Hypertension and diabetes mellitus (DM) commonly occur together. The presence of both disturbances may further increase the risk of cardiovascular and renal complications. Thus the tendency of high blood pressure (BP) to promote stroke, coronary heart disease, congestive heart failure, nephrosclerosis, and additional vascular damage may be complemented by DM-induced microangiopathy and macroangiopathy and also have an adverse influence on the progression of diabetic nephropathy and perhaps also retinopathy. As a result, cardiovascular problems and renal failure lead to early disability or death in the majority of diabetic patients. Considering the prevalence, clinical importance, and prognostic relevance of both hypertension and DM, the pathogenesis and treatment of their particular association deserve intensified investigation.

Hypertension may either precede the clinical appearance of DM or develop sometime during its course. The limited pathogenetic data available so far indicate that in DM type I, BP tends to rise when microalbuminuria becomes apparent; diabetic nephropathy may therefore already in its early stage in some way promote hypertension. Whether and to what extent DM types I and II interact differently with BP regulation is presently unknown. Nevertheless, the exchangeable body sodium and cardiovascular responsiveness to norepinephrine are both often increased in DM, regardless of the patient’s age, insulin dependence or nondependence, and the presence or absence of retinopathy or neuropathy. The presence of excess body sodium clearly differentiates the diabetic state from uncomplicated essential hypertension, and it may well complement cardiovascular hyperreactivity as a factor favoring increases in BP in DM. The activity of other pressor factors such as the sympathetic and renin-angiotensin-aldosterone systems seems to be normal or even low in the majority of diabetic patients. A possible pathogenic role of insulin and other components of carbohydrate regulation and metabolism per se in DM-associated hypertension remains to be evaluated.

In the long-term care of diabetic patients, treatment of hyperglycemia and associated metabolic disturbances favoring atherosclerosis should always be combined with careful monitoring of BP and therapy of coexisting hypertension. Based on the therapeutic approach in essential hypertension, high BP of either mild or more severe degree and further complicated by DM would appear to be a particularly strong indication for the general measures aimed at reduction of BP and/or associated risk factors, such as reducing excess weight, treating hyperlipidemia (both primarily by diet), restricting salt intake to an amount that is acceptable to the patient under ambulatory conditions (if possible, about 3–5 g NaCl/day), not smoking, not taking oral contraceptives, and getting appropriate physical exercise. Considering the probable additional cardiovascular risk when mild hypertension is complemented by DM and the possible adverse influence of increased BP on the course of diabetic nephropathy, we favor the institution of pharmacotherapy when BP remains > 140 to 160 over 90 to 94 mm Hg despite appropriate diabetes therapy and general measures. Nevertheless, when antihyperten-
sive drugs are prescribed in DM-associated mild hypertension, it seems particularly important that they be subjectively well tolerated and that they do not adversely affect glucose, potassium, and lipid metabolism or other potential cardiovascular risk correlates, thus perhaps offsetting a beneficial effect of lowered BP on cardiovascular prognosis. Apart from having metabolic "neutrality" or even an ameliorating influence, the desired profile of antihypertensive drugs in DM should if possible be devoid of a tendency to mask symptoms of hypoglycemia or to promote orthostatic hypotension, sexual dysfunction, or functional aggravation of peripheral and coronary vessel disease in patients whose primary disease makes them already prone to these complications. Therefore it is obvious that the conventional approach with diuretics or beta blockers as first-line drugs and sympatholytics as alternative second-line drugs, which largely imitates the empirical stepped-care plan used widely in essential hypertension, is more problematic in DM. Calcium antagonists and converting enzyme inhibitors are two interesting classes of agents that may exert little relevant metabolic side effects. Thus they deserve evaluation as step 1, 2, or 3 drugs in the treatment of diabetes-associated hypertension. When DM and high BP are further complicated by renal failure, dialysis or renal transplantation will at some stage become necessary to sustain the life of the patient. These therapies and their interactions with carbohydrate metabolism and the cardiovascular state and prognosis confront the health system in an increasingly large population with end-stage diabetic nephropathy.

Considering these aspects and a variety of more recent research activities, observations, and clinical concepts, it appeared timely to hold the First International Symposium on Hypertension Associated with Diabetes Mellitus. The conference, which took place June 22-23, 1984, in Berne, Switzerland, was an official satellite of the 10th Scientific Meeting of the International Society of Hypertension and was scientifically cosponsored by the International Diabetes Federation, Swiss Diabetes Association, Association Française des Diabétiques, Deutsche Diabetes Gesellschaft, Swiss Society of Nephrology, German Society of Nephrology, Société de Néphrologie, and Swiss Association against High Blood Pressure. We wish to express our thanks to these societies, to all colleagues who have actively contributed, and in particular, to the company Eutherapie/Servier, France, which supported the symposium, together with the Swiss Association against High Blood Pressure, and these proceedings financially and, through Dr. John Peristiany and Mrs. Annick Gaubert, helped greatly in the organization. Finally, we hope that this issue may help to stimulate further much-needed research and also provide some practical information to cardiovascular physicians, diabetologists, nephrologists, and others interested in and confronted with the daily problem of hypertension associated with diabetes mellitus.

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