

Highlights from this issue

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Low-voltage x-ray irradiation for AMD

Moshfeghi *et al* describe results of a Phase 1, non invasive 'radiation-first' combination treatment, with a low-voltage x-ray irradiation system (16 Gy) followed by as needed ranibizumab for neovascular AMD. Thirteen patients were enrolled and completed 12 months follow-up. There were no serious ocular/non-ocular adverse events or radiation-related ocular complications. Eleven patients lost <15 and 0 gained ≥ 15 ETDRS letters. The visual acuity stabilising effect was related to reduction in retinal thickness. (*see page 1320*)

Diquafosol versus sodium hyaluronate ophthalmic solutions for dry eyes

Takamura *et al* compared the efficacy and safety of 3% diquafosol ophthalmic solution with 0.1% sodium hyaluronate ophthalmic solution in 286 dry eye patients randomised to the treatment groups in a 1:1 ratio. After 4 weeks, the intergroup difference in the mean change from baseline in fluorescein staining score was -0.03 ; this verified the non-inferiority of diquafosol. The mean change from baseline in rose Bengal staining score was significantly lower in the diquafosol group, thus verifying its superiority. The incidence of adverse events was not significantly different between the groups (26.4% and 18.9% respectively). The authors conclude that diquafosol has high clinical efficacy and is well tolerated with a good safety profile. (*see page 1310*)

Oncolytic effect of adenovirus H101 combined with siBCL2 on uveal melanoma cell lines

Huang *et al* explored a potential synergy of downregulating Bcl2 pathway using a small interfering RNA (siBCL2) combined with H101 therapy on uveal melanoma (UM) cell lines. VUP cells (without elevation of Bcl2) exhibited greater sensitivity to adenovirus infection than OM431 cells (Bcl2 elevated cell line). Bcl2 expression

was markedly reduced by siBCL2 or siBCL2 plus H101. Combined treatment with siBCL2 and H101 produced substantial growth inhibition of OM431 cells by enhancing apoptosis and cell cycle arrest through Baxp53-induced apoptotic pathway. SiBCL2 and H101 could potentially serve as a novel targeted molecular therapy for UM. (*see page 1331*)

Myopic shift after sulcus fixation of foldable acrylic IOL

Lee *et al* identified factors affecting myopic shift after sulcus fixation of foldable acrylic IOLs in 91 eyes (91 patients). The type of IOL and axial length (AL) were analysed to identify differences between the predicted refraction values obtained using the SRK/T formula and the manifested refraction values. The mean myopic shift from the predicted refraction was -1.04 dioptres (D) ± 0.85 SD. The type of IOL did not affect the degree of myopic shift. However, as the AL increased, the myopic shift decreased. (*see page 1316*)

Orbicularis oculi muscle biopsy in suspected mitochondrial myopathy

Roefs *et al* performed diagnostic mitochondrial DNA (mtDNA) analysis of the orbicularis oculi muscle biopsy in three patients with chronic progressive external ophthalmoplegia (CPEO) phenotype who underwent ptosis surgery. mtDNA deletion analysis was performed in addition to routine histopathology, electron microscopy and immuno-histochemical analysis. Diagnostic large single mtDNA deletions were detected in all three cases. Orbicularis oculi muscle biopsy is useful in patients with CPEO to perform mtDNA analysis, thus avoiding a separate biopsy of skeletal muscle elsewhere. (*see page 1296*)

Variability of central retinal thickness

Caramoy *et al* studied the variability of central retinal thickness (CRT) and its concordance to the fellow eye of 316

subjects (632 eyes) over 60 years of age without macular pathology. Mean CRT was 280.22 μm and 281.02 μm for the right and left eyes, respectively. There was a strong concordance for all measured values between right and left eyes. Men had significantly thicker CRT than women. Up to 23 μm of difference between eyes was observed. To detect a change of at least 30 μm in CRT, a sample size of 90 or 176 per group is needed for a single-arm or double-arm study, respectively. (*see page 1325*)

Three-drug intra-arterial chemotherapy for intraocular retinoblastoma

Marr *et al* report outcomes with selective intra-arterial chemotherapy using simultaneous carboplatin, topotecan, and melphalan for advanced intraocular retinoblastoma in 26 eyes (25 patients). Seventeen patients (68%) had recurrence after prior intravenous chemotherapy with or without radiotherapy. At a mean follow-up of 14 months, all patients were alive and none developed metastatic disease. The Kaplan-Meier estimate of ocular survival at 24 months was 75% (95% CI) with retained electroretinogram function. (*see page 1300*)

Surgical intervention in intermittent exotropia

Buck *et al* describe surgical outcomes in 87 children (aged <11 years) with intermittent exotropia (X(T)) who underwent surgery. 35% of patients had excellent, 28% had fair and 37% had poor primary outcome. Preoperative and surgical characteristics did not influence primary outcome. Persistent over-correction occurred in 15% of children. Surgical dose was similar in those under- and over-corrected, suggesting that over-corrections cannot be avoided merely by adjusting surgical dose. A randomised controlled trial is needed to explore treatment options of intermittent exotropia (X(T)). (*see page 1291*)