eases have no greater IMT of the carotid arteries than nondiabetic subjects of the same age-group (in our study, ≤40 yr of age). So IDDM alone does not seem to be a risk factor for developing premature atherosclerosis. Meanwhile, we studied >160 patients, continuing to confirm our previous results.

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NIDDM, NON-INSULIN-DEPENDENT DIABETES MELLITUS; IDDM, INSULIN-DEPENDENT DIABETES MELLITUS; IMT, INTIMA-MEDIA THICKNESS; EASD, EUROPEAN ASSOCIATION FOR THE STUDY OF DIABETES.

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Response to Frost

We reported advanced atherosclerosis observed in 20 IDDM patients (1). We had been energetically examining carotid arteries of young IDDM patients. And, at the 14th International Diabetes Federation Congress held in Washington, DC, in 1991, we demonstrated the significantly thicker carotid arterial wall in diabetic children compared with age-matched healthy, nondiabetic children (2). Furthermore, we presented the results in 66 diabetic patients 7–29 yr of age at "The International Symposium on Epidemiology and Etiology of IDDM in the Young" held in Paris, France, in March 1991. The measured IMTs of the carotid arterial wall were 0.49 ± 0.09 (means ± SD) and 0.73 ± 0.27 mm in IDDM patients 7–19 and 20–29 yr of age, respectively. The values were significantly larger than those of age-matched normal subjects (0.42 ± 0.05 vs. 0.52 ± 0.07 mm in subjects 14–19 and 20–29 yr of age, respectively). Those 66 patients, except 1, had no clinically determined nephropathy, neuropathy, or retinopathy. Now, the number of the measured IDDM patients increased to about 200 patients, and the results strongly indicated that young IDDM patients had advanced atherosclerosis in their carotid arteries, which precedes the onset of microangiopathies.

As far as the middle-aged NIDDM patients are concerned, we also examined the relationship between IMT and degrees of diabetic microangiopathy and macroangiopathy. Our preliminary results showed high correlations of nephropathy and neuropathy with IMT. Previous reports showed high incidence of nephropathy and neuropathy in diabetic patients with long duration of diabetes (>10 yr). Our data showed high incidence of these complications in diabetic patients with even shorter duration (0–10 yr).

These data showed that in diabetic patients, IMT correlates with the degrees of diabetic microangiopathy. However, young IDDM patients without any diabetic microangiopathies, hypertension, dyslipidemia, or obesity, but with hyperglycemia showed early atherosclerosis in their carotid arteries.

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IDDM, INSULIN-DEPENDENT DIABETES MELLITUS; NIDDM, NON-INSULIN-DEPENDENT DIABETES MELLITUS; IMT, INTIMAL-MEDICAL THICKNESS.

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