Diabetes the Welsh way:

Clinical issues and management of the individual

A report from the *1st Welsh Conference of the Primary Care Diabetes Society,* which took place on 27 April 2010 at the Cardiff Marriott Hotel, Cardiff. The gold sponsor of the event was Novo Nordisk. This meeting report was generated independently by the publisher and conference speakers, with whom editorial control rests.

The Primary Care Diabetes Society (PCDS) was set up 6 years ago to improve the care of people with diabetes in primary care. The PCDS now runs annual meetings in England, Ireland and Scotland, and the inaugural PCDS meeting in Wales is reported here. This conference examined diabetes care from a Welsh perspective and within the context of the changing structure of healthcare delivery in Wales. The talks and discussions provided practical guidance to healthcare professionals for confronting current and future therapeutic and political issues that impact directly on everyday practice in Wales, as well as presenting a vision for Welsh diabetes care in the future.

Conference Chairs David Millar-Jones (GP, Cwmbran and PCDS committee member) and Pam Brown (GP, Swansea and PCDS committee member) welcomed over 200 delegates to the event from all over Wales. "We hope that when you leave here you can feel that your journey was worth it" said David.

Introduction

Tony Jewell (Chief Medical Officer, Department for Public Health and Health Professionals)

Having worked as a GP for 10 years, training in public health, before becoming Chief Medical Officer, Dr Jewell said that "primary care is a really important part of the NHS and the only way of dealing with challenges like diabetes". He discussed the rising levels of obesity and diabetes in Wales, particularly in the young. Shockingly, Wales had the third highest rate of obesity in 15-year-olds in one international study, behind only the USA and Malta (UK National Screening Committee, 2008). Diabetes needs to be prevented by encouraging lifestyle change in young people. "If we're going to do something for the future, then we've got to start with our young people" said Dr Jewell. He emphasised that primary care is on the front-line of treatment and is best placed to "prevent the preventable".

Dr Jewell encouraged delegates to consider not only those who come to see their GP, but also all the other people on the practice register "because often," he said, "they're the most vulnerable". He used the work of Dr Julian Tudor Hart as an excellent example of putting this into practice.

Good primary care services in Wales are not evenly distributed, "we want high quality services for everybody, and we want those services to reach everybody" said Dr Jewell. Along with service improvement he affirmed the importance of the government in providing a facilitative environment, such as improving access to healthy foods.

Diabesity: The Welsh Perspective

Rhys Williams (Professor of Clinical Epidemiology, Swansea)

The term "diabesity" was coined in the 1970s to describe the combination of diabetes, hypertension, dyslipidaemia and obesity. Professor Williams explained that one term can be used to describe these conditions because they are intrinsically linked. "Metabolic syndrome" is the term more commonly used today.

Professor Williams began by describing a study of children's weight and height, measured at school once each year (Jones et al, 2005). "The data are not perfect, however," he said, "some of the body mass indices recorded were incompatible with life!" But some conclusions can be drawn from this study: "children were 1 kg heavier on average when they started school in 2001 than they were in 1986. If the overall distribution of weight is 1 kg more, that's quite a big difference in the number of obese and overweight children" said Professor Williams.

"The National Screening Committee in the UK has now agreed that early detection of type 2 diabetes as part of a wider cardiovascular risk assessment is worth doing economically and epidemiologically", Professor Williams explained. In the light of this, a risk-assessment programme has been set up in the workplace called Prosiect Sir Gâr. This involves measurement of

risk factors, such as height and weight, and the use of Q-RISK and Framingham risk calculators, and interventions such as lifestyle management courses within work time. People are also referred to an appropriate service as required.

Regarding interventions for weight loss, Professor Williams asked: "is behavioural change the only way to treat existing obesity?" He mentioned Counterweight and MEND (Mind, Exercise, Nutrition … Do it!) as programmes with promising results, although they are intensive and costly to implement because of the amount of time and training involved.

Professor Williams explained why in Wales, bariatric surgery is more rarely performed than in England: "partly because of the lack of appropriately trained and equipped centres, and partly because of a lack of funding", although he discussed the case of one woman who had benefited greatly from the surgery, but still maintained that it was not an easy option.

Management of renal pathology

Donald Fraser (Senior Lecturer, Cardiff)

Dr Fraser began by asking: "how much of a problem is diabetic nephropathy (DN)?" One way to answer that is to look at how many people are at risk of developing DN, which is about 40% of people with diabetes, if they live long enough (Andersen et al, 1983).

Microalbuminuria is the first sign of kidney damage, and when it progresses to proteinuria that indicates damage to the glomerulus because proteins are leaking out of it. This can easily be detected using a urine dipstick test. Dr Fraser said that "proteinuria doesn't just mean your kidneys are in trouble, but it is an indicator of high risk of death from cardiovascular disease".

"The number of people with type 1 diabetes and end-stage renal failure is decreasing year on year" said Dr Fraser, "unfortunately, that's more than matched by the number of people with type 2 diabetes presenting with this condition".

Treatment for DN "in a nutshell, is to control blood pressure as well as possible and measure and control proteinuria". Blood pressure targets for people with diabetes are well known, however Dr Fraser reminded delegates that even a small improvement in blood pressure can make a big difference to the progression of renal disease (Pohl et al, 2005).

"Do not settle for a low dose of angiotensin-converting enzyme (ACE)-inhibitor" said Dr Fraser, because the person may benefit further from a higher dose, although he did warn delegates about the risk of acute kidney injury with this treatment, and recommended it be used with caution in older people, those with pre-existing cardiac and renal disease and people with suspected renal vascular disease.

It is best to work at preventing end-stage renal disease through smoking cessation, good glycaemic control and blood pressure and proteinuria management, because once a person with diabetes requires dialysis "the outlook is not good" said Dr Fraser.

A member of the audience identified a problem when people taking an ACE-inhibitor are admitted to hospital with an acute illness, the hospital staff rightly take them off the ACE-inhibitor. The problem is that they do not reinstate the drug on recovery, which makes it difficult to encourage the person to take the medication again. Dr Fraser agreed that more needed to be done in hospitals to prevent this from happening.

The fertile woman with diabetes: Addressing the concerns

Julia Platts (Consultant Diabetologist and Endocrinologist, Cardiff)

"By the 1980s," Dr Platts began, "we started to get some evidence that good pre-conception care improved outcomes". By the 1990s a link between HbA_{1c} at time of conception and risk of congenital malformations was identified. NICE (National Collaborating Centre for Women's and Children's Health, 2008) now recommend a pre-conception HbA_{1c} level of <6.1% (<43 mmol/mol), although Dr Platts pointed out that this is set so low mainly to encourage women to achieve an HbA_{1c} level of <7% (<53 mmol/mol).

An important report published by the Confidential Enquiry into Child and Maternal Health (CEMACH, 2007) revealed that the risk of stillbirth is five times higher in a mother with diabetes than without. "The key message from this report is that pregnancies in type 1 and type 2 diabetes have exactly the same risks" said Dr Platts. "Evidence shows pre-conception counselling reduces the risks of these pregnancies, however we only achieve this in 30–50% of women. Primary care has greater potential to deliver this intervention, particularly to women with type 2 diabetes", she said.

Gestational diabetes (GD) is defined as any degree of glucose intolerance with an onset or first recognition in pregnancy, and Dr Platts emphasised the importance of screening for GD as this can affect the outcome of the pregnancy and is an important marker for the development of type 2 diabetes for the mother in later life. It is important to screen for ongoing diabetes 6 weeks after the delivery of the baby. It is also important to take the opportunity to implement measures to try to reduce the risk of type 2 diabetes in these women.

New and emerging therapies

Marc Evans (Consultant Diabetologist, Cardiff)

"Ten percent of the NHS budget is spent on diabetes" (Department of Health, 2006) said Dr Evans, emphasising the scale of the type 2 diabetes epidemic.

However, many drugs for lowering blood glucose have undesirable side-effects, such as weight gain and hypoglycaemia. A meta-analysis by Ray et al (2009) identified that "a reduction in HbA_{1c} reduces the risk of macrovascular events but had absolutely no effect on all-cause mortality" explained Dr Evans, and went on to discuss how an increase in hypoglycaemia as a result of blood glucose-lowering therapy could contribute to mortality risk. "Although," he said, "observations are limited by the absence of blood glucose levels at the time of death".

"This is why we need these newer therapies," said Dr Evans, "so we can optimise therapy for people with

type 2 diabetes while minimising the risks associated with weight gain and hypoglycaemia".

Dipeptidyl peptidase-4 (DPP-4) inhibitors (such as sitagliptin, saxagliptin and vildagliptin) block the action of the DPP-4 enzyme, so that circulating levels of glucagon-like peptide-1 (GLP-1) are prolonged, which lowers blood glucose levels. GLP-1 receptor agonists (such as exenatide and liraglutide) increase the amount of circulating GLP-1, which again lowers blood glucose levels.

In a study comparing the composite endpoint of HbA_{1c} level <7% (<53 mmol/mol), no weight gain and no major or minor hypoglycaemia in people with type 2 diabetes, the odds ratio was significantly in favour of liraglutide versus exenatide (Pratley et al, 2010).

Future of diabetes care in Wales

Steve Bain (Consultant Diabetologist, Swansea)

A gold standard diabetes service is one that has a seamless interaction between primary and secondary care, uses the same protocols and systems, and ideally shares the same budget. "Although we know that this is the gold standard, it is remarkably uncommon" said Professor Bain.

Shared IT systems are one aspect of the gold standard service and Professor Bain used the Scottish Diabetes Information – Diabetes Collaboration (SCI-DC) database as an example of how it could work. He said "SCI-DC is currently on offer to Wales in return for other locally developed IT initiatives".

The structure of diabetes care in Wales is changing: Professor Bain discussed the frustrations of Local Diabetes Services Advisary Groups (LDSAGs), in that it is not possible to make decisions unless someone who controls the budget is present at each meeting, and for this reason these groups have largely disappeared from English systems. However, Professor Bain was enthusiastic about Local Health Boards, saying that they "represent a good opportunity to improve services, and if we join up not only the hospitals and community, but also the budget and then allow the budget to be managed by people who are dealing with diabetes, it would be a big step forward".

Structured education: How can more of us meet NICE requirements?

Sian Bodman (Diabetes Lead Nurse, Torfaen)

NICE guidance states that structured education should have a planned course with a curriculum, cover all aspects of diabetes, be flexible in content, relevant to a person's clinical and psychological needs and adaptable to a person's educational and cultural background (NICE, 2003).

Sian discussed each structured education programme that fulfils NICE criteria, beginning with those for people with type 1 diabetes. DAFNE (Dose Adjustment for Normal Eating) focuses on carbohydrate counting and insulin dose adjustment, which provides more dietary freedom. "It's not dose adjustment for normal eating, it's dose adjustment for normal living!" was one person's feedback. "The UK Feasibility study revealed that DAFNE led to significant improvements in glycaemic control, quality-of-life, psychological wellbeing and treatment satisfaction" said Sian (DAFNE Study Group, 2002).

DAFYDD (Dose Adjustment For Your Daily Diet) is delivered in Wales. Sian advised delegates to look out for young adults who may have been diagnosed as a child and would benefit from education. "A lot of the education has gone to their parents and not to them" she said, "you would be amazed at the number of myths these young people believe".

DESMOND (Diabetes Education and Self-Management for Ongoing and Newly Diagnosed) is a structured education programme for people with type 2 diabetes. There are three programmes that have been developed: DESMOND Newly Diagnosed, DESMOND Foundation and DESMOND BME (black and minority ethnic), which can be delivered in Urdu, Gujarati, Punjabi and Bengali.

X-PERT is another structured education programme for people with type 2 diabetes and "we had 72 people attend an X-PERT course in Torfaen last year" said Sian. X-PERT is a 6-week programme based on the principles of empowerment, person-centred care and discovery learning.

"So why are these education programmes not widely used in Wales?" asked Sian, and then went on to say that a lack of trained staff to deliver the programmes, and a lack of organisation referral and recruitment of people with diabetes are part of the problem. Solutions include increased awareness of the programmes in primary and secondary care, making people with diabetes aware

that it is available and working differently to make time to deliver the programmes.

Welsh consensus guidelines: Are they still valid?

Dai Williams (National Director for Diabetes UK Cymru)

Dai began by talking about his son Sam, who was diagnosed with type 1 diabetes at the age of 13 and prompted Dai to work for Diabetes UK Cymru.

The Welsh consensus guidelines (All Wales Consensus Group on Diabetes Care, 2003) include a number of best practice standards. Dai emphasised the importance of early diagnosis of people with type 1 diabetes and good quality care for adolescents drawing on his experience with his son Sam, who was diagnosed late. He also discussed the need for good inpatient care and the case of one woman who had been admitted to hospital and the staff were going to take her insulin pen away. "She said, 'if you take my pen away, I'm calling my friend Steve', and Steve Bain was there in about 20 minutes and told them to let her keep her insulin pen" said Dai.

Dai discussed the reasons why the work towards meeting one standard – reducing the risk of developing type 2 diabetes – is not progressing. He blamed the high-profile advertising of fast food, such as the sponsorship of the Olympic games by McDonalds and Coca-Cola. "It would be like Imperial Tobacco sponsoring a smoking cessation clinic," he said, "it doesn't work".

Some initiatives have been developed to reduce the risk factors that lead to type 2 diabetes, such as "Creating an Active Wales" (Health Challenge Wales, 2009), which aims to increase mean physical activity levels from 2.4 to 3.4 days per week by 2020. It is crucial that these outcomes are achievable and that progress is able to be clearly measured.

He concluded that the Welsh consensus guidelines are still valid, but they need a bit of attention. He recommended implementing SCI-DC as a way to track improvements, because currently the statistics are sent off to the Welsh Assembly Government and not enough constructive information is returned. The key is that the diabetes community in Wales works more effectively as a team and keeps the public informed of the dangers of diabetes.

Dai recommended that all the charities that promote a healthy lifestyle should join together to fight against the obesogenic environment. "We've got to do it loud, and we've got to do it clearly" he said.

Targets in diabetes: DES and QOF

David Millar-Jones, GP and Welsh Representative on the PCDS, Cwmbran

Type 2 diabetes is a progressive condition, yet optimising treatment and maintaining glycaemic control can still make a difference. A reduction in HbA_{1c} by 1 percentage point can significantly reduce complications later (Stratton et al, 2000). Guidelines such as those by NICE (2008), SIGN (2010) and JBS2 (Joint British Societies 2; British Cardiac Society et al, 2005) are aspirational, whereas QOF results in payment if the indicators are met.

Local Health Boards have set up direct enhanced services (DES) that include 60% of all people with diabetes being managed in primary care and 6% of these should have an HbA_{1c} level below 7% (53 mmol/mol).

Dr Millar-Jones weighed up the risks and benefits of reducing HbA_{1c} levels – as well as reducing microvascular complications, the risk of weight gain and hypoglycaemia increases. "Gaining pounds in flesh will gain us pounds in money" said Dr Millar-Jones referring to the QOF payments that would result if HbA_{1c} was reduced in this way.

He emphasised that guidelines should be person-centred and that they should be age-related. "We need to be thinking about the risk of harm in our older people" he said, recommending that quality-of-life should come first in older people. He also urged delegates to consider the duration of diabetes "because glycaemic targets become harder to achieve, and the risk of hypoglycaemia is increased" he said. "And most importantly," said Dr Millar-Jones, "what do our patients want?" An individual with diabetes should provide informed consent, which depends on appropriate education, a full awareness of the risks and benefits and the acceptance of compromise.

Dr Millar-Jones ended his talk by saying that "guidance is nice to have but treatment will always be bespoke". ■

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