ARVO round-up

As another annual conference for the Association for Research in Vision and Ophthalmology (ARVO) concludes in Florida, **Bill Harvey** takes a snapshot of some of the highlights

Thirty registered severely sight impaired patients have shown significant improvement in their ability to move about and undertake daily tasks after receiving an implantable retinal prosthetic device allowing them to visualise phosphenes. Subjects receiving the Argus II 'are able to detect light and do well with certain performance parameters', claimed **Dr Mark Humayun** of Southern California. Twenty-nine of the 30 patients were retinitis pigmentosa (RP) sufferers. This disease was also at the centre of another research project looking at the use of electrical stimulation therapy (EST) for treating RP.

The company Okuvision has been developing EST for some years and this year presented the first results of a sham-controlled pilot study looking at the trans-corneal application of electrical stimuli to treat early and intermediate RP. The group from Tuebingen University found a 20 per cent significant improvement in the field of vision of those patients receiving a 150 per cent of threshold stimulation. This suggests that electrical stimulation of the retina liberates growth factors which may delay retinal degeneration.

Where treatment has not been an option, a group from Pittsburgh have been developing a novel alternative to vision. In a study involving 21 blind and six normally sighted (but blindfolded) patients, subjects were fitted with a spectacle-mounted video camera coupled to a sensory array held in their mouths. Lead researcher **Professor Thomas Frieberg** explained 'electrical stimulation of the tongue results in a sensation akin to vision, and enables a perception of one's surroundings that can be useful'. Subjects were able to negotiate obstacles and navigate their way around a designated course. The prototype is not yet commercially available but may provide a cheaper and less invasive alternative to implantable retinal chips.

Disease

One of what may be a number of papers released this year looking at anti-VEGF treatment was presented by a team from Philadelphia. VEGF Trap-Eye is an intra-vitreally delivered fusion protein designed to bind to all forms of VEGF as well as to placental growth factor. Using the Copernicus OCT, the team followed patients with macular oedema subsequent to a central retinal vein occlusion over six months. Of those treated with Trap-Eye, 56.1 per cent gained at least three lines of acuity (15 or more letters) as compared with just 12.3 per cent of those receiving sham injections. A second study from Austria involving the fusion protein found that its injection at two-monthly intervals into patients with wet age-related macular degeneration (AMD) was comparable in outcome to one-monthly injections of Lucentis.

Rex Features

Does a raised BMI protect against glaucoma?

Many have been questioning whether the much more expensive licensed Lucentis has benefits over the 40 times cheaper off-licence Avastin anti-VEGF treatment for wet AMD. Presenting what may be one of many similar studies we will hear about in the coming months, a team from Ohio showed two-year data confirming their one-year findings. That is, the two treatments are 'generally' comparable. **Dr Daniel Martin** stated: 'Lucentis and Avastin were equivalent – in fact, virtually identical for visual acuity at all time points when administered in the same dosing regimen.'

Two studies from North Carolina have been highlighting links between cerebrospinal fluid pressure (CSFP) and primary open-angle glaucoma (POAG). One study has suggested that CSFP undergoes significant and sustained reduction after the age of 55 years, and this declines is matched well by the increase in prevalence of POAG. Many now consider CSFP should be considered as a possible risk factor. The second study looked at links between body mass index (BMI) and CSFP. As BMI increases, so does CSFP. This has led researchers to postulate the somewhat controversial view that a raised BMI may in fact be protective in keeping CSFP raised.

In a study looking at the established link between ethnicity and glaucomatous vision loss, a group from Stanford found, as expected, a strong link between the disease and individuals of Latino ethnicity with limited English proficiency and those of African ethnic origin with a family history of glaucoma. However, they also found that these groups were at the greatest risk of poor follow-up and non-compliance with medications. This should be borne in mind when attempting to improve compliance with treatment regimens, the study concludes.

Contact lenses

After 10 years of contact lens wear, patients are equally successful whether they are fitted as teenagers or children, a new study by **Jeffrey Walline** (Ohio) has found. 'This study further demonstrates that fitting children at younger ages has no harmful long-term effects,' Walline confirmed. Another study, this time from the Brien Holden Vision Institute and partly funded by Alcon, looked at the ability of contact lens storage case cleaning regimens to remove 'robust microbial biofilms'. The greatest cleaning effect was found with rinsing or soaking cases with multipurpose solution followed by tissue wiping and air drying (when compared to merely rinsing or soaking).

A new development worth looking out for is the ocular surface optical coherence tomography (OS-OCT) technique which researchers from Miami have shown allows the visualisation of contact-lens induced ocular surface compression and areas of localised pressure underneath a lens. The end for fluorescein pattern interpretation?