Diabetic management

In our second report from the Annual British Association of Retinal Screeners Conference, **Peter Mitchell** hears about developments in retinopathy management

A keynote presentation at the conference was the Topcon lecture delivered this year by **Professor Paul Dodson** (Aston University & Birmingham Heartlands Hospital) on the 'Medical management of diabetic retinopathy: any progress?'

'The goal is to prevent diabetic blindness now,' he began. The strategy is the provision of retinal screening, improved diabetic care, improved treatment uptake and new treatments for diabetes and diabetic retinopathy. A comparison of retinopathy levels between Birmingham and the Leopard Programme in Addis Ababa Ethiopia showed significantly higher levels of retinopathy, especially sight threatening retinopathy (referral rates are 5 to 9 per cent in Birmingham, 51 per cent with 20 per cent registerable as blind in Addis Ababa) indicating that proper management of diabetes and retinopathy has a huge impact on reducing the risk of progression to blindness.

The targets for medical management are HbA1c <7 per cent (USA <6.5 per cent), blood pressure <130/80mmHg and for blood lipids are cholesterol <4, and low density lipoproteins <2mmol/l. Data from the UKPDS showed that lowering the blood pressure had a bigger effect than lowering the blood sugars. A drop in HbA1c of 1 per cent reduced diabetic retinopathy (DR) by 25 per cent whereas a drop of BP of 10 per cent reduced the risk of DR by 37 per cent. However, there is a legacy effect with a glycaemic memory meaning that control of blood sugars in the early years after diagnosis has an impact in future development of DR whereas the effect of blood pressure had no such memory. The risk of a sudden tightening of controls was highlighted as this can also lead to progression.

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'The goal is to prevent diabetic blindness now'

CARDS and beyond

The Collaborative Atorvastatin Diabetes Study (CARDS) has shown that less laser is used with the patients on statins to lower cholesterol, although further trials with higher doses are needed. The FIELD (Fenofibrate Intervention and Event Lowering in Diabetes) study has also shown that macular oedema is reduced and there is less need for macular laser and also pan retinal laser for proliferative changes. The DIRECT (Diabetes Retinopathy Candesartan Trials) study looked at whether candesartan reduces the progression of DR and the incidence of macular oedema in type 1 and type 2 diabetes. The evidence points to a significant effect in type 2 diabetes. A secondary aspect of the RASS (Renin-Angiotensin System Study) was to look at the effects of RAS inhibition on retinal lesions in type 1 diabetes using enalapril (an ACE inhibitor) and losartan (angiotensin II receptor blocker ARB). Evidence would indicate that ACE inhibitors have little effect on DR progression in type 1 diabetes. The DRS study group 1 showed that ruboxistaurin mesylate reduced the risk of sustained moderate vision loss by 40 per cent when compared to placebo in patients with moderate to severe non-proliferative diabetic retinopathy. It works by limiting the overactivation of protein kinase C beta (PKC beta), a naturally occurring enzyme that has been linked to the development of diabetic retinopathy.

In summary, the importance of using evidence-based medicine to refine the treatments given to patients was demonstrated. The overall strategy is the use of digital photography and OCT for screening, use of intra-vitreal steroids and Lucentis and lowering of the HbA1c by 2 to 3 per cent, lowering the blood pressure (the lower the better) and lowering the blood lipids combined with new medical therapies using candesartan, fenofibrate and ruboxistaurin in appropriate cases. He suggested a working group be set up to look at the risk management of patients.

Peter Mitchell is senior optometrist for City & Hackney and Redbridge DRSS, Homerton Hospital. A general feature on diabetes indicators is to appear in *Optician* this summer