

THE DIABETIC PROBLEM IN SINGAPORE

The problem from the epidemiological stand-point has been defined, if only partially, by the Ministry of Health community survey of 16,497 persons in 1975. This survey includes only persons aged 15 years and above, but the racial, sex and age distribution of the subjects studied reflect those of the country at large. The prevalence of diabetes from this study is .199%, indicating that there are about 46,000 diabetics in Singapore. The prevalence is 2.36% in males and 1.64% in females, giving a male:female ratio of 1.44:1. Less than 8% of diabetics are found in subjects between 15 and 39 years of age, and the maximum prevalence of 7.04% is found in the 50-54 year age groups. The prevalence is highest among Indians (6.09%) while figures for Malays and Chinese are 2.43% and 1.55% respectively. However on account of the racial composition of the population, the actual number of diabetics is greatest among the Chinese, followed by Indians and Malays.

Perhaps the most important finding from the study is that only 40.4% of the diabetics have been previously diagnosed. Put in another way, for every two known diabetics there are 3 diabetics who are not diagnosed and therefore not receiving treatment. There are thus in Singapore approximately 27,600 undiagnosed diabetics (as against 18,400 known cases). Moreover this survey is based on detection of glycosuria which at once excludes mild diabetes and those cases associated with high renal threshold for glucose. (Renal threshold rises, for example, with age.) The number of undiagnosed and therefore untreated diabetics is expected to substantially exceed 27,600. This does not, of course, include diabetes occurring in those younger than 15 years of age, but the number of patients in this age groups is, from clinical impression, admittedly small.

Those who manage diabetic patients in Singapore cannot fail to be struck by the infrequency of ketosis-prone diabetes, in contrast to what is taught in standard medical textbooks. Less than 5% of our patients are ketosis-prone. Furthermore, there is no good correlation between age of onset of clinical diabetes and tendency to ketosis, so that the conventional connotations of the terms "juvenile" and "maturity-onset" do

not apply. The terms "ketosis-prone" and "non-ketosis-prone" are therefore preferred in denoting severity of diabetes in the local context. The majority of our cases occurring in young subjects are non-ketosis-prone. On the other hand, in one hospital series¹, about 5% of new cases present as non-ketotic hyperosmolar diabetic coma. These patients, if they survive the critical hyperosmolar state, are usually mild non-ketosis-prone diabetics.

Obesity is less frequent in our patients and since ketosis-prone diabetes is rare, there is a large group of patients who are not obese and who are non-ketosis-prone. This group is important to distinguish from the obese non-ketosis-prone cases from the point of view of planning dietary management.

Although diabetes in Singapore is less prone to ketosis and can in this respect be regarded as milder, the complications of diabetes are by no means less severe. Compared to a series based on Caucasian patients, the prevalence of ischaemic heart disease and peripheral neuropathy among our newly diagnosed diabetics is actually significantly higher¹, although peripheral arterial disease is rare. Prevalence of retinopathy is comparable. This pattern of complications and their frequencies imply that in terms of threat to life and suffering, diabetes as seen in Singapore is not mild.

There is general agreement that good control of diabetes delays or prevents those complications which account for the bulk of morbidity and mortality of the disease. The degree of control of blood sugar that can be achieved in diabetics at the moment is however still far from the ideal in the physiological sense, although hope of achieving the ideal may soon be found either in islet-transplantation or in the artificial pancreas. Be that as it may it is important to discover the large number of diabetics who are still undiagnosed and offer them treatment early. Only thus can we hope to minimise the ravages of the disease.

REFERENCE

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