About the Editors

Sten Fredrikson

Sten Fredrikson is Professor of Neurology at the Department of Clinical Neuroscience at the Karolinska Institute in Stockholm, Sweden. His research activities in the field of multiple sclerosis were initially focused mainly on immunological studies, including investigations of the cerebrospinal fluid. Over the last 25 years, his research activities have also included several other aspects of the disease. He is an author of more than 160 published original articles published in peer-reviewed journals, indexed in PubMed, and he is also the author of many other review articles and book chapters. He is a member of several national and international neurological boards, including chairman of the Educational and Examination Committee of the Swedish Neurological Society and Swedish delegate of the EFNS, European Board of Neurology and MSIF International Medical and Scientific Board.

Jan Hillert

Jan Hillert was appointed Professor in 2001. He is active at the Department of Clinical Neuroscience at the Karolinska Institute in Stockholm, Sweden.

For reprint orders, please contact: reprints@futuremedicine.com

Foreword

Emerging oral medications for multiple sclerosis

Sten Fredrikson & Jan Hillert

During the latest two decades, we have experienced a profound change in our view of multiple sclerosis (MS). And still, we are probably only at the beginning of a new era.

The parenteral drugs that were introduced 10–20 years ago as first-line therapies, IFN- β and glatiramer acetate, have proven that relapsing–remitting MS is a treatable disease although the treatment effect is usually modest on relapse rate. These drugs have mostly shown comparable efficacy and good tolerability profiles. Over the years, there has been a tendency to initiate treatment as soon as possible after onset, and both IFN- β and glatiramer acetate are approved for treating clinical isolated syndromes. The wish to initiate treatment early has also led to the development of new diagnostic criteria for MS with MRI as an important paraclinical help. We have seen three modifications of the diagnostic criteria over the last 12 years, all aiming at earlier and easier diagnostic work-up. The long experience and good safety profiles of IFN- β and glatiramer acetate will speak in favor of continuous use of these drugs as first-line therapy in relapsing–remitting MS and clinical isolated syndromes. Another therapy in use for treatment of relapsing–remitting MS for some years is natalizumab. For this drug, efficacy in reducing relapses is considered superior to the the first-line therapies, but the safety profile has been a concern with the risk of developing progressive multifocal leukoencephalopathy in susceptible individuals.

However, there are still unmet medical needs with all these drugs, for example, the parenteral administration and the lack of efficacy in progressive patients. In **Chapter 1**, Fredrik Piehl elaborates on these aspects and sets the stage for further discussions of new oral medications.

In **Chapter 2**, Felix Luessi and Frauke Zipp thoroughly describe potential pathogenetic mechanisms that could be targeted with new oral medications. It is an impressive number of drugs, not only attacking the immune system, but also the neuronal pathology, that will need further exploration and clinical studies.

We already have one oral disease-modifying MS-therapy available, fingolimod, and there are three other drugs that have reached Phase III studies, teriflunomide, laquinimod and oral fumarate/BG12. Another player in this field, cladribine, was withdrawn last year due to risk/benefit considerations. Regarding the safety profiles of the oral drugs in this stage of development our experience is limited. In **Chapter 3**, Douglas R Jeffrey describes our present knowledge of these oral drugs and reviews available study results.

In **Chapter 4**, Yuval Karmon, Bijal Mehta and Bianca Weinstock-Guttman further expand the field of potential future oral drugs by including some symptomatic therapies and hypothetical strategies for promoting CNS protection and repair.

In summary, the future for new advances in oral medications in MS looks promising.

Financial & competing interests disclosure

Sten Fredrikson has received honoraria for lectures, consultancy and educational activities from Allergan, Bayer, Biogen Idec, Merck Serono, Sanofi and Teva. Jan Hillert has received personal compensation for activities with Biogen Idec, Merck-Serono, Novartis and Teva Neuroscience as participant on advisory boards, consulting and/or speaking engagements. Jan Hillert has received research support from Sanofi-Aventis Pharmaceuticals, Inc., Bayer Pharmaceuticals Corporation, Biogen Idec and Merck-Serono. The authors have no other relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript apart from those disclosed.

No writing assistance was utilized in the production of this manuscript.