Diabetic retinopathy research could reduce screening costs

Research carried out at the Peninsula College of Medicine and Dentistry, University of Exeter, has concluded that it would be safe and cost-effective to screen for diabetic retinopathy in people with type 2 diabetes who have not yet developed the disease, once every 2 years instead of annually (Chalk et al, 2012).

Diabetic retinopathy is a common complication of diabetes which occurs when high blood sugar levels damage the cells in the retina. If it is not treated, diabetic retinopathy can lead to blindness.

The research team developed a model that simulated the progression of retinopathy in type 2 diabetes and related screening, in order to predict the rates of retinopathy-related sight loss. The model used data from the Royal Devon & Exeter NHS Foundation Trust and the research team generated comparative 15-year forecasts to assess the differences between current screening policies and those proposed by the findings of the study.

Fundus camera image showing proliferative diabetic retinopathy.

Western Ophthalmic Hospital/Science Photo Library

The study concluded that it is safe to screen type 2 diabetes patients who have not been diagnosed with retinopathy every 2 years rather than annually, because the proportion of patients who develop retinopathy-related sight loss was no different between the two screening intervals.

The study was led by Dr Daniel Chalk, Associate Research Fellow in Applied Operational Research, Peninsula Collaboration for Health, Operational Research and Development, Peninsula College of Medicine and Dentistry, who said: 'This is not the first study to investigate screening for diabetic retinopathy, but it is the first to focus on the group of type 2 diabetics who have not yet been diagnosed for the condition.'

He continued: 'We found that there was no perceivable difference in the effectiveness of screening annually or every 2 years for this particular patient cohort, which would suggest that it would be safe and cost-effective to increase the screening interval to 2 years. ... An effective recall system and campaign to impress upon patients the continuing importance of such screening would be beneficial – a lengthening of the screening interval in no way undermines the validity of the screening process itself.'

Chalk D, Pitt M, Vaidya B, Stein K (2012) Can the Retinal Screening Interval Be Safely Increased to 2 Years for Type 2 Diabetic Patients Without Retinopathy? *Diabetes Care* May 7 (Epub ahead of print)

Importance of targeting percutaneous coronary intervention

An international trial, presented at EuroPCR, highlights the importance of targeting percutaneous coronary intervention to patients with ischaemia and may revolutionize patient selection for percutaneous coronary intervention.

The FAME II study showed that targeting fractional flow reserve-guided percutaneous coronary intervention and optimal medical treatment to patients with ischaemia (at least one stenosis with fractional flow reserve ≤ 0.80) can reduce the need for revascularization by a factor of between 6 and 11 compared with optimal medical treatment alone. This study also provides clear evidence that patients without ischaemia can be successfully managed using optimal medical treatment alone.

This randomized, prospective study was conducted among over 1200 patients across 28 centres in Europe and the USA. Patients with ischaemia were randomized to receive either fractional flow reserve-guided percutaneous coronary intervention and optimal medical treatment or optimal medical treatment alone. Percutaneous coronary intervention was conducted using second generation drug-eluting stents. Patients without ischaemia received optimal medical treatment alone.

The primary end point was a composite of all-cause death, myocardial infarction and unplanned hospitalization leading to urgent revascularization. Patients were only considered as urgent revascularization cases if they entered the hospital through the emergency ward and their revascularization procedure was performed during the same hospitalization episode, or if they presented at the clinic with increased angina symptoms requiring urgent revascularization.

Presenting the study, Dr Bernard De Bruyne from the OLV Clinic, Aalst, Belgium, commented: 'This study has the potential to change the way that we target treatment in the future. Many patients in whom we consider placing stents have no ischaemia, this study has shown us that these patients can do very well with medical treatment alone. Targeting percutaneous coronary intervention to the right patients and the right lesions using second generation drug-eluting stent systems can have a major impact on the success rate for these interventions.'

The study was halted prematurely because of an overwhelming difference in primary end point outcomes between the treatment arms with a major advantage for percutaneous coronary intervention and optimal medical treatment. The safety management board considered that it was not ethically or scientifically justified to submit patients to a risk that had been identified. Patient enrolment began in May 2010 and the study was halted in January 2012, with 90% of recruitment taking place in 2011.

De Bruyne B (2012) FFR-guided PCI plus optimal medical treatment versus optimal medical treatment alone in patients with stable coronary artery disease (FAME 2 Trial) preliminary results of cohort A. EuroPCR, Paris: 15–18 May