**Retinopathy-migraine link**

People with a history of migraine and other headache problems appear to be at increased risk for retinopathy, according to the latest findings from a large epidemiological study. Researchers analysed the headache history and eye health of 10,902 men and women who participated in the landmark Atherosclerosis Risk in Communities (ARIC) study. The participants ranged in age from 51 to 71 at the time of their examinations. The 22 per cent of the study group who had a history of migraines and other headaches were up to 1.5 per cent more likely to have retinopathy than those with no headache history. This association persisted after controlling for diabetes, glucose levels, cigarette smoking, blood pressure, and use of blood pressure medications. The researchers report that the results suggest that problems in the circulatory system of small blood vessels may be an underlying factor. The findings are consistent with earlier studies linking both migraine and retinopathy with the occurrence of stroke.

KM Rose, Neurology, “Migraine and retinal microvascular abnormalities: The Atherosclerosis Risk in Communities (ARIC) study. The participants ranged in age from 51 to 71 at the time of their examinations. The 22 per cent of the study group who had a history of migraines and other headaches were up to 1.5 per cent more likely to have retinopathy than those with no headache history. This association persisted after controlling for diabetes, glucose levels, cigarette smoking, blood pressure, and use of blood pressure medications. The researchers report that the results suggest that problems in the circulatory system of small blood vessels may be an underlying factor. The findings are consistent with earlier studies linking both migraine and retinopathy with the occurrence of stroke.”

**BP- high tension glaucoma link**

Patients with high arterial pulse pressure may be at increased risk for high-tension open angle glaucoma, a Dutch study concludes. Researchers at the Academic Medical Centre, Amsterdam, and Erasmus Medical Centre, Rotterdam, the Netherlands, analysed data from 5,317 individuals, 215 of whom had definite or probable open-angle glaucoma and 5,102 of whom were disease free. The analysis found that high-tension open-angle glaucoma was associated with high pulse pressure, possibly with increased carotid arterial stiffness and, only in persons treated for systemic hypertension, with low diastolic perfusion pressure. Normal-tension open-angle glaucoma was associated with high diastolic blood pressure, whereas the association between normal-tension open-angle glaucoma and low diastolic perfusion pressure was inverted. This suggests that the mechanisms involved in the aetiology of high-tension open-angle glaucoma may be different from those in normal-tension open-angle glaucoma.


**New uveal melanoma target**

Uveal melanoma is the most common primary malignant ocular cancer in adults. Investigators now report the identification of receptors expressed by uveal melanoma that offer promising targets for diagnosis and treatment. Using novel monoclonal antibodies, the researchers analysed tissue samples to determine the expression of the MC1R receptor. They found that MC1R is expressed by uveal melanoma to a significantly greater extent than other melanoma markers. Combining MP1.1C11 or MP1.1B7, MC1R assays, they were able to detect 95 per cent of the tested melanoma tissues. This compares favourably with older assays such as MART-1 and gp-100, which found 67 per cent. The authors recommend the inclusion of MC1R in the panel of markers for diagnosing uveal melanoma. They note the therapeutic potential of MC1R-specific antibodies targeting cytokine-induced MC1R.

MN Lopez et al., Invest Ophthalmol Vis Sci, “Melanocortin 1 receptor is expressed by uveal malignant melanoma and can be considered a new target for diagnosis and immunotherapy”, 2007,48(3):1219-27.

**Alcohol may increase cataract risk in women**

A Swedish population-based prospective cohort study indicates there may be an association between alcohol consumption and the risk of cataract extraction in women. The study of 34,713 women aged 49 to 83 years found that women who drank had a seven per cent increased risk for developing cataract over those who never drank. This was true even after adjusting for age and other potential risk factors. The risk increased with increasing alcohol consumption.


**ESCRS Endophthalmitis Study**

Recognising that the population in Europe was aging faster than anywhere else, putting more people at risk for postoperative infective endophthalmitis, the ESCRs conducted a multicentre study to evaluate antibiotic prophylaxis of endophthalmitis. The preliminary results were presented at the annual ESCRs Congress in London. The final results now appear in the JCRS. The prospective randomised partially masked multicentre study recruited 16,603 patients at 24 centres across Europe. Intracameral cefuroxime appeared to reduce endophthalmitis risk nearly fivefold compared to standard treatment. Silicone IOL materials and the use of clear corneal incisions were associated with increased risk, while acrylic IOLs and scleral tunnel incisions were associated with lower risk. Based on these findings the researchers believe that the introduction of perioperative intracameral cefuroxime in cataract surgery across Europe could reduce the number of endophthalmitis infections by approximately 60,000 cases over the coming decade. If the additional factors identified are causes of increased risk, avoidance of silicone IOLs and the use of a scleral tunnel incision rather than a CCI would result in an even more marked reduction.

ESCRS Endophthalmitis Study Group, JCRS, “Prophylaxis of postoperative endophthalmitis following cataract surgery: Results of the ESCRs multicentre study and identification of risk factors”, Vol 33, Issue 6, 978-988.

**A vote for Fourier**

Wavefront-sensing has become an important part of corneal refractive surgery, particularly to correct lower-order and higher-order wavefront aberrations of the eye. While Zernike polynomials have formed the basis for current reconstruction of the Hartmann-Shack lenslet data in most commercially available systems, the Fourier transform approach represents an alternative. US researchers compared the two in a study evaluating the residual fit errors for wavefront measurements and corneal surfaces in virgin and post-surgery eyes using the Fourier transform version and Zernike 6th- and 10th-order expansions. They found that wavefront gradient fields reconstructed with Fourier transform produced significantly smaller residual fit errors than Zernike 6th-order in all groups and Zernike 10th-order in all eyes except post-myopic LASIK eyes. As corneal higher-order aberrations increased, higher residual surface fit errors were produced by Zernike 6th-order and 10th-order expansions but not by Fourier transform. The researchers note a need for study of the clinical implications of the study.


**Scheimpflug biometry**

The Pentacam (Oculus) uses a rotating Scheimpflug camera to image the anterior segment of the eye. It has become a popular tool for corneal topography, pachymetry, anterior chamber depth measurement, and lens densitometry. British researchers assessed the feasibility of using the device to determine intraocular lens power by measurement of the central optic thickness. They assessed 67 eyes one month after standard cataract surgery and implantation of an AcrySof (Alcon) IOL. They found that central IOL thickness measurements obtained with the Pentacam Scheimpflug camera were highly repeatable and closely correlated with the known IOL power. Based on these findings, the researchers believe that the Pentacam could prove useful for the determination of IOL power in cases of unexplained refractive error postoperatively, or when the IOL power in the first eye is not known when second eye surgery is needed.