

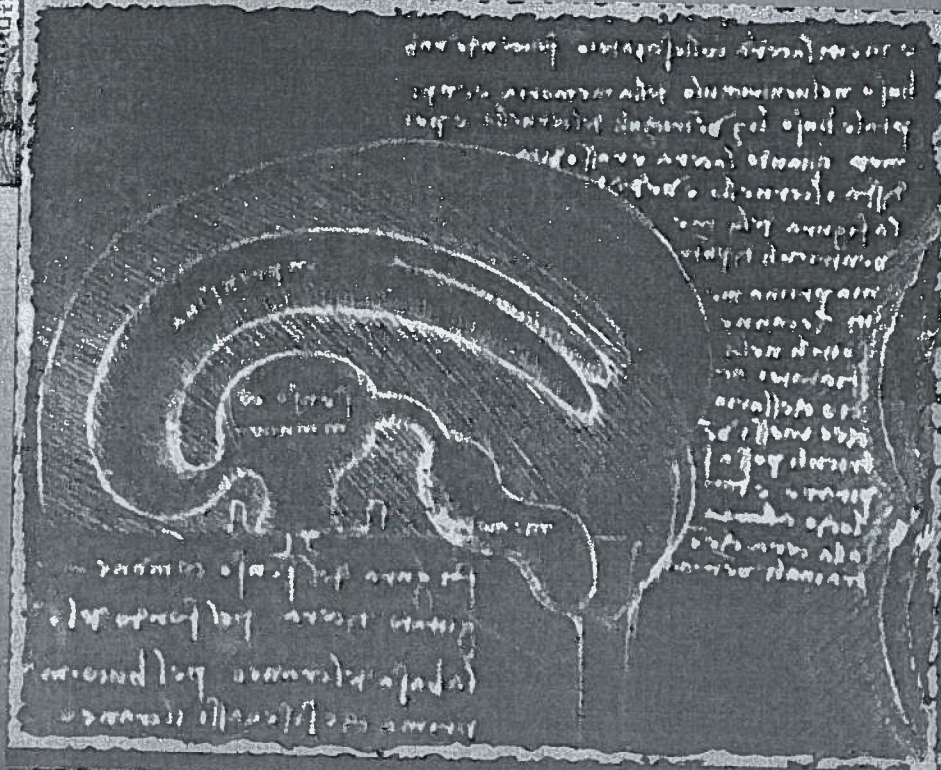
Neurological Sciences

SUPPLEMENT



Founded by
Renato Boeri

Official Journal
of the Italian
Neurological
Society



Guest Editors

R. Mutani
L. Pinessi
F. Monaco

A. Federico
G. Micieli
A. Berardelli
G. Tedeschi

C. Caltagirone
L. Provinciali
R. Sterzi



XLII Congress
of the Italian
Neurological Society

ABSTRACTS



Springer

in finding non-responders to treatment.

Patients and method: 119 MS patients treated with Tysabri have been followed-up during treatment every 6 months with brain MRI that has been performed in the same Centre using a predefined protocol including transverse and coronal FLAIR and post-gadolinium T1 scans. MRI were analysed for the presence of disease activity defined as the presence of new T2 and/or Gd-enhanced lesions. MRI FLAIR scans were also analysed for the presence of atypical new lesions possibly suggesting pre-symptomatic PML.

Results: Mean treatment follow-up was 19.21 months (range 6-42 months); 29 out of 119 patients showed baseline brain MRI without disease activity. 8 patients showed brain MRI activity at 6 months, 1 patient at 12 months; no other patient showed brain MRI activity till the end of follow-up. 4 out of 8 patients with disease activity at month 6 interrupted therapy for the presence of Nab, disease activity or allergic reaction. The other 4 patients have prosecuted the treatment because of clinical efficacy. The only patient with MRI evidence of activity at month 12 prosecuted therapy but has been lost at follow-up for moving to other Centre. 1 patient developed PML after 19 months: the brain MRI performed routinely at month 18 showed a very small new T2+ lesion in the right caudate nucleus that was identify only at a re-evaluation of the case.

Discussion & Conclusion: Every 6 months brain MRI is not useful in the follow-up of Tysabri treated patients after the first year of therapy in the daily practice.

Reference:

- Gorelik L, Lerner M, Bixler S, Crossman M, Schlain B, Simon K, Pace A, Cheung A, Chen LL, Berman M, Zein F, Wilson E, Yednock T, Sandrock A, Goelz SE, Subramanyam M. Anti-JC virus antibodies: implications for PML risk stratification. *Ann Neurol.* (2010);68(3):295-303

REAPPRAISAL OF THE PREVALENCE OF MULTIPLE SCLEROSIS IN THE DISTRICT OF L'AQUILA

A. Casalena, M. Rossi, A. Carolei, R. Totaro

Department of Neurology, University of L'Aquila (L'Aquila)

Objective: To reappraise (1) the prevalence of multiple sclerosis (MS) after 15 years in the district of L'Aquila in order to establish the current burden of the disease and to plan health care services.

Materials and Methods: Cases were identified from multiple sources (Neurology departments, local sections of the Italian Association for Multiple Sclerosis, National Health Service, general practitioners, physiotherapists, social services, cross-boundary out and inpatient medical and rehabilitation units). Possible and definite cases of MS, diagnosed according to McDonald criteria were recorded on the European Data Base for Multiple Sclerosis (EDMUS). The prevalence rate was calculated using the Italian population of the 2001 census as reference.

Results: On the prevalence day of 31 December 2010, 377 patients (285 women and 92 men) suffering from definite (n=235) or possible (n=142) MS were resident in the district of L'Aquila. Mean age was 43.9 ± 12.7 years (range 16-78), 43.7 ± 12.9 years in women and 44.9 ± 11.9 years in men ($P=0.8$). The overall crude prevalence rate was 126.8/100.000 (95% CI 114.0-139.6), 186.1/100.000 (95% CI 164.5-207.7) in women and 63.8/100.000 (95% CI 50.8-76.8) in men. Prevalence rate standardized for age and sex to the 2001 Italian population was 128.2/100.000.

Discussion: Recent epidemiological studies showed an increased prevalence of MS in Europe and in Italy. Those results might be ascribed to a real increase of the disease, as reported for other autoimmune diseases, but also to a better case ascertainment. In our district, the prevalence rate increased from 53.0/100.000 in 1996 (1) to 126.8/100.000 in the present study.

Conclusions: Our data support the recent view of the increase of the disease with high prevalence of MS in Italy, indicating the necessity to allocate more adequate resources for the global management of the disease.

Reference:

- Totaro R. et al Prevalence of multiple sclerosis in the L'Aquila district, Central Italy. *J Neurol Neurosurg Psychiatry* (2000);68:349-352.

CHANGES IN NEUROACTIVE STEROIDS IN EXPERIMENTAL AUTOIMMUNE ENCEPHALOMYELITIS MODEL

G. Cavaletti¹, S. Giatti², D. Caruso³, B. Viviani⁴, F. Abbiati⁵, E. Ballarini¹, M. Boraso³, D. Calabrese², M. Pesaresi², R. Rigolio¹, M. Santos-Galindo⁶, L. Garcia Segura⁶, M. Cogo¹, R. Melcangi²

¹Dept. of Neurosciences and Biomedical Technologies, University of Milan Bicocca (Monza); ²Dept. of Endocrinology, Pathophysiology and Applied Biology, Center of Excellence on Neurodegenerative Diseases, University of Milan (Milano); ³Dept. of Pharmacological Sciences, University of Milan (Milano); ⁴Dept. of Sciences, University of Milan (Milano); ⁵Dept. of Pharmacological Sciences, University of Milan (Milano); ⁶Instituto Cajal, C.S.I.C (Madrid - E)

Aim of the study: Different experimental autoimmune encephalomyelitis models (EAE) have been so far developed. However, due to the different experimental conditions applied (e.g., antigen utilized for immunization, species and the genetic background of the animals) consistent comparative observations considering different pathological targets are still scarce. In this study we investigated the changes in neuroactive steroid levels in acute and chronic EAE.

Methods: To this aim, using as experimental model EAE induced in Dark Agouti rats with syngenic whole spinal cord homogenate suspended in incomplete Freund adjuvant, we have analyzed neuroactive steroid levels, microglial cells, infiltration of inflammatory cells, myelin basic protein mRNA expression and Na⁺,K⁺-ATPase pump activity in the spinal cord.

Results: Data obtained in the acute phase of the disease (i.e., at 14 days post immunization) confirmed that neurological signs were accompanied by the presence of perivascular infiltrating T cells (CD3+ cells) and microglial cells (ED1+ and MHC-II+) in the spinal cord. In the same tissue, these features were associated to decreased mRNA levels of the 18.5 and 21.5 kDa isoforms of myelin basic protein and to a general decrease of neuroactive steroids analyzed, with the exception of an increase of tetrahydroprogesterone and 17beta-estradiol. Chronic phase of the disease (i.e., 45 days post immunization) still showed in the spinal cord a significant increase of MHC-II+ cells, even if lower to what observed in acute phase, and this was associated to a decrease of Na⁺,K⁺-ATPase enzymatic activity. Changes in the levels of neuroactive steroids were maintained or reverted, like in the case of tetrahydroprogesterone and 17beta-estradiol, during the chronic phase of EAE.

Conclusion: The present results suggest that, depending of phase of disease considered, changes in local neuroimmune response are associated to changes in the neurosteroidogenic machinery, thus opening up the way to further investigation on their role and to possible interventional strategies.

ASSESSMENT OF CCSVI BY ECOCOLOR DOPPLER: A PILOT STUDY IN MULTIPLE SCLEROSIS PATIENTS AND CONTROLS FROM NORTHERN ITALY

P. Cavalla¹, M. Vercellino¹, M. Matta¹, A. Romagnolo¹, A. Mattioda¹, S. Masera¹, F. Dematteis¹, G. Superti¹, L. Di Maggio², D. Rossato², G. Gandini², L. Lopiano¹, L. Pinassi¹

¹Dipartimento di Neuroscienze, Azienda Ospedaliero-Universitaria