iris/angle neovascularization and neovascular glaucoma were not observed. The q8week and q16week groups received an average of 8.4 and 5.4 injections, respectively, through 52 weeks. Adverse events at any time through 52 weeks such as worsened visual acuity>30 letters (6 eyes), new rhegmatogenous retinal detachment (1 eye), and recurrent VH (4 eyes) occurred infrequently and were more common in the q16week group. Preoperative average visual acuity (VA) was 37 letters (20/200) for randomized eyes. Endolaserless vitrectomy resulted in statistically significant 52-week visual acuity 33 letter gain to 72 letters (20/40). Visual acuity outcomes favored (not statistically significant) the q8week group where average acuity was 77 letters (20/32) with a 52-week 40 letter gain versus 66 letters (20/50) with a 52-week 24 letter gain in the q16week group.







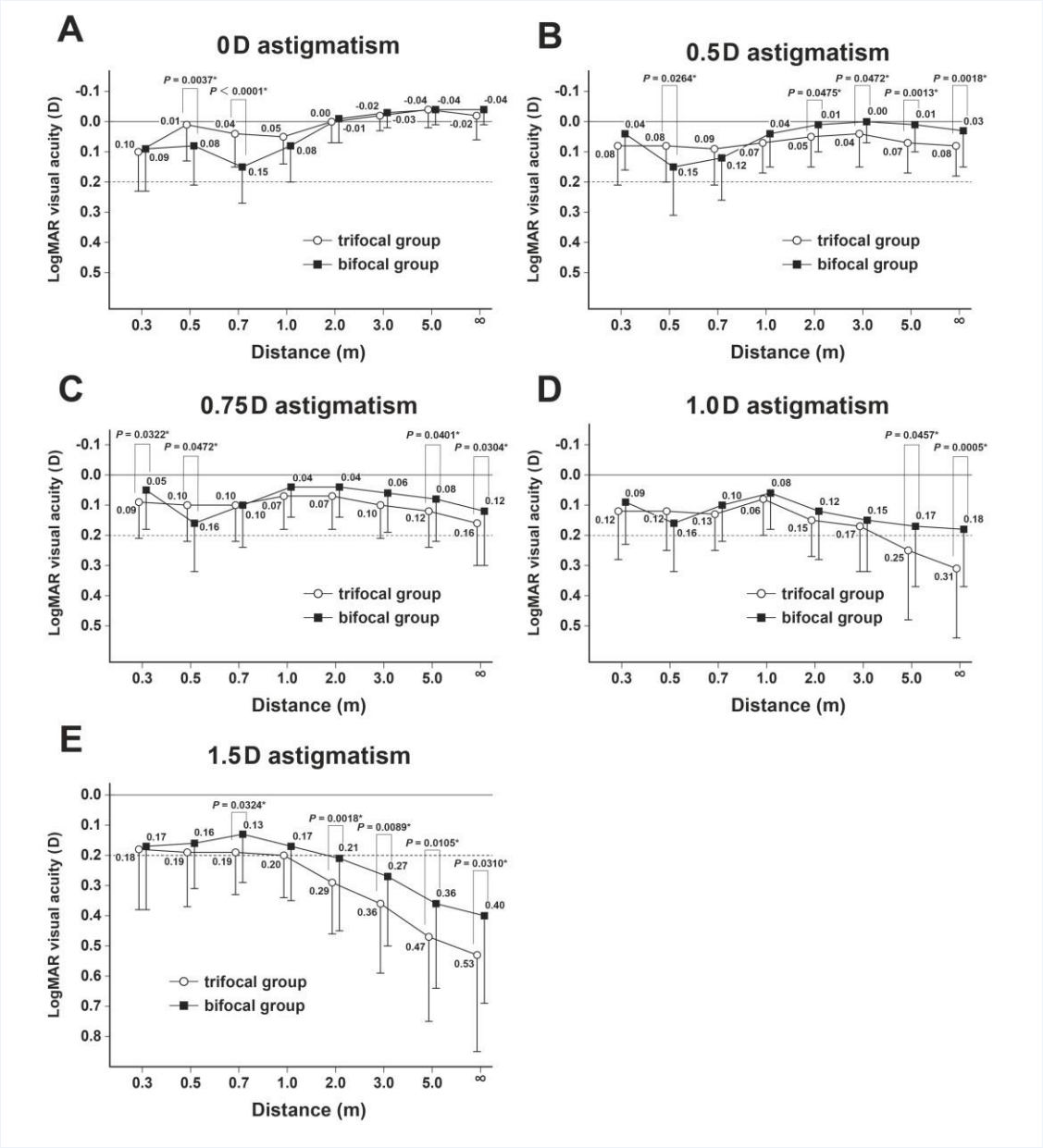
Source: Marcus DM et al. J Clin Ophthalmol 2020. 4(2): 254-265

Effect of Refractive Astigmatism on All-Distance Visual Acuity in Eyes with a Trifocal Intraocular Lens

The cross-sectional study investigated the effect of refractive astigmatism on all-distance visual acuity (VA) in eyes implanted with a diffractive trifocal or bifocal intraocular lens (IOL). Fifty eyes with trifocal IOLs (Alcon PanOptix), and 50 eyes with bifocal IOLs (ReSTOR +3D) were enrolled. After simulating astigmatism by adding cylindrical lenses of 0, 0.5, 0.75, 1.0, and 1.5 diopters (D), the corrected logarithm of minimal angle of resolution (logMAR) VA was measured using an all-distance vision tester.

Mean VAs at most distances significantly worsened in proportion to the added astigmatism (P≤0.0111) with no significant difference in near VA at 0.3 m in the trifocal group or in intermediate VA at 0.7 m in the bifocal group. Mean intermediate VA at 0.5 m was significantly better in the trifocal group than in the bifocal group when the astigmatism was 0.75D or less (P≤ 0.0472), but distance VA at ∞ and 5.0 m was significantly worse in the trifocal group when the astigmatism was 0.5D or more (P≤0.0457). Useful mean logMAR VA of 0.20 at all distances was achieved when the astigmatism was 0.75D or less in the trifocal group and 1.0D or less in the bifocal group. All-distance VA, particularly distance VA, worsened more in proportion to astigmatism with a trifocal IOL than with a bifocal IOL. Useful VA was achieved when the astigmatism was 0.75D or less with a trifocal IOL, suggesting that astigmatism correction is necessary when astigmatism is more than 0.75D

All-distance VA, particularly distance VA, worsened more in proportion to astigmatism with a trifocal IOL than with a bifocal IOL



Comparison of the mean (± standard deviation) corrected logarithm of minimal angle of resolution visual acuity (logMAR VA) from far to near distances between eyes implanted with a trifocal IOL (trifocal group) or a bifocal IOL (bifocal group).

A. No astigmatism (0D of astigmatism); Mean intermediate logMAR VA at 0.5 and 0.7 m was significantly better in the trifocal group than in the bifocal group, while VA at the other distances did not differ significantly. B. (0.5D of astigmatism) and C. (0.75D of astigmatism); Intermediate VA at 0.5 m was significantly better in the trifocal group than in the bifocal group, while distance VA at ∞, 5.0, 3.0, and 2.0 m was significantly worse in the trifocal group. D. 1.0D of astigmatism; Distance VA at ∞ and 5.0 m was significantly worse in the trifocal group, while VA at other distances did not differ significantly between the groups. E. 1.5D of astigmatism; distance VA at ∞, 5.0, 3.0, and 2.0

m, and intermediate VA at 0.7 m was significantly worse in the trifocal group than in the bifocal group.*Statistically significant difference between the trifocal and bifocal groups.

In conclusion, impairment of VA due to postoperative astigmatism, particularly distance VA, is more prominent in eyes implanted with a trifocal IOL than in eyes implanted with a bifocal IOL. The trifocal IOL provides useful VA at all distances when the refractive astigmatism is 0.75D or less. Clinically, when the residual astigmatism is assumed to be greater than 0.75D, surgeons should perform astigmatism correction procedures, including the use of an IOL with a toric component and a corneal relaxing incision.17-22 Otherwise, bifocal IOLs might be a better selection for eyes that are assumed to have a postoperative astigmatism within 0.75D and 1.0D. Because the present study was a simulation study, however, the effect of residual refractive astigmatism should be confirmed in actual postoperative eyes implanted with the trifocal IOL. Further studies are necessary to examine the effect of residual astigmatism on the performance of trifocal IOLs.

Source: Hayashi K et al. American J Ophthal. 2020 Aug. online ahead of print. https://doi.org/10.1016/j.ajo.2020.07.051