Preface

Diabetes, particularly type 2 or adult onset diabetes, is increasing in prevalence in the world. In the United States the prevalence of diabetes is over 12% in persons of age 60 years and older. The prevalence in Europe is 8–10% and catching up with the United States. The trend worldwide is for this prevalence to increase given the epidemic of overweight and obesity (2/3 of the adult United States population is overweight or obese). Thus, the fact that diabetes affects the brain is of enormous public health importance.

While acute cerebral complications of diabetes, such as hypoglycemia or stroke, are well recognized, more chronic cerebral conditions, such as cognitive and mood disorders, have failed to be recognized until recently. The last few decades have yielded new insights linking type 2 diabetes to dementia and other cognitive disorders and into the cognitive consequences of type 1 diabetes. Hence, the impact of diabetes on the brain has become a very multifaceted topic. Clinical care and research on cerebral complications of diabetes now involve internists, neurologists, psychiatrists, psychologists, and basic scientists. There has been a surge in pre-clinical and clinical research papers ranging from topics such as management of hyperglycemia in acute stroke to disturbances in insulin signaling in Alzheimer’s disease. This has led to substantial progress in the field, but it also makes it more difficult for those involved to keep track of all relevant developments.

This book provides an update on the acute and chronic consequences of diabetes in the brain. We brought together experts from around the world in order to provide a helicopter view of this intriguing topic. The book offers not only in-depth reviews on cerebral complications of diabetes, but also introductory chapters on current insights into the pathophysiology and clinical management of diabetes and its complications and on stroke, neuropsychological assessment and dementia. With these “update on diabetes for neurologists” and “update on stroke and dementia for diabetologists” we hope to offer relevant and easily accessible background information that puts the cerebral complications of diabetes into context.

The target audience of this book is broad and includes medical specialists taking care of persons with diabetes and researchers in the diabetes field. It is important to point out that most clinicians and researchers think that the only complications of diabetes are microvascular (retinopathy, renal, neuropathy) and macrovascular (heart disease and stroke). Given increased longevity, the
aging of our societies, and the increasing prevalence of diabetes, the chronic consequences of diabetes in the brain are at least as important but have failed to acquire the recognition that more traditional complications have. We believe that this book will bring the consequence of diabetes in the brain to the mainstream and thus has the potential to change the field.

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