

diabetes or prediabetes was another debated topic. It was encouraging to hear that population specific risk scores were effective and that long-term results of the US Diabetes Prevention Project were as good as the comparable Finnish Study. Even after 10 years a high proportion of those with impaired glucose tolerance did not develop Type 2 diabetes if they followed a lifestyle intervention programme. The view was that if screening

for diabetes were to be implemented it should be done in conjunction with screening for heart disease risk, as is recommended in New Zealand.

Given the number of papers presented, others are likely to have different take-home thoughts but most delegates agreed it was a worthwhile conference. ●



Novel approaches and new technology

By Robyn Toomath

I attend “new technology” sessions at international meetings to give my patients the most up-to-date information. The first of these was “Does technology hold the key?” by Dr J Gregory from Dundee, who explained why approaches such as continuous glucose sensing (CGS), the biomechanical pancreas, and various forms of transplantation, were not the answer. Such tools required considerable participation by the person with the device, so are far from fool-proof.

Dr Gregory focused on how some clinicians are more successful than others in engaging with patients – encouraging and motivating them to improve their health. This is not something which is provided for in training yet formal teaching of techniques such as motivational interviewing techniques appears to be effective. At the hospital in Dundee they have developed tools to suit the wishes of their patients and are developing a teaching programme likely to be used throughout the National Health Service in Britain.

“Novel therapeutic approaches to prevention and management of Type 1 diabetes” was a technical session, including a talk on “fundamentals of stem cell therapy” and “inducing antigen-specific tolerance” to prevent Type 1 diabetes. Issues covered in four talks included:

- How good are we in identifying those who are almost certain to get diabetes so we can use immune modifying treatments before the pancreas has been completely destroyed?
- Why do transplanted islet cells fail after a while? Can we prevent this?
- If we resolve problems of rejection without requiring people to take immuno-suppressant drugs for the rest of their lives, would everyone want a transplant and where will we get the islets from?
- The big trials of immune modulation as a means of preventing Type 1 diabetes have been disappointing – but is this line of research a dead end? Are there

sub-groups of people likely to respond? What tools do we have for suppressing the immunological attack on the beta cells?

Having heard these addresses, I was impressed that people in laboratories around the world have been working on these problems and are making incremental progress. When I was in an immunology laboratory in London in 1998 they were working on immunising against antibodies thought to attack the beta cells of the pancreas. Nothing came of it but newer technology and understanding have meant this is again being considered and agents called monoclonal antibodies are being used in other fields in medicine and show promise. Stem cells as a source of “make your own” beta cells seem the most likely source for the future. A huge amount of work is needed to refine the process and make it safe.

Identifying individuals who will get diabetes has improved enormously over recent years. If an individual has anti-islet cell antibodies and antibodies to an additional four antigens, there is a 90% chance that person will develop diabetes in the next eight years. The odds are even higher if someone has anti-islet antibodies and also some mild abnormality in oral glucose tolerance testing. That person already has Type 1 diabetes – but at an early stage. Such individuals would be ideal to enrol in studies designed to switch off the immune attack, and hopefully allow remaining beta cells to recover and so prevent development of full-blown diabetes.

The trick is finding these people. The most efficient way is to start with relatives of people with Type 1 diabetes but when they did the big “Diabetes Prevention Trial -1” in which they gave people insulin orally or subcutaneously to see if this would switch off the destruction of the pancreas, only 0.4% of those screened were suitable for the study. That’s a huge amount of work. Most people who develop diabetes don’t have a first degree relative with diabetes so how are we going to find the people to treat if we have an effective treatment?

The good news is that dedicated people are working on these problems. Listed on one paper was the name of a bright man who was a young doctor completing his PhD at the laboratory I was at 20 years ago. He is one of the group working on a newer version of immunisation against pancreatic attack. If he thinks it is worth pursuing after all this time we can be optimistic that they will solve the problem eventually. ●