

Risk calculation: An important part of diabetes care

We need to understand and quantify risk in people with diabetes. People who have established diabetes run increased risks of macrovascular disease that vary according to individual risk factors.

Risk calculators help to predict who may develop diabetes as well as helping to decide how actively to address risk factors in people with diabetes, especially across different age ranges and in different ethnic groups. Primary care teams aim to help individuals to understand these hazards and communicate the degree of risk in simple language.

Predicting the risk of developing type 2 diabetes

The use of diabetes risk assessment tools will become more important as the UK Government introduces vascular risk assessment in England for those aged between 40 and 74 years (Department of Health, 2008). It has been proposed that certain biochemical, and body weight and composition factors help to predict diabetes (Kahn et al, 2009). An energy-dense diet in the English population may be associated with an increased risk of developing diabetes, independent of baseline obesity (Wang et al, 2008).

The Finnish Diabetes Risk Score (Saaristo et al, 2005) is a self-administered questionnaire used to screen the general population over 40 years of age to predict those at high risk of developing type 2 diabetes and “pre-diabetes”.

The QDScore has been produced as the first risk prediction algorithm to estimate the 10-year risk of developing diabetes on the basis of a prospective cohort study in a UK population (Hippisley-Cox et al, 2009). This risk calculator has demonstrated that a four- to five-fold variation in risk of developing type 2 diabetes may exist between different ethnic groups. The risk score considers both

deprivation and ethnicity, as well as age, sex, smoking, treated hypertension, BMI, family history of diabetes, current treatment with corticosteroids, and previous diagnosis of cardiovascular (CV) disease.

Diabetes and coronary heart disease risk: a coronary risk equivalent?

Increased CV morbidity and mortality in people with type 2 diabetes is well established. Diabetes is associated with twice the risk of incident coronary heart disease (CHD) and ischaemic stroke and two to four times increased risk of CHD and stroke mortality compared with people without diabetes (Bulugahapitiya et al, 2009). This has led to proposals that people with diabetes should be treated as if they had existing CHD – the so-called coronary risk equivalent (Haffner et al, 1998).

This dogma has been confounded recently by a meta-analysis, showing that people with diabetes were at a lower risk of developing total CHD events compared with people without diabetes who had established CHD (Bulugahapitiya et al, 2009). Results from the meta-analysis suggest that diabetes is not a coronary risk equivalent when the criterion for CHD is prior myocardial infarction, and is applied across all age groups. Neither did it support the notion that all people with diabetes should be treated as secondary prevention. As more young people are diagnosed with type 2 diabetes, the risk stratification changes and risk becomes more difficult to quantify, as it is for people with type 1 diabetes.

CV risk calculators, used to quantify individual CV risk, have grown in importance in contemporary general practice. Some are embedded into systems in clinical practice, which would improve documentation and the recording of individual’s risk factors. Recently, QRisk2 has emerged as being superior to



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Framington-based algorithms for UK GP populations (Scott, 2009). In people with diabetes, risk stratification is more complex, with many risk calculators proving less reliable. In a related article in this issue, Hermione Price examines the merits of the more common risk engines, arguing that the UKPDS risk engine may be the most specific (see page 218).

Risk and drug therapies

Primary care teams have recently had the difficult task of explaining to people with diabetes the risk of harm from using existing antidiabetes agents. With new and emerging therapies, the increased risk of developing other conditions may not be immediately apparent. In a comment piece on page 204 the case is made for careful analysis of accumulated data, rather than rushing to conclusions about increased risk suggested by isolated studies and analyses.

Risk is important, complex and often misunderstood both by doctors and people with chronic conditions. Primary care teams should seek to understand the increased risks of developing other conditions associated with diabetes and its treatments, and then convey them to people with diabetes in understandable terms. They can then be empowered to make informed decisions about complex medical regimens, and through this, develop a good understanding of their condition, which may well improve adherence to their regimen. ■

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