31st ECTRIMS Congress: Showcasing the current fields of MS
New evidence in the field of prevention – new trial results and treatment strategies

The 31st Congress of the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) in Barcelona attracts more than 8,000 participants from around the world. It is an impressive showcase for all current aspects in the field of MS research and therapy. Scientific highlights include the therapeutic challenge of progressive MS, the relatively new field of MS prevention, updates in new trial results and treatments strategies, new prevalence data from around the world or new approaches to detect neuroprotection, Scientific Congress Committee Chair Prof David Miller reports.

Barcelona, 7 October 2015 – “ECTRIMS hosts the world’s largest annual international conference devoted to basic and clinical research in multiple sclerosis, attracting more than 8,000 participants from around the world. The 2015 Congress programme is designed to tackle the main topics signalling the path for future MS management,” explains Prof David Miller (London, UK), ECTRIMS Vice President and Chair of the Scientific Congress Committee.

“At this meeting, we are discussing what is in store for diagnosis, what is the next step in treating patients and how we can shape treatment to suit each individual’s profile. One of the hot topics is the question how the environment continues to influence the evolution of MS. In this regard, one session reports on the epidemiology of MS around the world.” Congress participants are also debating on the new subject of prevention and devote time to the application of new information technologies with the programme ‘MS Care 3.0’, to optimise the clinical care for patients with MS. In basic research, the current role of genetics and new players in the pathogenesis of MS are among the main topics on the meeting agenda.

Unmet needs in progressive MS

Prof Miller: “When pointing out some of the scientific highlights, mention should certainly be made of two award lectures.” While Prof Giancarlo Comi from Milan a pioneer of the development of disease-modifying therapies in MS, will elaborate on evolving concepts in MS treatment (Charcot lecture), Prof Alan Thompson from London will discuss the therapeutic challenges of progressive MS (ECTRIMS lecture). “This area is of particular interest since the impressive therapeutic progress we have witnessed over the last two decades has been limited to treating the relapsing/remitting form of MS,” Prof Miller says.

“The progressive form of the disease which afflicts about 50 per cent of people with MS, however, still leaves us without adequate treatment options to control progression or manage the burdensome symptoms. This unmet need clearly calls for joint efforts of the MS community to overcome the hurdles preventing therapeutic advances in this field.”

MS prevention and risk reduction: Genes and environment interact

Several sessions at the ECTRIMS Congress in Barcelona are devoted to the growing evidence on variants of genes, environmental or lifestyle factors influencing the risk for developing MS. “There is broad agreement that complex interactions between genetic predisposition
and environmental triggers play a crucial role in autoimmune diseases such as MS. Recent Swedish research for example, which is discussed at the ECTRIMS Congress, demonstrates interactions between smoking, Epstein Barr virus infections, obesity or exposure to organic solvents and specific genetic risk factors,” Prof Miller summarises.

**New data on MS risk factors: Lack of sunlight, gut microbiome and fatty acids**

Among the environmental factors influencing the risk for MS accumulating evidence points at a number of candidates that seem to play an important role. These include low sunlight exposure and Vitamin D deficiency, viral infections, hygiene, high salt intake and smoking. At the ECTRIMS Congress, a US-Canadian research team presents, for example, results supporting the hypothesis that low ambient UV-B exposure is a risk factor for MS.

“Understanding the relevance and role of such environmental factors will open a new chapter in possible prevention of MS, or reducing the risk of it developing,” Prof Miller states. “This includes new aspects that have more recently attracted research interest such as the contribution of the individual gut microbiome to the risk of developing MS – a topic presented by colleagues from Munich – or dietary aspects such as the intake of fatty acids.” A US-Norwegian study presented at the Congress shows that higher intakes of linolenic acid and linoleic acid can be associated with a lower MS risk. Late-breaking German research shows the first in vivo effect of the fatty acid propionate in humans on the development of immune-regulatory T cells.

**Increasing MS prevalence in many parts of the world**

ECTRIMS participants will also tackle epidemiology aspects, with particular focus on prevalence developments outside Europe and North America. “Studies from several parts of the world, in particular some Asian and Arab countries, Iran, Latin America as well as Australia and New Zealand, demonstrate an increase in the prevalence of MS around the world over time,” Prof Miller reports. “It will be important that policy makers take these developments into account when planning health care resources and researchers will need to engage in a more in-depth analysis as to which factors might be contributing to this development.”

**Current trial results**

“The ECTRIMS Congress is traditionally an important forum for MS researchers to present latest trial data that will have an impact on future treatment decisions and strategies,” Prof Miller says. “This is all the more important as there is an increasing number of drugs available – with up to 12 agents in many European countries and several more to come soon.”

Among the trials involving new drugs that are of particular interest at the Barcelona meeting, to name only a few, are new data from the Phase III OPERA I and II studies that will provide information on the efficacy and safety of a new humanised monoclonal antibody compared with IFN-β-1a therapy, and from the Phase III ORTARIO study that will show which role this very substance might be playing in the treatment of primary progressive MS (PPMS). “Contrasting data are presented as far as the comparison of the two second-line treatments fingolimod and natalizumab are concerned,” Prof Miller reports. “While data from a French multicentre observational study provides evidence in favour of natalizumab as compared to fingolimod to decrease disease activity as assessed by relapses or new MRI
lesions within the first year after treatment onset, new Danish registry data showed no difference, not even a trend, between the disease activity in natalizumab- and fingolimod-treated RRMS patients. The “Late Breaking News” session on Saturday morning will also highlight other new therapeutic research including new data on repurposed treatment.”

Another emerging field that is being discussed at the ECTRIMS Congress is the potential of brain and spinal cord atrophy as a measurement to evaluate the effectiveness of MS therapies. “Brain and spinal cord atrophy can be measured quite precisely if appropriate techniques are being applied,” says Prof Miller. “The correlation between the response of atrophy to treatments and the clinical response is quite good, and the measurement might be an attractive biomarker, especially as a way of detecting tissue neuroprotection, which we think is a crucial step in finding effective treatments for the progressive forms of MS.”

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Sources: ECTRIMS Lecture: Thompson, Progressive MS – how do we meet the therapeutic challenge; ECTRIMS Charot Lecture: Comi, Evolving concept in multiple sclerosis treatment; Parallel Session 6 – Genetics and environment: Olsson, Genes and lifestyle/environmental factors in MS; Hedström et al., Smoking, organic solvents and MS susceptibility; Tremlett et al., Sun exposure over the life-course and association with multiple sclerosis; Parallel Session 7 – Will MS be prevented? Correlae, Environmental factors; Hohlfeld, Modulating microbiota: friend or foe? Bjørnevik, Polyunsaturated fatty acids and the risk of multiple sclerosis; Parallel Session 10 – Update on therapies: Fernandez, Therapeutic algorithms in MS in 2015; Montalban et al., Efficacy and safety of orelizumab in primary progressive multiple sclerosis – results of the placebo-controlled, double blind, Phase III ORTARIO study; Hauser et al., Efficacy and safety of ocrelizumab in relapsing multiple sclerosis – results of the interferon-beta-1a-controlled, double-blind, Phase III OPERA I and II studies; Koch-Henriksen et al., A comparison of MS disease activity between patients treated with natalizumab and fingolimod; Laplaud et al., Comparative efficacy of fingolimod versus natalizumab in multiple sclerosis: a prospective multicenter observational study; Late Breaking News Session: Haghiakia et al., Impact of fatty acids on CNS autoimmunity and their therapeutic potential for multiple sclerosis; Hot Topic Session 5 – Incidence, prevalence and phenotypes of demyelinating disease outside Europe and NA: Fijihara, Asia; Yamout, Epidemiology of multiple sclerosis in the Middle East; Eskandarieh, Incidence and prevalence of multiple sclerosis in Iran; Cristiano, Latin America; Taylor, Australia/New Zealand; Hot Topic Session 4 – Brain and spinal cord atrophy: Arnold, Brain and spinal cord atrophy as a primary endpoint in clinical trials.