Multiple sclerosis and related disorders 2

PP2065

Abstract withdrawn

PP2066

Comparison of 2005 and 2010 Macdonald MRI criteria for diagnosis of MS: a retrospective study in London

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Objective: Multiple sclerosis (MS) can be difficult to diagnose clinically, however MRI imaging can provide evidence that can support a clinical diagnosis. The Macdonald criteria has been developed to make the diagnosis of MS more uniform and reliable, especially in the context of MRI. It was developed in 2001 and has been revised in 2005 and 2010. The aim of this study was to compare the diagnostic validity of the 2005 and 2010 criteria.

Method: We collected initial MRI images for 38 patients from the MS clinic at the Royal London hospital from 2006-2011 who presented with symptoms suggestive of demyelination. Their images were reviewed in terms of dissemination in space (DIS), dissemination in time (DIT) and both DIS and DIT using the 2010 and 2005 Macdonald criteria.

Results: From this study, both criteria showed 100% specificity in the diagnosis of MS and 100% positive predictive value. Both showed similar sensitivity 0.53 and 0.66 and negative predictive value of 0.33 and 0.2 in 2005 and 2010 criteria respectively.

Conclusion: Although this study has a limited number of patients, it did show similarities in both criteria in terms of diagnostic value. However, in the real life clinical setting, the 2010 criteria has advantages over the 2005 criteria in that MRIs do not need to be delayed to be valid for use in diagnostic interpretation—often in the acute setting patients are scanned within a few days and therefore the 2010 criteria allows MRI diagnosis without re-scanning later.

Disclosure: Nothing to disclose

PP2067

Brain distribution of MS565, an imaging analogue of siponimod (BAF312), in non-human primates

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Introduction: Siponimod (BAF312) is a selective sphingosine 1-phosphate (S1P1,5) receptor modulator currently in Phase 3 development for secondary progressive multiple sclerosis. Experimental studies in rats showed that siponimod penetrates into the CNS (4-8 hours post-administration) and may result in direct beneficial effects. We investigated the brain distribution and kinetics of siponimod by using an iodine-labeled analogue with similar rat pharmacokinetic properties, [123I]MS565, and single photon emission computed tomography (SPECT) in non-human primates (NHP).

Methods: [123I]MS565 (radioactive half-life of 13.2-hours) was administered to 2 adult male rhesus NHPs (Macaca mulatta), as single intravenous bolus. SPECT studies were performed using a MollyQ camera (Neurophysics Inc., Shirley, MA, USA). Brain penetration was assessed by serial dynamic scanning over a 2-day period. The scans were reconstructed and analyzed using PMOD 3.405 software. Standardized uptake values (SUV) were calculated by normalizing for injected activity and body weight. Subsequently, images were co-registered to a MRI template for volumes of interest extraction, time-activity curves generation and brain penetration estimation. Blood samples were taken to determine the radio-metabolite concentration in plasma.

Results: [123I]MS565 penetrated NHP brain with highest concentration of 0.008-0.014%ID/mL at around 24-hours post-injection. Peak SUV values were around 0.6-0.8 during day 2 imaging session. Radiotracer metabolism in plasma was slow and at 24-hours post-injection ~70% of parent compound was still present in plasma.

Conclusions: [123I]MS565 is a promising SPECT imaging agent to investigate the potential CNS distribution of siponimod. Whole-body imaging is ongoing to obtain radiation absorbed dose estimates for [123I]MS565.

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PP2068
Cerebrospinal fluid inflammatory markers in patients with multiple sclerosis
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Introduction: Multiple sclerosis (MS) is an inflammatory-demyelinating disease of the central nervous system (CNS). Autoimmune inflammation is common in the early stages of MS. This stage is followed by the neurodegenerative process. There are an increasing number of studies dealing with biomarkers in CSF and their role in the diagnosis and treatment of MS. We hypothesized that the levels of some markers could be changed in MS in comparison with controls. We studied five inflammatory markers (interleukin-6 (IL-6), interleukin-8 (IL-8), interleukin-10 (IL-10), beta-2-microglobulin, orosomucoid).

Methods: CSF and serum levels of inflammatory markers were assessed in 38 patients with newly diagnosed MS meeting McDonald’s revised diagnostic criteria and in 28 subjects as a control group (CG). In the control group were patients with non-inflammatory disease of CNS. The lumbar puncture was indicated from differential diagnostic reasons. In the MS patients, the lumbar puncture was performed at the time of the first clinical symptoms compatible with MS. None of our patients had been treated by corticosteroids before the lumbar puncture.

Results: Levels of beta-2-microglobulin and interleukin-8 in CSF were found to be significantly higher in MS patients in comparison to CG (p<0.001 resp. p=0.007). No differences in other CSF markers (IL-6, IL-10 and orosomucoid) and serum levels of all markers between both groups were found.

Conclusions: The levels of two studied inflammatory markers were found to be increased at the time of first clinical symptoms of MS. Research on the role of inflammatory and neurodegenerative markers in MS should continue.

Disclosure: Nothing to disclose

PP2069
Previous treatments influence disease activity during fingolimod therapy in multiple sclerosis patients
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Introduction: Fingolimod (FTY) is the first oral drug approved for Relapsing Remitting Multiple Sclerosis (RRMS) patients. In the absence of robust trials, the FTY long-term efficacy and safety profile is still to be determined. The aim of our study is to evaluate clinical and MRI outcomes of MS patients during FTY treatment.

Methods: One hundred and 26 patients treated with FTY for at least 6 months at San Raffaele Hospital MS Centre underwent clinical evaluation and brain MRI at baseline and after 3, 6, 12, 18 months. Sixty-seven patients had been previously treated with immunomodulants (IM), 59 patients with Natalizumab alone or in temporal combination with other treatments (NZ). Baseline group comparisons were performed using Mann-Whitney U-test.

Results: Compared to NZ patients, we observed in IM patients a significant greater reduction of the Annualized Relapse Rate (ARR) after 3 (p=0.046), 6 (p=0.006), 12 (p=0.001) and 18 months (p=0.0002) and a significant lower number of Gadolinium enhancing lesions (Gdls) after 3 (p=0.0003), 6 (p=0.003), 12 (p=0.002) and 18 months (p=0.0001). The ARR and Gdls decreased during the whole follow up in both IM and NZ groups, although NZ patients were significantly more active. Anyway, after only 6 months of FTY treatment, MS activity in NZ patients was also significantly reduced. No EDSS progression was observed in both groups.

Conclusions: FTY was able to control disease activity after both DMT and Natalizumab therapy, although without a complete suppression of MS activity after Natalizumab discontinuation, partly due to the known disease reactivation.

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PP2070

A demyelinating disorder characterized by repeated episodes of optic neuritis and brainstem dysfunctions in a girl with anti-MOG positivity

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Introduction: B cells and antibodies are important in central nervous system diseases (CNS) and antibodies against Myelin Oligodendrocyte Glycoprotein (MOG) could be relevant especially in pediatric cases.

Method: case report.

Results: A 16-year-old girl complained a brainstem dysfunction in August and in December 2010. Both times a brain MRI showed T2 hyperintense lesions in brainstem, along the third ventricle, right insula and left thalamus. Oligoclonal bands were absent. Anti-aquaporin antibodies were negative. Both times clinical and radiological abnormalities disappeared after intravenous steroids. Moreover in October 2010, April and October 2011 she had three episodes of optic neuritis (ON) and each time she recovered with steroids. A diagnosis of multiple sclerosis was made and she started glatiramer acetate in November 2011. She did well till September 2013 when she had a left ON with recovery. In November 2013 she presented another episode of severe brainstem dysfunction. A MRI showed a new T2 lesion involving mainly the right cerebral peduncle, hypothalamic region, and thalamus. Anti-MOG antibodies were found. High dose steroid had no benefits. She was then treated with both intravenous cyclophosphamide (3,700 mg) and rituximab (2,200 mg). The following brain MRIs showed a progressive reduction of lesions and she recovered.

Conclusions: In the spectrum of demyelinating disorders we can speculate that there are disease in which anti-MOG could be pathogenetic. Therefore they could be a biomarker to tailor therapy choosing drugs targeting B-cells.

Disclosure: Nothing to disclose

PP2071

CSF-KFLC in comparison to OCB and Q-IgG

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Introduction: Immunoglobulin G (IgG) oligoclonal bands (OCB) are the most widely used CSF test to support the diagnosis of multiple sclerosis (MS). However, determination of OCB using isoelectric focusing (IEF) on gels followed by immunoblotting is non-quantitative and demands methodological expertise. The disadvantage of the quantitative IgG-index is its low sensitivity. Several studies indicated that elevated kappa free light chains (KFLC) in the CSF might offer a quantitative tool to indicate intrathecal IgG synthesis by achieving a higher sensitivity than IgG-index. We aimed to compare KFLC levels to OCB patterns and IgG-index.

Methods: 331-paired CSF and serum sample were analysed, including 23 MS samples. KFLC and IgG were measured using an automated nephelometer and OCB were detected by isoelectric focusing (IEF) on gels followed by immunoblotting. OCB were classified in five patterns according to Andersson et al.1994.

Results: Q KFLC was significantly elevated in cases with OCB type 2 and 3, that are indicative for intrathecal IgG synthesis, as compared with type 1 (p<0.0001). 91% of patients with MS showed elevated Q KFLC, 87% showed positive OCBs and 87% showed elevated IgG-index.

Conclusion: Our data support the relevance of KFLC as a rapid and quantitative tool to detect intrathecal IgG response and thereby overcoming disadvantages of OCB and IgG-index.

Disclosure: Nothing to disclose
PP2072
Gray matter involvement in patients with multiple sclerosis; clinical, DTI magnetic resonance imaging, OCT findings
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PP2073
EEG changes in dalfampyridine treatment
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PP2074
Effectiveness of magnetic fields in fatigue in multiple sclerosis patients
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PP2075
A prospective study of urinary complications in multiple sclerosis; a multidisciplinary approach, urodynamic findings and treatment options
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PP2076
Two-year interim analysis of quality of life in patients with relapsing-remitting multiple sclerosis (RRMS) treated with delayed-release dimethyl fumarate in the ENDORSE study
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PP2077
Delayed-release dimethyl fumarate and disability assessed by the multiple sclerosis functional composite (MSFC) in relapsing-remitting multiple sclerosis (RRMS) patients participating in the DEFINE study
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PP2078
Teriflunomide in routine clinical practice: design of the TACO study
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PP2079
Abstract withdrawn

PP2080
The relationship between enhanced plaques with Gadovist and Magnevist contrast brain MRI and the neurological deficit in the acute phase of relapsing remitting multiple sclerosis
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PP2081
Secretory phospholipase A2 activity in serum and cerebrospinal relapsing-remitting multiple sclerosis fluid of patients with relapsing-remitting multiple sclerosis
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PP2082
Efficacy of delayed-release dimethyl fumarate in European patients with relapsing-remitting multiple sclerosis (RRMS): integrated analysis of the phase 3 DEFINE and CONFIRM studies
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PP2083
Effect of delayed-release dimethyl fumarate on health-related quality of life (HRQoL) in relapsing-remitting multiple sclerosis (RRMS) patients with and without measured disease activity
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PP2084
Treatment with interferon beta-1b although persistent aminotransferases elevation
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PP2085
Optimization of multiple sclerosis therapy via high-dose, high-frequency administration of subcutaneous interferon beta-1a: the OPTION study
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PP2086
Abstract withdrawn

PP2087
Impairment of cognitive functions in patients with clinically isolated syndrome – a pilot study
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PP2088
Homocysteine level in an experimental model of multiple sclerosis
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PP2089
Abstract withdrawn

PP2090
Treatment of a severe ADEM patient with immunoadsorption
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PP2091
A case of multiple sclerosis presenting as eight and half syndrome
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PP2092
Indicators of the immunological status after high-dosage immunoablative therapy with autologous stem cell transplantation in multiple sclerosis
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PP2093
The prediction of interferon’s flu-like syndrome in therapy of multiple sclerosis
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PP2094
Interleukins and the psycho-emotional sphere in patients with multiple sclerosis
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PP2095
Extracranial-intracranial venous structures in patients with relapsing-remitting multiple sclerosis, Doppler sonography, cranial MR venography and selective venography with the evaluation and comparison with healthy controllers
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Subjective reports of fatigue and depression in relation to objective measures of motor performance and cognitive functioning in relapsing-remitting multiple sclerosis
P.M.Keune, J. Muenssinger, U. Menge, U. Hofstadt-van Oy, P. Oschmann
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Tremor in multiple sclerosis (MS): different patterns of long latency reflexes suggest different underlying pathophysiological mechanisms
T. Khaybullin, F. Khabirow, L. Averyanova, E. Granatov, N. Babicheva
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Neurofibromatosis type 1 associated with multiple sclerosis
A. Khefifi, S. Naija, I. Chatti, S. Benamor, M.S. Harzallah, S. Benammou
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Clinical efficacy of sulbutiamine for the treatment of fatigue in patients with multiple sclerosis
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A composite of real-world practical measures of early disease activity can predict long-term disease outcome in CHAMPIONS
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United States multiple sclerosis patients’ preferences for injectable treatments
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German multiple sclerosis patients’ preferences for injectable treatments
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Gastrointestinal symptoms in patients with multiple sclerosis
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Markers of demyelination in patients with multiple sclerosis and thyroid autoimmune reactivity
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Diagnostic value of NMO/AQP4-antibody in assessing idiopathic inflammatory demyelinating CNS diseases (IIDCDs) in Egyptian patients
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PP2106
Female MS patients’ knowledge of multiple sclerosis and pregnancy relation
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PP2107
Retinal nerve fiber layer thickness and disability in multiple sclerosis patients
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PP2108
Rebound of multiple sclerosis activity after fingolimod therapy discontinuation
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PP2109
Concentration of 25(OH)D3 and calcium and phosphorus metabolism in patients suffering from relapsing-remitting multiple sclerosis
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PP2110
Clinical efficacy of delayed-release dimethyl fumarate in minority patients with relapsing-remitting multiple sclerosis (RRMS): an integrated analysis of the phase 3 DEFINE and CONFIRM studies
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PP2111
Seasonal activity of multiple sclerosis based on magnetic resonance imaging parameters in Georgia
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PP2112
Limited heart rate effects following siponimod re-initiation after variable periods of drug discontinuation
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PP2113
Interim results of the Swiss post marketing surveillance monitoring quality of life and treatment satisfaction in patients with relapsing-remitting multiple sclerosis (SWISSASCENT)
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PP2114
The importance of nitric oxide and arginase in the pathogenesis of acute neuroinflammation: are those contra players with the same direction?
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PP2115
Exercise-based patient education in people with multiple sclerosis
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PP2116
Paroxysmal dystonia as a manifestation of multiple sclerosis
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PP2117
Indolent progressive multifocal leukoencephalopathy (PML) after natalizumab in relapsing remitting multiple sclerosis (RRMS)
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PP2118
Abstract withdrawn

PP2119
Multiple sclerosis and motherhood choice: an observational study of Portuguese women
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PP2120
Objective measurement of fatigue in patients with multiple sclerosis - norm values and predictors
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PP2121
An observational, retrospective study on treatment adherence to subcutaneous interferon beta-1a in patients with relapsing multiple sclerosis using the RebiSmart electronic device and MITRA software
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PP2122

MSTCQ® “multiple sclerosis treatment concerns questionnaire” Spanish language version: cultural adaptation and validation

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PP2123

Lymphocytopenia after fingolimod therapy confronted with escalated administration against therapy interruption

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PP2124

Sleep disturbances related to multiple sclerosis

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PP2125

Injection-site reactions of serum-free subcutaneous interferon beta-1a in patients with relapsing multiple sclerosis: a 2-year interim analysis of a prospective observational study in Spain

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PP2126

Validity and reliability of the Turkish version of monitoring by the multiple sclerosis scale

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Health-related quality of life in EU patients with relapsing-remitting multiple sclerosis (RRMS) treated with delayed-release dimethyl fumarate: integrated analysis of DEFINE and CONFIRM
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Thyroid disease in patients with multiple sclerosis during interferon-beta therapy
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Prolactin as a factor of remyelination in a toxic cuprizon-induced model of multiple sclerosis
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PP2130
The effect of smoking on the occurrence and course of multiple sclerosis
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Hashimoto encephalopathy: therapeutic approach and evolution. Eight cases study and review of the literature
A. Riahi, H. Derbali, M. Messelmani, I. Bedoui, M. Mansour, J. Zaouali, R. Mrissa
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Normative data for the Persian version of minimal assessment of cognitive function in multiple sclerosis (MACFIMS): the regression based approach
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Gender differences in the content of glutamate depending on the clinical onset of multiple sclerosis
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PP2135
Large tumor like demyelinating lesions in the brain
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Multiple sclerosis patients treated with intramuscular interferon-beta-1a autoinjector in a real-world setting: prospective evaluation of treatment persistence, adherence, quality of life and satisfaction
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Third degree atrioventricular block: case report of a life-threatening complication in a multiple sclerosis patient treated with fingolimod
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microRNAs play a critical role in regulation of an autoimmune demyelination
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U. Skrobas, A. Wojewoda-Właź, A. Antonowicz, K. Rejdak, H. Bartosik-Psujek
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The impact of interferon beta treatment on pregnancy in patients suffering from multiple sclerosis
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Adhesion molecules and matrix metalloproteinase-9 in patients with multiple sclerosis
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Evaluation of sensory and pain perception and mechanisms of central modulation of pain perception in patients with multiple sclerosis
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Neuromyelitis optica spectrum disorder (NMOSD) with systemic lupus erythematosus (SLE) in a 47-year-old Filipino: a case report
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Anxiety correlates with fatigue in multiple sclerosis patients
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A patient with combined central and peripheral demyelination
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Effect of natalizumab on clinical/radiological disease activity and quality of life in a prospective Belgian cohort of relapsing-remitting multiple sclerosis patients
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Comorbidity of multiple sclerosis and psoriasis
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Thrombotic microangiopathy (TMA) caused by IFN-beta treatment in a multiple sclerosis (MS) patient: a case report
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Severe rebound of multiple sclerosis activity to the spinal cord after fingolimod withdrawal
D. Vecchio, P. Naldi, S. Ruggerone, M.A. Leone, R. Cantello
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PP2155
Delayed-release dimethyl fumarate and health-related quality of life in relapsing-remitting MS patients stratified by baseline demographic and disease characteristics: integrated analysis of DEFINE and CONFIRM
P. Vermersch1, R. Gold2, R.J. Fox3, L. Kappos4, S.P. Sarda5, T. Niecko6, N.C. Kurukulasuriya7
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Epidemiology of multiple sclerosis in Tuzla-Canton, Bosnia and Herzegovina
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Assessment of COgnitioN, Fatigue, Depression, anxiety, AdherENCE in relapsing-remitting multiple sclerosis patients receiving subcutaneous interferon beta-1a: CONFIDENCE study design
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A case confusing multiple sclerosis and central nervous system graft-versus-host-disease
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Effect of bismuth subsalicylate (Pepto-Bismol®) on gastrointestinal tolerability in healthy volunteers receiving oral delayed-release dimethyl fumarate: a randomized, multicenter, double-blind, placebo-controlled, phase 1 study (PREVENT)
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Gastrointestinal tolerability of delayed-release dimethyl fumarate in a multicenter, open-label study of patients with relapsing forms of multiple sclerosis (MANAGE)
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