Type 2 diabetes – emerging evidence and guidance

In this edition of *Diabetes & Primary Care* we reflect on research and important guidance published recently, and consider the impact they will have on our practice in primary care. We reappraise the diagnosis of diabetes and particularly its classification, and take a first look at the NICE (2012) guidance on risk identification and preventing type 2 diabetes. Although this is public health guidance, it is of interest as the expectation is that much of the work will be implemented in primary care settings.

Recent data discussed in this editorial include caution with tight blood pressure control, the paradoxical hazard of low weight at diabetes diagnosis and the fact that too-tight glycaemic control may be hazardous and can be associated with falls. Diabetes research does not always have predictable consequences, and moderation with a patient-centred approach to management seems to be an important message.

The diagnosis and classification of diabetes

Most primary care team members are now comfortable with using HbA_{1c} to diagnose diabetes (World Health Organization, 2011); the cut-off value of 6.5% (48 mmol/mol) has become a useful line in the sand. In this issue, Sadek et al (2012) urge caution with the classification of diabetes at practice level; the authors point to the growing problem of diabetes as the population ages and its ethnic structure changes, combined with the rising tide of obesity. In line with many diabetes analysts they predict that by 2020 an estimated 3.8 million adults, or 8.5% of the adult population, will have diabetes compared with an approximate UK average of 4% today; in practice this means that a new diagnosis of diabetes is now a regular occurrence.

Sadek and colleagues emphasise that it is important to ensure the diagnosis is correct and an accurate classification of the type of diabetes is made at diagnosis. The authors highlight three potential mistakes that can be made: misdiagnosis, which is hopefully less common as a result of the new diagnostic criteria; misclassification between the types of diabetes; and miscoding, which is when the wrong computer Read code is used so that it is not possible to determine the type of diabetes precisely when searching. The authors suggest that this miscoding is relatively common, occurring in up to 15% of diagnoses, and cite cases as illustrative examples. They propose that practices use a downloadable audit tool to ensure accuracy of their coding. This article is timely as it sits alongside changes to the Quality and Outcomes Framework (QOF) 2012/3 in DM 19 (The Information Centre, 2012), which requires the type of diabetes to be accurately coded.

NICE guidance

Recently, a UK expert group has reviewed guidance (John et al, 2012) and recommended that individuals with an HbA_{1c} of 6.0–6.4% (42–47 mmol/mol) should be designated as being at high risk of developing type 2 diabetes. People at high risk have been designated as having "impaired glucose regulation", and have a 15 times higher risk of developing type 2 diabetes over 3 years than those with a baseline HbA_{1c} <5.5% (<37 mmol/mol; Chamnan et al, 2011). A health technology assessment also appraised non-pharmacological interventions to reduce the risk of diabetes in people with this impaired glucose regulation (Gillett et al, 2012), and concluded that the important factors are dietary change and physical activity. In an article in this edition (Brown, 2012), the impact of NICE guidance concerning this group of individuals is analysed.

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Panna Vamos E, Harris M, Millett C et al (2012) Association of systolic and diastolic blood pressure and all-cause mortality in people with newly diagnosed type 2 diabetes. *BMJ* **345**. Available at: http://www.bmj.com/content/345/bmj.e5567 (accessed 11.10.12)

Puar TH, Khoo JJ, Cho LW et al (2012) Association between glycaemic control and hip fracture. *J Am Geriatr Soc* **60**: 1493–7. Available at: http://bit.ly/OkVPv7 (accessed 11.10.12)

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Tuomilehto J, Lindström J, Eriksson JG et al (2001) Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *N Engl J Med* **344**: 1343–50

World Health Organization (2011) *Use of Glycated Haemoglobin in the Diagnosis of Diabetes Mellitus.* Available at: http://bit.ly/xG4QEe (accessed 11.10.12)

The public health guidance *Preventing type 2 diabetes: risk identification and interventions for individuals at high risk* (NICE, 2012) outlines strategies for those aged over 40 to have their risk of diabetes assessed, and goes on to suggest effective interventions when impaired glucose regulation is discovered. It stops short of recommending a national screening programme for diabetes, although in England the recommendations will dovetail with the NHS "Health Check" programme (NHS Diabetes and Kidney Care, 2010). Underpinning this guidance is a need for additional resources; the proposed intensive lifestyle programme has the potential to be very resource intensive, as this was the case in the prevention studies on which it was based (Tuomilehto et al, 2001; Lindström, 2003). However, these trials used one-to-one patient education, and the NICE-proposed lifestyle programme will be delivered to groups of 10–15 people.

NICE is considering the introduction of a new public health domain in next year's QOF, as part of a move to ring-fence 150 QOF points for preventing disease and tackling healthcare inequalities; the new domain is being negotiated by NHS employers and the General Practitioners Committee for introduction in April 2013. These proposals have been greeted with world-weary cynicism from the GP population, which feels there is no evidence base suggesting that implementing such strategies can be effective in practice.

Research data urge caution

A recently published study has identified an association between tight glycaemic control (HbA$_{1c}$ <7% [53 mmol/mol]) and a greater risk of hip fracture in individuals being treated for type 2 diabetes (Puar et al, 2012). The authors urge greater caution in treating people with diabetes in later life (the mean age of this cohort was 77), as this group was at risk in the study. In another study (Panna Vamos et al, 2012), blood pressure <130/80 mmHg was not associated with a reduced risk of all-cause mortality in individuals newly diagnosed with diabetes, with or without known cardiovascular disease; low blood pressure, particularly <110/75 mmHg, was associated with an increased risk for poor outcomes.

Carnethon et al (2012) reported on an unexplained observation that adults who were normal weight at the time of diabetes diagnosis had a higher mortality rate than those who were overweight or obese at diagnosis; the authors struggled to find mechanisms to explain their findings, although they speculated that reasons may be multifactorial.

Conclusion

Once again emerging data give much for primary care teams to ponder. Practices should consider using an audit tool to ensure both the accuracy and correct coding of individuals with diabetes and impaired glucose regulation. Implementation of the NICE (2012) diagnosis and prevention guidelines can begin while awaiting the setting up of quality-assured, evidence-based, intensive lifestyle programmes for the highest risk groups. Newly published data outlined in this editorial reinforce that although guidelines may be helpful, individualising treatment continues to be the safest way forward. As Marian Carey and Yvonne Doherty (Carey and Doherty, 2012) outline in their continuing professional development module in this issue:

"No decision about me, without me." ■

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NICE (2012) *Preventing Type 2 Diabetes: Risk Identification and Interventions for Individuals at High Risk.* NICE public health guidance 38. NICE, London. Available at: http://guidance.nice.org.uk/ph38 (accessed 11.10.12)