Highlights from this issue

Frank Larkin, *Editor in Chief*

Myopia in school-aged children with preterm birth: the roles of time spent outdoors and serum vitamin D (*see page 468*)

In school-age preterm children, myopia is associated with the severity of retinopathy of prematurity and less time spent outdoors but not with serum vitamin D levels.

Outcomes of keratoprosthesis in eyes with limbal stem cell deficiency: the Boston type 1 keratoprosthesis versus the Aurolab keratoprosthesis (*see page 473*)

Outcomes of the Aurokeratoprosthesis, a low-cost keratoprosthesis device, in eyes with limbal stem cell deficiency is comparable to the Boston Type 1 keratoprosthesis.

Corneal endothelium in paediatric patients with uveitis: a prospective longitudinal study (*see page 479*)

This prospective longitudinal study shows that intraocular surgery for uveitis-associated complications leads to an increased rate of corneal endothelial cell density loss in children but uveitic disease activity itself does not.

Comparison of 13 formulas for IOL power calculation with measurements from partial coherence interferometry (*see page 484*)

Comparison of 13 formulae to calculate the intraocular lens power prior to surgery indicated that both new and older generation formulae can achieve good outcomes.

The accuracy of optical coherence tomography for diagnosing glaucoma: an overview of systematic reviews (*see page 490*)

Diagnostic accuracy of OCT in glaucoma as assessed by systematic reviews is suboptimal and overestimated due to case-control design of primary studies. The methodological quality of systematic review evaluating OCT for glaucoma detection is mixed.

SD-OCT peripapillary nerve fibre layer and ganglion cell complex parameters in glaucoma: principal component analysis (*see page 496*)

Ability of principal component analysis to discriminate diagnosis of glaucoma from healthy eyes was comparable to the OCT peripapillary retinal nerve fibre layer thickness and significantly better than macular ganglion cell complex measurements.

Factors associated with blindness three months following treatment for acute primary angle glaucoma (*see page 502*)

Risk factors for blindness at 3 months post-treatment of acute primary angle closure in China are education level, time from symptom to treatment and presenting IOP. The shorter the interval to control of IOP, the lower the risk of blindness.

A deep learning model to predict visual field in central 10 degrees from optical coherence tomography measurement in glaucoma (*see page 507*)

We predicted the central 10 degree visual field of patients with glaucoma from macular retinal thickness captured by optical coherence tomography using deep learning. It showed good prediction performance even in the point-wise manner.

Efficacy and safety of selective laser trabeculoplasty and pattern scanning laser trabeculoplasty: a randomised clinical trial (*see page 514*)

Pattern scanning laser trabeculoplasty was not superior to selective laser trabeculoplasty in lowering the intraocular pressure in patients with primary open-angle glaucoma or ocular hypertension over 12 months of follow-up.

Comparison of outcomes between Aurolab aqueous drainage implant placed in the superotemporal vs. inferonasal quadrant (*see page 521*)

The inferonasal quadrant is a viable location for aqueous shunt placement with similar efficacy and safety results to superotemporal placement at 2 years follow-up.

Microaneurysms visualisation using 5 different optical coherence tomography angiography devices compared with fluorescein angiography (*see page 526*)

The comparison between optical coherence tomography angiography devices to visualise retinal microaneurysms secondary to diabetic retinopathy revealed high variability compared with fluorescein angiography. This should be considered for future clinical trials as in clinical practice.

Characteristics of myopic traction maculopathy in myopic Singapore adults (*see page 531*)

Myopic traction maculopathy (MTM) was present in 0.9% of myopic eyes and 7.3% of highly myopic eyes. Myopic spherical equivalent, longer axial length, myopic macular degeneration and epiretinal traction were independent risk factors of MTM.

Association of alcohol intake with incidence and progression of diabetic retinopathy (*see page 538*)

In this longitudinal population of Asian participants with diabetes, baseline alcohol intake, particularly infrequent consumption, was independently associated with lower risk of developing diabetic retinopathy, compared with non-drinkers.

Cardiovascular risk in patients receiving ranibizumab for exudative age-related macular degeneration: a nationwide self-controlled case-series study (*see page 543*)

In this self-controlled case-series study, no increased risks of cardiovascular events were identified during the overall ranibizuamb-exposed period compared with baseline period. However, the risk of stroke was marginally elevated during ≥57 days exposed period.

Real world evidence on 5661 patients treated for macular oedema secondary to branch retinal vein occlusion with intravitreal anti-vascular endothelial growth factor, intravitreal dexamethasone or macular laser (*see page 549*)

Patients treated for branch retinal vein occlusion with better baseline vision than those enrolled in clinical trials maintain higher levels of vision when treated with anti-VEGF or dexamethasone. Patients treated with anti-VEGF maintain vision longer.

Analysis of choriocapillaris perfusion and choroidal layer changes in patients with chronic central serous chorioretinopathy randomised to micropulse laser or photodynamic therapy (*see page 555*)

Serial monitoring of choriocapillaris perfusion signal and choroidal thickness changes was undertaken in central serous chorioretinopathy patients following treatment by either MLT or PDT.

BMJ

Automated diagnoses of age-related macular degeneration and polypoidal choroidal vasculopathy using bi-modal deep convolutional neural networks (*see page 561*)

A novel deep convolutional neural network combining input from both colour fundus and optical coherence tomography performed well and was closest to the gold standard reference in multi-classification of subgroups of AMD and PCV.

Choroidal luminal and stromal areas and choriocapillaris perfusion are characterised by a nonlinear quadratic relation in healthy eyes (*see page 567*)

This study strongly supports the important role of choroidal medium-size and larger-size vessels and stroma in determining CC status in healthy eyes.

Incidence and phenotypical variation of outer retina-associated hyperreflectivity in macular telangiectasia type 2 (*see page 573*)

Outer retina associated hyperreflectivity were observed in MacTel type 2 eyes with photoreceptor loss. They present with a varied morphology in the outer retina, contain vessels and retinochoroidal anastomosis and were associated with hyperpigmentation.

Comparison of wide field swept-source optical coherence tomography angiography with ultra-widefield colour fundus photography and fluorescein angiography for detection of lesions in diabetic retinopathy (*see page 577*)

The study compared widefield SS-OCTA with ultra-widefield colour fundus photography (CFP) and fluorescein angiography (FA) for detecting diabetic retinopathy (DR) lesions. The combination of OCTA and CFP had same detection rate as FA.

Nuclear expression of BAP-1 in transvitreal incisional biopsies and subsequent enucleation of eyes with posterior choroidal melanoma (*see page 582*)

Patients with low nuclear BAP-1 expression in transvitreal biopsies of posterior choroidal melanoma had a significantly shorter metastasis-free survival (p=0.001). Eighty six percent of biopsies had an identical BAP-1 classification as a subsequent enucleation of the same eye, yielding a Cohen's kappa coefficient of 0.70.

Heterogeneity of GNAQ/11 mutation inversely correlates with the metastatic rate in uveal melanoma (*see page 587*)

Heterogeneity study of GNAQ/11 in uveal melanoma revealed that tumour with lower percentage of GNAQ/11 mutant cell was associated with higher metastatic rate.