Special Issue

Multiple Sclerosis: From Molecular Pathology to Novel Therapeutic Approaches

Message from the Guest Editors

Multiple sclerosis is a chronic disease characterised by inflammation, extensive primary demyelination, and progressive neurodegenerative processes. Long-term disability in MS is largely independent of relapses and correlates well with brain atrophy detected by MRI images. Smouldering lesions show a low-grade chronic inflammation characterised by chronic axonal damage and concurrent demyelination and are further characterised by a gradual increase in size towards the normal-appearing white matter. During the course of the disease, the proportion of smouldering lesions increases over time and is higher in progressive than in relapsing–remitting disease. These lesions have also been shown to correlate with disability and predict progression in both relapsing–remitting and secondary progressive SM. It is important to revise the current disease classification system, clinical trial designs, and trial endpoints. Furthermore, novel molecular biomarkers (like NfL, GFAP, CHI3L, CXCL13, kynurenines, redox molecules, etc.) help the decision about the optimal treatment of MS patients.

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