DIABETES AND CARDIOVASCULAR DISEASE: THE COSTS

The costs of diabetes and its complications affect everyone, everywhere. With the number of people with diabetes rapidly increasing, these costs are continuing to grow, impacting heavily on the lives of individuals and families, the healthcare sector, governments and society as a whole.

COSTS OF DIABETES TO NATIONAL HEALTHCARE SYSTEMS (NHSS)

The financial costs of type 2 diabetes include not only the direct costs of treating the disease, but also the costs of managing and preventing long-term complications. In the UK, for example, only 6% of the cost of treating diabetes is attributable to anti-diabetic drugs. In total however, type 2 diabetes and its complications accounts for 10-15% of total healthcare expenditures in Europe and the USA including hospitalization and ambulatory consultations.

According to CODE-2* ("Cost of Diabetes in Europe – Type 2") studies the average per capita expenditure in the eight European countries studied for people with type 2 diabetes amounts to approximately US$ 2500 per year (1998 prices).

This survey also indicated that 30 to 65% (on average 53%) of the total costs incurred by NHS on the care of people with diabetes are due to hospitalization; 18 to 39 % are due to ambulatory care, 2 to 7% to oral antidiabetic drugs and 11 to 31% to other drugs, in particular drugs to counter cardiovascular disease.

DIABETES AND COMPLICATIONS FOR THE INDIVIDUAL

As diabetes progresses, long-term complications tend to appear, bringing about more costs to NHS and to the individual and the family. If medical costs for a person with type 2 diabetes are, on average, 1.5 times higher than those of a person without the disease, the presence of microvascular complications, i.e. eye, kidney or nerve damage doubles the costs incurred, while the presence of macrovascular complications, i.e. heart disease and stroke trebles them. Presence of both kinds of complication increases costs by more that 5 times. These complications do not only have an impact in terms of money, but also of course in terms of quality of life.
Trials such as the United Kingdom Prospective Diabetes Study (UKPDS), in which 5000 type 2 diabetes patients were followed up for 20 years, have shown that intensive control of blood glucose is an effective way of preventing microvascular complications and reducing medical costs.

However, from an economic perspective, it is the prevention of macrovascular complications that is key. Cardiovascular disease accounts for a large proportion of the excess medical care costs attributed to diabetes. For type 2 diabetes CVD is known to be the most costly single class of complications. These excess costs are known to begin up to eight years before the diagnosis of diabetes is made. This suggests that treatment of people with impaired glucose tolerance or other cardiovascular risk factors such as hypertension or raised LDL-cholesterol could be an effective way of preventing the complications associated with type 2 diabetes.

**DIABETES: AN ECONOMIC BURDEN IN THE WORLD**

In the United States, a recent study has shown that, if the per person per year health care utilization cost for a person without either diabetes or CVD is designated as 1, that for a person with both diabetes and CVD is approximately 10. For a person with CVD and no diabetes it is approximately 7 and for a person with diabetes and no CVD it is approximately 4.

In developing countries, the economic burden of CVD related to diabetes is largely unquantified. However, it will be related, principally, to the prevalence of diabetes, the longevity of those with diabetes and the extent of tobacco use.

**PREVENTION**

In both developing and developed countries, some of the most effective means of preventing CVD in people with diabetes are relatively low cost — prophylactic aspirin and advice on smoking cessation, exercise, diet and weight control. In people with diabetes in particular, these should be started as primary prevention measures for CVD without waiting for the first CVD event to occur.

Once again, earlier detection and intensive intervention will delay or prevent complications, reduce the burden both in terms of cost and quality of life on the patient, the carer and healthcare services, and reduce personal and social care expenditure.

Sources:
IDF Task Force on Diabetes Health Economics
CODE-2 is a trademark of GlaxoSmithKline.