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(Refer to page 540-544)

## Improving Diabetes Care – Can we do more?

C F Sum

Diabetes carries with it a significant burden of morbidity and mortality from both macrovascular and microvascular complications. In Singapore, although it ranked as the sixth commonest cause of death reported in 2000<sup>(1)</sup>, it probably contributed significantly to mortality from coronary artery and cerebrovascular disease. People with diabetes have a two- to four-fold increase in coronary artery and cerebrovascular disease. Diabetes is the commonest reason for non-traumatic amputations of the lower limb in Singapore. It is a leading cause for blindness amongst Singaporean adults and is also the commonest reason for starting on renal replacement therapy for end-stage renal disease in Singapore<sup>(2)</sup>. Besides the excess mortality and morbidity that these complications inflict, their effect on the quality of life of patients and family members is difficult to quantify, but can often be devastating.

The 1998 National Health Survey estimated the crude prevalence of diabetes mellitus amongst adults in Singapore at 9%<sup>(3)</sup>. With the anticipated greying of the population, if the adoption of unhealthy lifestyle habits continues, the crude prevalence of diabetes, particularly type 2 diabetes, is expected to increase. This is likely to translate into an increasing burden of microvascular and macrovascular complications.

However, we now have evidence that good metabolic control of diabetes makes a difference. The Diabetes Control and Complications Trial (DCCT) performed on subjects with type 1 diabetes<sup>(4)</sup> and the United Kingdom Prospective Diabetes Study (UKPDS) performed on subjects presumed to have type 2 diabetes<sup>(5)</sup> confirm that good metabolic control, as reflected by glycated haemoglobin (HbA1c), can reduce microvascular complications substantially. These together with evidence from other trials, emphasising the benefits of appropriate management of hypertension<sup>(6)</sup> and dyslipidaemia<sup>(7)</sup> amongst people with diabetes, in reducing the macrovascular complication burden, suggests that it is well worth the effort to control these two other common co-morbid conditions concurrently. The availability of this evidence behoves us to strive towards better control of blood glucose, hypertension and dyslipidaemia amongst patients with diabetes so as to reduce the burden of complications<sup>(8)</sup>.

How are we faring? The authors of the two reports<sup>(9,10)</sup> from the Diabcare Singapore 1998 Survey published in this issue of the journal are to be commended for providing a timely snapshot of the status of diabetes care in Singapore. The first of these articles indicate that 77.1% of patients with diabetes had data on HbA1c. At the primary healthcare level, 69.6% of patients had data on HbA1c compared to 92.6% of patients seen at restructured hospital diabetes clinics. On the other hand, about 50% of patients seen at the primary healthcare level had optimal HbA1c levels (defined as less than 1% above the upper limit of normal range for HbA1c),

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whereas only 37% of patients at restructured hospital diabetes clinics had a similar level of HbA1c, probably reflecting to some extent the complexity and severity of diabetes seen at restructured hospital diabetes clinics. An area of concern highlighted in the survey was that only 28% of patients reported any form of self-glucose monitoring and less than 20% practised blood glucose monitoring. Screening rates for microalbuminuria were also far from optimal.

What are the barriers to improvement? Diabetes is a chronic disorder and the lifestyle habits required for its improvement need to be lifelong. Secondly, diabetes is the prototype ruthless silent killer. Moderately elevated blood glucose levels in diabetic patients, which may not induce symptoms, can lead to complications over time. To make matters worse, onset of complications is again often asymptomatic (e.g. onset of non-proliferative retinopathy, onset of proteinuria, and even silent myocardial infarct).

Care for people with diabetes needs to take into account the chronicity, the fact that lifestyle impacts on control, and the relative well being of the patient till late in the course of the disease in spite of the presence of complications. Hence organisation of care must incorporate education, motivation and empowerment of the individual with diabetes so as to allow him or her to take personal responsibility of diabetes (albeit with the full support of the diabetes care team). Care must also be structured, with provisions for self-glucose monitoring, periodic checks of HbA1c as well as scheduled screening for possible complications<sup>(8)</sup>. We should discourage the laissez-faire attitude of some patients who believe that the mere popping of the occasional antidiabetic pill would suffice.

What needs to be done? We have generally accepted published clinical practice guidelines<sup>(11)</sup>. A disease management approach can be exploited to assist in planning improvements. It is obvious that resources should be made available to the primary healthcare setting where the majority of patients with diabetes receive most of their chronic care. The comprehensive care/enhanced care programme being piloted at polyclinics is certainly a step in the right direction. This programme provides for structured care of diabetes, hypertension and dyslipidaemia. Under this programme, amongst other educational, screening and treatment initiatives, self-monitoring of glucose by patients will be encouraged. The role of the nurse in motivating, educating and caring for patients with diabetes needs to be expanded<sup>(12)</sup>. It is hoped that with the first local diabetes nurse educator's course, nurses will acquire knowledge and skills to help busy polyclinic doctors in caring for patients with diabetes. These are but the initial two steps. Many more initiatives are required and other allied healthcare professionals will also need to be involved. Family physicians in private practice, who probably care for a significant proportion of diabetic patients, must also not be forgotten. They often have good doctor-patient rapport and should use this to advantage in educating and motivating patients and their family. Family physicians who practise in groups may find it worthwhile to engage nurses trained in diabetes and also acquire the necessary equipment to add value to their diabetes care. Family physicians in solo practices should utilise the resources of nearby polyclinics or hospitals to assist with structured care. In addition, medical, nursing and allied healthcare professionals will need continual professional education to facilitate delivery of quality diabetes care.

What else needs to be done? More than 60% of people identified as having diabetes in the National Health Survey 1998<sup>(3)</sup>, were not previously aware of the diagnosis. Greater public awareness is required, so that subjects

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at risk will come forward to be screened. This would facilitate early diagnosis of asymptomatic diabetes. For this group of patients, early treatment of diabetes will mean reduced exposure to high blood glucose and lower risk of subsequent complications. Screening will also be useful in identifying the 15% of the population with impaired glucose tolerance (who are already thought to be at risk from macrovascular complications). The well recognised risk factors for abnormal glucose tolerance and diabetes should also be tackled: obesity, sedentary lifestyle and inappropriate diet. Efforts at school to deal with these should be intensified.

A massive task lies ahead. It will require the concerted effort of multiple agencies both public and private, as well as medical, nursing and allied healthcare professionals. We will have to prioritise the many steps which need to be taken<sup>(13)</sup>. However, if we pursue this relentlessly, we can hope that when the next similar study is published, the data would have improved. More importantly, at the national level, we may also hope to see improvements in the prevalence of diabetes as well as in the burden of its complications. **SMD**

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