

We included 102 CIS patients, 70 women (68.62%), with a mean age at onset of 32 years. After a mean follow-up of 39 months, 58 (56.86%) patients were diagnosed as having MS according to the McDonald 2010 criteria. The overall conversion rate to CDMS was 39.21%. In 24 patients (23.52%) baseline MRI simultaneously showed asymptomatic enhancing and non-enhancing lesions, whereas in 33 patients (32.35%) simultaneously detected enhancing (symptomatic or not) and non-enhancing lesions. The alternative DIT criterion proposed, based on a single MRI scan, was more sensitive (53.44% v 39.65%) maintaining a high specificity (95.45% v 97.72%). Both DIT criteria identified a subset of patients with CIS who were at high early risk of developing CDMS (hazard ratio: 3.34 and 4.46, $p < 0.001$; respectively).

The proposed alternative DIT criterion, based on a single scan, is more sensitive than the original one with a slight decrease in specificity. This modified criterion should be evaluated in other CIS cohorts.

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Understanding the characteristics of secondary progressive multiple sclerosis to facilitate early identification

D. Simsek¹, E. Verdun Di Cantogno¹, R. Lahoz¹, J. Pike²,

E. Jones²

¹Novartis Pharma AG, Basel, Switzerland, ²Adelphi Real World, Macclesfield, United Kingdom

Background: The transition from relapsing-remitting multiple sclerosis (RRMS) to secondary progressive multiple sclerosis (SPMS) can be difficult to define.

Objective: To assess the difference between early RRMS and early SPMS patients on sociodemographics, daily activities and clinical characteristics including symptoms and MRI parameters and quantify the likelihood of late stage RRMS patients being classified as early SPMS.

Methods: Data were drawn from the Adelphi Multiple Sclerosis Disease Specific Program, a cross-sectional study of 250 neurologists and 3294 patients in the US. Patients with at least 4 years with MS diagnosis and EDSS ≥ 3 were analysed; 188 were defined as late RRMS (physician designation of RRMS, EDSS between 3 and 6) and 67 as early SPMS (physician designation of SPMS less than 3 years). Additionally, 1010 early RRMS patients (physician designation of RRMS, EDSS < 3 , EDSS also scored one year previously) were analysed. Lasso penalised logistic regression was used to determine variables associated with being early RRMS or early SPMS. Covariates included in the regression were age, unemployment, requirement for assistance in daily living, number of T2 lesions, and the presence of motor, paraesthesia/sensory, ataxia/coordination, micturition/bladder, mood/depression, and concentration/cognition symptoms. Bootstrap-based 95% confidence intervals were produced. Regression coefficients were used

to generate the predicted probability of being early SPMS for the late RRMS patients. This analysis is part of developing a screening tool that can help physicians to identify SPMS early.

Results: Positive non-zero coefficients (indicating higher likelihood of being early SPMS) were obtained for age (0.04, CI [0.01, 0.07]), unemployment (0.86, [0.17, 1.72]), requirement for assistance in daily living (2.34, [1.71, 3.21]), number of T2 lesions (0.06, [0.03, 0.10]), and the presence of motor (1.18, [0.46, 2.20]), paraesthesia/sensory (0.10, [-0.19, 0.79]), ataxia/coordination (0.95, [0.34, 1.63]), and micturition/bladder (0.68, [0.02, 1.34]) symptoms. Predicted probabilities for the late RRMS population indicated that 58% would be classified as early SPMS.

Conclusion: These analyses highlight significant differences between RRMS and SPMS populations. The variables that proved significant could be useful parameters for physicians to consider when assessing the transition from RRMS to SPMS. The results indicate potential misclassification of late RRMS patients.

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Eddie Jones is a paid employee of Adelphi Real World, Macclesfield, United Kingdom.

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Corpus callosum lesions in patients with a clinical isolated syndrome

N.A. Cerdá-Fuertes, M. Díaz-Sánchez, M. Prieto-León,

L. Lebrato-Hernández, A.J. Uclés-Sánchez, J.L. Casado-Chocán
Neurology, University Hospital Virgen del Rocío, Sevilla, Spain

Corpus callosum (CC) lesions are frequently detected in patients with multiple sclerosis (MS), but are rare in healthy aging and cerebrovascular patients. However they are not included as an isolated typical location in the McDonald 2010 diagnostic criteria for dissemination in space (DIS), but rather as a part of periventricular lesions. We aim to analyze the diagnostic precision of the appearance of CC lesions in patients with a clinically isolated syndrome (CIS) in diagnosing MS according to the McDonald 2010 criteria and in predicting conversion to clinically definite MS (CDMS).

Inclusion criteria:

- 1) CIS suggestive of central nervous system demyelination (since 2008);
- 2) clinical assessment and baseline brain magnetic resonance imaging (MRI) within 3 months of CIS onset;
- 3) clinical follow-up of at least 12 months.

We included 77 patients, 55 women (71.43%), with a mean age at onset of 34 years. After a mean follow-up of 36 months, 44 patients (57.14%) were diagnosed as having MS according to McDonald 2010 criteria and the overall conversion rate to CDMS was 38.96%.