# At a glance

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## Humphrey matrix frequency doubling perimetry

Matrix perimetry uses frequency doubling technology (FDT) for selectively testing the function of magnocellular subtype of retinal ganglion cells. Clement *et al* investigated the performance of Humphrey matrix perimetry for detecting glaucomatous visual-field loss in a prospective case control study (115 POAG and 33 normal controls). Each participant performed SITA 24-2 (standard automated perimetry) and then threshold 24-2 matrix perimetry. The matrix perimetry sensitivity and specificity were up to 100% for moderate and advanced glaucomatous visual-field loss. However, matrix perimetry was less sensitive (87.3%) for detecting early glaucomatous visual-field loss compared with SITA 24-2 perimetry. *See page 581*

## Projection OCT fundus imaging

Projection OCT generates en face fundus images which can be correlated with fundus photography and fluorescein angiography. Gorczynska *et al* used a high-speed, 3.5 µm resolution OCT prototype instrument to image 83 patients with non-exudative AMD. Projection OCT fundus images were generated from 3D OCT data by selectively summing different retinal depth levels. The authors observed that projection OCT fundus imaging visualises outer retinal pathology (drusen morphology, photoreceptor impairment and pigmentary abnormalities) not visible with standard fundus imaging. *See page 602*

## Pharmacogenetics of complement factor H (Y402H)

Thymine-to-cytosine (T-to-C) transition in the complement factor H gene (*CFH*, Y402H) is strongly associated with AMD. Lee *et al* investigated whether *CFH* genotypes have a pharmacogenetic effect on the treatment of exudative AMD with ranibizumab. AMD phenotypes were characterised in 156 patients and each patient was genotyped for the single nucleotide polymorphism rs1061170 (Y402H) in the *CFH* gene. Patients homozygous for the *CFH* Y402H risk allele had 37% higher risk of requiring additional ranibizumab injections (p = 0.04). The authors conclude that determining patients' *CFH* genotype may be helpful in tailoring treatment for exudative AMD. *See page 609*

## Socio-economic deprivation and visual acuity at presentation in AMD

Acharya *et al* evaluated the influence of socio-economic factors on visual acuity (VA) at presentation in exudative AMD. 244 newly diagnosed patients were included. The Scottish Index of Multiple Deprivation (SIMD) score was determined from patients' home address. Age, location and type of choroidal neovascularisation, but not socio-economic deprivation, were associated with VA at presentation. *See page 623*

## Doppler Fourier-domain OCT

Wang *et al* measured total retinal blood flow in 10 normal human eyes using Doppler Fourier-domain optical coherence tomography (FD-OCT). Four pairs of circular scans that transected all retinal branch vessels around the optic nerve head were used. Total retinal blood flow was obtained by summing the flows in the branch veins. The mean total retinal blood flow was 45.6 µl/min (range 40.8 to 52.9 µl/min). The averaged flow speed was 19.3 mm/s. These flow values are within the range previously established by laser Doppler flowmetry. *See page 630*

## Retrobulbar haemodynamics in non-arteritic AION

Sanjari *et al* compared retrobulbar haemodynamics and ipsilateral carotid wall thickness by Colour Doppler imaging in 17 patients with unilateral non-arteritic AION with their contralateral side. On the side with non-arteritic AION, flow velocities in the ophthalmic arteries were decreased and carotid wall thickness were increased. These observations, counter to the expected increased velocity in the ophthalmic artery according to the Bernoulli's principle, may be indicative of failure of autoregulation. *See page 634*

## In vivo 3D confocal laser scanning microscopy

Zhivov *et al* performed in vivo 3D confocal laser scanning microscopy (CLSM) to visualise the corneal surface and epithelium in 10 human corneas (three normal, three with bullous keratopathy, three with PK and one with corneal erosion). 3D reconstruction and different visualization techniques (volume rendering, cross-section, en face view, oblique section and surface reconstruction) were performed to demonstrate alterations to corneal surface and epithelium. The authors conclude that visualisation of structural details were considerably superior to that obtained with a conventional CLSM. *See page 663*

## Ocular telemedicine

The use of telemedicine with transmission of fundus photos from rural clinics to a retina specialist within or outside Nepal could substantially improve patient care in Nepal. Ulrich *et al* used a Nidak-AFC 230 camera to photograph fundus pathology in 50 patients from rural Nepal. The images were uploaded to an internet server and evaluated at a reading centre in the USA by a retina specialist. The authors report on obstacles they encountered during first tests with telemedicine in Nepal. *See page 694*

## Flemish patients with X linked CSNB

Leroy *et al* identified the genetic defect in affected male patients from three Flemish families with complete CSNB. In the affected individuals, a novel NYX mutation, c.855delG, was identified. This deletion is predicted to lead to a frameshift mutation, p.Asp286ThrfsX62, causing a premature stop codon. The authors suggest that diagnostic testing for CSNB in the Flemish population should be initially directed towards the identification of this mutation. *See page 688*