

OR6

Prognostic Factors Stratification in Multiple Sclerosis

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Background: Ethnicity was identified as a risk factor for Multiple sclerosis (MS) severity. In fact, studies suggested that North-Africans have a more severe disease course than Caucasians. The aim of our study was to identify MS prognostic factors that might predict disability accumulation in a cohort of Tunisian patients with MS.

Method(s): We conducted a retrospective study in the department of Neurology of Razi Hospital. We included patients with relapsing MS followed between 2002 and 2018 with at least three years of follow up and a baseline brain and spine MRI performed during the first year from the disease onset. Cerebro-spinal fluid (CSF) analysis was done if clinically required. Expanded Disability Status Scale (EDSS) was used to quantify disability progression. The statistical tests were performed at the 0.05 level of significance using the Statistical Package for the Social Sciences software version 23.0 (SPSS). We evaluated the influence of prognostic factors on the risk for disability accumulation based on univariate and multivariate Cox regression models.

Result(s): We included 104 patients (sex-ratio F/M =3.16). Mean age was 37.6 and mean age at onset was 28.4 years. Females exhibited a similar risk of disability accumulation compared to males. Each younger decade at onset was associated with a protective effect on disability. Motor impairment and bladder dysfunctions were not only associated with a higher EDSS score after three years evolution but also with conversion to a secondary progressive MS. Presence of oligoclonal bands was only associated with an incomplete recovery from the first relapse. A number of T2 lesions more than nine at baseline MRI was associated with an EDSS score ≥ 3 after three years of MS evolution independently from other factors.

Age at onset was a low-impact prognostic factor. The presence of oligoclonal bands was a medium impact prognostic factor. Motor and bladder impairment and number of lesions at baseline brain MRI were high-impact prognostic factors.

Conclusion: Demographic, biological and imaging characteristics were associated to prognosis in MS among Tunisian patients. Motor and bladder relapses and number of lesions on baseline MRI are of high-impact prognostic factors.