Neurobiology therapeutics and pathogenesis in Neurodegenerative Disease

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Editorial note

Neurodegenerative diseases are a major global health burden in the western world mainly with our elderly inhabitants. The World Health Organization (WHO) predicts that by 2050 a staggering 30 million people will be affected by disease of Alzheimer's in USA and Europe alone. Other diseases such as Huntington's disease, Parkinson's disease, fronto-temporal dementia, and amyotrophic lateral sclerosis also exert a great human toll on the pretentious individuals, society and their families. Research into these disorders is consequently of great importance, and this opportune text book summarises the current state of research into neurodegenerative diseases. The book is alienated into 10 major sections. The first section covers the basic scientific mechanistic features of neurodegeneration in 18 chapters. The role of mitochondrial dysfunction, free radicals, neurotrophic factors, excitotoxicity, metal ions, nitric oxide, and neuroinflammation in the pathophysiology of apoptotic neuronal death are deliberated. There is an excellent conversation on the role of protein misfolding is a common underlying theme in these disorders. The remarkable improvements in understanding the genetic bases of many of these disorders has been a major driving force in all fields of research; and has enabled the growth of genetically engineered cell models and transgenic mouse. It has also increased our sympathetic of the pathophysiology of sporadic forms of the diseases, and has allowed the design of targeted therapeutics. These features are covered in different sections during the course of the entire book. There is also a useful section on neuroimaging and a summary of a number of therapeutic methods to neurodegeneration. There are detailed reviews of Alzheimer's disease cover neuropathology, mild cognitive impairment, genetics, and then treatments. Similarly, other prion diseases and dementias such as fronto-temporal dementia are well covered. The dementias are placed in context with an excellent section on normal ageing. There are nine chapters on Parkinson's disease and associated movement disorders covering multiple system atrophy, corticobasal degeneration, progressive supranuclear palsy, four chapters on cerebellar degenerations, and six chapters on all the motor neurone disorders. Likewise Huntington's disease, neuroacanthocytosis, other poly Q disorders, Wilson's disease, brain iron disorders, and mitochondrial diseases are covered in the final section.

This is the main and most complete reference text on neurodegenerative diseases obtainable to date. The editors are bests in the field, and they have brought together a very powerful

list of contributors. Each section is nicely synchronized with a clinical introduction brief the clinical evaluation of the patient, and then leading into genetics, pathophysiology, neuropathology, and therapeutic options. The combination of good clinical information joint with basic science conversation brands this textbook of value to neurologists and psychiatrists as well as non-clinical neuroscientists, and is therefore an excellent addition to any neurodegenerative disease department library. In my view, there is no better overview of the subject currently obtainable, particularly in one textbook. My only caveat is that the pace of technical research is such that already some of the chapters are out of date. For example, recently RNA interference-based treatments for gene silencing have shown Huntington's disease, promise in transgenic mouse models of SCA1, and amyotrophic lateral sclerosis, and this is not included. Though it is the nature of the beast with this sort of textbook, and suspects that the editors are already planning to the second edition. Other minor criticism is that a biomarker research would have been useful; this is an area of significance in diseases of neurodegenerative. Major goal of present research is to recover early detection of presymptomatic detection and disease of neuronal dysfunction. There is also having the need for better tools to measure disease progression particularly disease-modifying therapies for the evaluation. However, these are slight points in what is obviously an outstanding textbook covering significant area both neuroscientific research and clinical vise.