
Preface

Neurodegenerative diseases are strongly linked with age, with older people being at higher risk. Global population demographics show that the world is rapidly aging, and so the prevalence of neurodegenerative diseases is rising, with Alzheimer's disease (AD) leading the statistics. In view of the growing prevalence of AD worldwide, better diagnostic tools and more effective therapeutic interventions are urgently needed, and much work in this field has been done in recent decades.

A major goal of current clinical research in AD is to improve early detection of disease and presymptomatic detection of neuronal dysfunction, concurrently with the development of better tools to assess disease progression in this group of disorders. The putative correlates used for detection and assessment are commonly referred to as AD-related biomarkers. The ideal biomarker should be easy to detect and quantify, reproducible, not subject to wide variation in the general population, and unaffected by comorbid factors. To evaluate therapies, a biomarker needs to change linearly with disease progression and closely correlate with established clinicopathological parameters of the disease.

The vast number of important applications in this field, combined with the untamed diversity of already identified biomarkers, highlights the pressing need to structure the research on AD biomarkers into a solid, a comprehensive, and an easy-to-use tool to be used in clinical settings. To date, few publications have systematically compiled results on this topic, and no atlas has been published. The objective of this book is to collect and summarize the most important studies in this field. Readers can find here a guide for reviewing the current status of research while easily visualizing outstanding results. The chapters of this atlas cover early diagnosis and risk of conversion, differential diagnosis, tracking of disease progression, and application of biomarkers in clinical practice. Each of these chapters includes an introduction and sections on biomarkers in cerebrospinal fluid and neuroimaging biomarkers. Although some other biomarkers have also been explored, we focus on the most important ones.

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Atlas of Biomarkers for Alzheimer's Disease

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