Multiple Sclerosis

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Multiple sclerosis (MS) is one of the most common chronic inflammatory demyelination diseases of the central nervous system (CNS) and imposes a major burden on the affected young lives. Great progress has been made in improving our knowledge of MS immunology.[1] The treatment era for MS began in the early 1990s with the approval of the first disease-modifying therapy (DMT). Combined immunological investigations and targeted treatment approaches changed the management of MS from treating acute exacerbations to focusing on preventive therapeutic options that lessen the risk for exacerbations and disability progression and reduce the disease activity which can be assessed by magnetic resonance imaging (MRI).

In this special section entitled "Multiple Sclerosis," three related articles are grouped to reflect the current advances in the pathogenesis and clinical management of MS. Constantinescu and Gran critically review the role of different groups of T cells in the pathogenesis of MS,[2] which leads to a rational therapeutic approach for T-cell–mediated immune-regulatory mechanism. Tanasescu *et al*. give an in-depth glimpse of the rapidly evolving MS treatment landscape.[3] Up-to-date DMTs in clinical settings and several promising agents tested in pivotal phase II or III trials are reviewed, including the trial data, mechanisms of action, efficacy, and side effects.

Nevertheless, it remains essential to make an early diagnosis of MS and recognize the subjects who are prone to have long-term disability or an early relapse, prior to initiating therapies in the affected subjects. Diagnosing MS in children is more challenging than in adults due to the frequency of other childhood CNS inflammatory diseases such as acute disseminated encephalomyelitis (ADEM) and neuromyelitis optica (NMO). Chou *et al*. summarize the diagnostic criteria for pediatric MS and its mimics,[4,5] and review the key clinical and MRI findings and novel biomarkers that may help in making a diagnosis.

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