

TURKISH JOURNAL OF OPHTHALMOLOGY



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EDITORIAL

2018 Issue 4 at a Glance:

This issue of our journal includes six original articles, a review, and four case reports we believe you will read with interest, selected from various areas of ophthalmology on topics concerning the cornea, contact lenses, glaucoma, the retina, and neuro-ophthalmology.

Keratoconus is a progressive, non-inflammatory degenerative disease in which the cornea gradually thins and becomes cone-shaped. Collagen cross-linking (CXL) is widely used to arrest progressive keratoconus. Küçümen et al. used the Ocular Response Analyzer (ORA) to assess corneal biomechanical changes after CXL in 35 eyes of 30 patients with progressive keratoconus and reported statistically insignificant increases in corneal hysteresis and corneal resistance factor and a decrease in central corneal thickness (see pages 160-165).

Çavdarlı and Topçu-Yılmaz determined that daily use of high oxygen permeable and low modulus silicone hydrogel spherical and toric soft contact lenses for 12 months caused no significant changes in corneal and anterior chamber parameters (see pages 166-170).

Gobeka et al. also utilized the ORA to compare corneal biomechanical parameters in both eyes of keratoconus patients who underwent unilateral penetrating keratoplasty (PKP). They reported that corneal hysteresis, corneal resistance factor, corneal-compensated intraocular pressure (IOP), Goldmann-correlated IOP, IOP measured by applanation, and central corneal thickness were significantly higher in the PKP eye than the fellow eye, with corneal biomechanical properties approaching normal values after PKP (see pages 171-177).

Optical coherence tomography (OCT) provides objective and reproducible measurements of the peripapillary retinal nerve fiber layer (RNFL) and the optic nerve head (ONH), and is among the main imaging modalities used to show glaucomatous structural damage for early diagnosis and progression monitoring. With the fovea-disc (FoDi) alignment software in the spectral domain OCT Spectralis (Heidelberg Engineering GmbH, Heidelberg, Germany), RNFL thickness is measured by automatically detecting the fovea and optical disc margins and delineating quadrants based on the anatomical axis connecting the ONH center and the fovea,

thus eliminating rotational errors. Tuncer and Altuğ used this new FoDi software to investigate interindividual differences in the angle between the axis connecting the fovea center and optic disc center and the horizontal meridian through the ONH center in 260 eyes of 133 patients with suspected or diagnosed glaucoma. The angle of deviation of the fovea-disc axis from the horizontal axis (FoDi angle) ranged from -24.40° to $+11.60^{\circ}$, with an average of $-6.43 \pm 4.9^{\circ}$. The authors suggest that discrepancies between the anatomic axis and horizontal axis in glaucoma patients may affect RNFL thickness measurements and lead to errors in early glaucoma diagnosis (see pages 178-184).

Kıyılıoğlu et al. describe a new pupillometry system they developed for evaluation of pupillary light reflexes. They demonstrated that pupil area can be accurately measured in video images obtained with infrared and white light reflected outside the pupil, and reported 87% and 86.8% reproducibility of the measurements for short (1 second) and long (2 second) stimuli, respectively. However, the authors emphasized that further development of the apparatus is necessary for it to be a cost-effective alternative (see pages 185-189).

Vascular endothelial growth factor A (VEGF-A) is the main mediator of angiogenesis and is associated with increased vascular permeability in vascular retinal diseases. Anti-VEGF agents block various types of VEGF when administered intravitreally, reduce the permeability of nascent vessel walls, and to lead to a reduction in edema of the retinal layers. Şahiner et al. applied aflibercept (0.5 mg/mL), bevacizumab (0.3125 mg/mL) and ranibizumab (0.125 mg/mL) to retinal pigment epithelium cell cultures isolated from the enucleated eyes of New Zealand white rabbits. After 72 hours of drug exposure, the treated cells and controls were compared in terms of viability, apoptosis, proliferation, and senescence. Cultures treated with aflibercept exhibited a decrease in apoptosis and increase in viability ($p < 0.05$), while cultures treated with bevacizumab and ranibizumab showed significantly increased apoptosis and reduced viability compared to the control group ($p < 0.05$). There were no differences between the groups in terms of proliferation or senescence ($p > 0.05$) (see pages 190-195).

For this issue, Gábor Holló, who has numerous previous studies in the literature, prepared an extensive review encompassing current and potential future applications

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of optical coherence tomography angiography (OCTA) in glaucoma. The principle of measurement in OCTA is based on split spectrum amplitude decomposition algorithm, which detects red blood cell motion independent of direction. Vascular dysfunction is common in glaucoma patients, and RNFL peripapillary vessel density (angioflow vessel density) and macular superficial perifoveal vessel density are measured using OCTA, with high reproducibility demonstrated in previous studies. Vessel density is the perfusion area expressed as the percentage of the area examined or of predetermined sectors in the retinal layer being investigated. Studies have shown a relationship between vessel density and glaucoma damage. In the future, OCTA will continue to be an exciting clinical research area used in the diagnosis and follow-up of glaucoma patients (see pages 196-201).

Sarcoidosis can affect multiple organs and is histologically characterized by non-caseified granulomas. In the first case report of this issue, Tanyıldız et al. diagnosed neurosarcoidosis in a young female patient with bilateral granulomatous anterior uveitis, vitritis, optic neuropathy, and unilateral macular ischemia based on the results of mediastinal lymph node biopsy, cranial magnetic resonance imaging, and lumbar puncture. She was successfully treated with high-dose intravenous followed by oral methylprednisolone, and methotrexate (see pages 202-205).

Papillophlebitis is a rare ocular disease of unknown etiology that is characterized by retinal hemorrhage, optic disc edema, and tortuosity of the retinal vessels. Unlike classic central retinal vein occlusion, it is seen in healthy patients younger than 50 years of age. Guillain-Barre syndrome (GBS), an immunologically mediated acute polyneuropathy that involves motor neurons and causes paralysis, is the

most common cause of acute muscle weakness associated with peripheral neuropathy in adults. In the second case report, Çoban Karataş and Soylu discuss the clinical findings, diagnostic tests, and effectiveness of intravenous immunoglobulin therapy in a patient with papillophlebitis possibly associated with GBS (see pages 206-208).

Sympathetic ophthalmia (SO) is bilateral granulomatous inflammation of the uvea following trauma or surgery. Choroidal neovascular membrane (CNV) is a rare complication and can have a negative impact on vision. Saatçi et al. observed type 2 CNV on fundus fluorescein angiography (FFA) and OCT in a 38-year-old patient taking systemic steroid therapy for SO, and report favorable anatomic and functional outcomes after treatment with 5 injections of 2 mg intravitreal aflibercept (see pages 209-211).

In the final case report, Kahraman et al. present the clinical findings, FFA, and family screening results of a 49-year-old male patient with familial exudative vitreoretinopathy (AEVR) and discuss the case in the context of the literature. AEVR is a rare hereditary disease that affects retinal vascular development, and can manifest clinically with avascular peripheral retina, neovascularization, fibrosis, posterior pole traction, retinal folds, and retinal detachment. The authors emphasized the key importance of screening family members when diagnosing AEVR (see pages 212-214).

**Respectfully on behalf of the Editorial Board,
Banu Bozkurt, MD**