

## **Anabta: a centre for the treatment of Diabetic Retinopathy in the North West-Bank**

The St John of Jerusalem Eye Hospital Group clinic at Anabta is envisaged as a potential future centre for the treatment of diabetic retinopathy in the North West-Bank.



Diabetic retinopathy is the most common cause of blindness in working age populations across the globe and its spread has reached pandemic proportions. The World Health Organisation (WHO) predicts that developing economies will endure 80% of all new cases in the first quarter of the 21<sup>st</sup> century. In the OPT, the prevalence of diabetes already stands at between 470,000 and 570,000, or 12 to 15% of a population of approximately 3,800,000. This is three times higher than in the West.

In their 2004 report on Blindness, Poverty and Development, The World Blind Union states that, 'Poverty is both a cause and a consequence of blindness. Poverty and blindness reinforce each other.' The Palestinian Central Bureau of Statistics, in a recent press release (April 7<sup>th</sup>, 2009), concurred, quoting the 2007 Census data to highlight the fact that sight disability represents, 'the highest number of disabilities in the Remaining West Bank'.

In 2003, WHO published findings on the global cost of blindness. By the year 2020, economic productivity loss for blindness and impaired vision in the Middle Eastern Crescent was projected to grow from \$2b in the year 2000 to \$6.8b. Based on a projected increase in the population of the Middle Eastern Crescent from 622m in 2000 to 868m in 2020, and the Palestinian population of 3.8m in 2009, the cost to the OPT of blindness and impaired vision by 2020 is a potential \$33.7m. Poverty levels in the OPT already stand at 51.8%. More than half of all families are living on less than US\$3.15 per person per day.

All of these figures could improve with timely screening for potential blindness. Once vision is lost, it is usually not possible to regain it. Retinopathy is best managed by testing for disease early, before symptoms arise. This project would seek to create a centre for the management of retinopathy at Anabta and, thereby, to alleviate the cost of blindness and impaired vision to those communities throughout the North of the West Bank who are prohibited from travelling to our Jerusalem Hospital.

In order to fulfill this vital role, Anabta requires two complementary diagnostic and treatment units at a total cost of £115,000:

- **Digital Fundus Fluorescein Angiography System (FFA): £50,000**
- **Optical Coherence Tomography System (OCT): £65,000**

- **Fundus Fluorescein Angiography**

FFA, or fluorescent angiography, is a diagnostic technique for photographing and examining the circulation of the retina using the dye tracing method. It involves injection of sodium fluorescein into a vein in the arm, and then an angiogram is obtained by photographing the fluorescence emitted after illumination of the retina with blue light. This displays the blood vessels at the back of the eye, exposing any abnormalities.

The colour images of the retina that are produced are used both for documenting the appearance of the retina – so that subsequent follow up pictures can be compared for diagnoses – and for teaching purposes; most reputable ophthalmic photographic departments will build up a library of such pictures for both purposes.

FFA is a standard medical retinal procedure, useful in diagnosing and monitoring a very large range of diseases, notably diabetes.

- **Optical Coherence Tomography**

OCT is a new diagnostic imaging technology that is based on the application of advanced photonics and fiber optics. It enables the capture of cross-sectional images of tissue with an axial resolution of up to ten times that of x-ray, providing tissue characterization and images that cannot be obtained by any other means, including x-ray.

OCT lends itself perfectly to the study of structures in the eye: it offers non-invasive optical imaging with millimetre penetration and submicron resolution. It is used as a diagnostic aid in identifying retinal disease and enables very precise surgical intervention and accurate post-operative assessment.

In the OPT, retinal diseases such as diabetic retinopathy (as well as retinal detachment and age-related macular degeneration) are some of the most prevalent causes of blindness.

- **FFA and OCT**

OCT has been very successful in expanding objective assessment of the parameters of retinal disease. The two techniques are complementary, with the OCT test amplifying information derived from the FFA. In addition, as fluorescein angiography is an invasive technique (requiring injection), OCT can permit this test to be side-stepped should this be best for the patient.

## **Needs Assessment**

There are currently over 600 obstacles to movement in the West Bank of the OPT, which prohibit ordinary people travelling to much needed services, including health and ophthalmic services. The provision of these two systems at our Anabta Clinic will mean that many thousands of local people in the North of the West Bank, where communities are amongst the most impoverished in the OPT, will have the screening, diagnoses and treatment they urgently require for a range of eye diseases, including the scourge of diabetic retinopathy. Last year we saw and treated 8,860 patients at Anabta. With your help, we can continue to expand our services and reach out to many more.

