

Editorial

Management of patients with type 2 diabetes mellitus: a lesson from the past

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Because of advance in technology and the abundance of fine food, diabetes mellitus has been increasing throughout the world. Diabetes mellitus in my country, Japan, is type 2 diabetes which accounts for 95% of diabetes mellitus, even including young people.

In patients with type 2 diabetes mellitus, insulin secretion is preserved after onset of the disease, so that the most effective treatment is physical exercise and diet. However, the management of type 2 diabetes mellitus is not so easy. I would like to give some information on treatment of type 2 diabetes in Japan drawn from our experiences.

TYPE 2 DIABETES REQUIRES ANNUAL PHYSICAL CHECK-UP FOR TIMELY DETECTION

Patients with type 2 diabetes mellitus have no symptoms for a long time from disease onset to the time when blood glucose levels go over 200 mg/dl. In late stages some patients have their diabetes mellitus diagnosed because of symptoms. At that time, diabetic complications have already developed and, not infrequently, to irreversible stages. If type 2 diabetes mellitus is detected at an early phase, for example within 2 years after onset, hyperglycemia can be completely reversed to normal carbohydrate metabolism. Therefore, annual testing of blood glucose concentrations is very important for early diagnosis of type 2 diabetes mellitus. In Japan, a protocol to detect glycosuria in school students at all levels is operating. This urine test takes place every year and is obligatory under the law of school health. This system for checking glycosuria or

blood glucose levels also exists for company employees and citizens.

The next difficulty has to do with the handling of information by patients. Unfortunately, diabetic patients, sometimes do not have sufficient information or they ignore it because they do not have any visible symptoms. They visit a clinic or hospital only when their diabetic complications develop. One of the big problems of type 2 diabetes in our country is the high medical expenditure, especially for dialysis in patients with diabetic nephropathy. Dialysis drains both government funds and patient lives.

In 1998, the famous United Kingdom Prospective Diabetes Study (UKPDS) showed that at diagnosis, 50% of UKPDS subjects already had signs of diabetic tissue damage, 37% had microaneurysms or more severe retinopathy in one eye, 18% had retinopathy in both eyes, 18% had microalbuminuria, 4% had clinical-grade albuminuria, 13% had absent ankle reflexes, and 39% had arterial hypertension. Thus, I would like to insist on the importance of education and annual checking of glucosuria and blood glucose in countries where type 2 diabetes is prevailing.

SOFT DRINK SYNDROME

Until the second world war, there were very few diabetic patients in Japan because people regularly ate traditional Japanese foods high in dietary fiber and carbohydrates (60%) and low in fat (15%). Nowadays, young people's lifestyles have changed to irregular eating habits, they do not like Japanese traditional food and have switched to americanized or europeanized diet containing a lot of fat. Their fat intake has increased from 15% to 40% on average. This extends to their preference for soft drinks with high sugar content. In young people with a family background of diabetes mellitus, soft drink intake can lead to very high blood glucose levels and even diabetic ketoacidosis. The above pattern is named soft drink syndrome. These patients are usually obese and after admission

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to the hospital, treatment involving food restriction easily reverses blood glucose to the normal range. Soft drink syndrome was accepted as a medical term by the Japan Society of Diabetes in 1996 and was used by Yamada et al in a paper published in *Diabetes Care* in the same year¹⁻³.

Now, for primary prevention of diabetes mellitus in young people, it is vital to teach them and an option would be to have one school class in the elementary school devoted to the teaching of the terror of diabetes.

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