USEFULNESS IN CLINICAL PRACTICE OF 1-YEAR MAGNIMS SCORING SYSTEM TO PREDICT RESPONSE TO GLATIRAMER ACETATE

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Introduction and purpose

The MAGNIMS score is a new scoring system able to predict disability progression in relapsing remitting multiple sclerosis (RRMS) patients according to their disease activity during the first year of treatment with interferon-beta (IFN-β). This scoring system has not yet validated in patients treated with glatiramer acetate (GA). The objective of our study was to evaluate the use of MAGNIMS score on an Italian cohort of RRMS patients treated with GA in daily clinical practice.

Methods

This is an observational, single-centre, 4-year study carried out on RRMS patients who started GA treatment at our center between January 2000 and December 2011.

The MAGNIMS score was obtained by a combination of relapse and new T2-weighted lesions at brain MRI scan after 1-year of therapy (Sormani et al, Neurology 2016).

MAGNIMS SCORE

Score 0: 0 relapses and < 3 new T2 lesions

Score 1: 0 relapses and ≥ 3 new T2 lesions
Or
1 relapses and < 3 new T2 lesions

Score 2: 1 relapses and ≥ 3 new T2 lesions
Or
≥ 2 relapses

Hazard ratios (HR) were used to evaluate the ability of scores to predict the suboptimal response and disability worsening.

SUBOPTIMAL RESPONDER: defined by the presence of at least 1 positive parameter among new relapse, any MRI active lesion or EDSS progression.

TREATMENT FAILURE: was based on 2 events: - EDSS progression 1.5 points for patients with EDSS at 1 year = 0,
1 point for EDSS of 1.0–5.0 and
0.5 for EDSS ≥5.5 sustained over at least 6 months and confirmed at the end of follow-up;
- switching to other therapy for lack of efficacy in the subsequent 3 years.

Results

We have considered 253 patients; 10 patients with no adherence to therapy were excluded and then 243 patients have been evaluated.

Of the total of 243 patients, 181 (74.5%) had score 0, 42 (17.3%) had score 1, 20 (8.2%) had score 2.

The table 1 show clinical characteristics of included patients.

Table 1

	PATIENTS (n: 243)
Sex (female/male)	70.8% / 29.2%
Age at disease onset (mean ± SD, years)	30.3 years (± 8.7)
Age at IMT onset (mean ± SD, years)	35.4 years (± 9.6)
Disease duration (mean ± SD, years)	61.8 months (± 69.8)
Baseline EDSS (mean ± SD)	1.7 (± 0.7)
Relapse 1 year pre-therapy	1.1 (±0.8)

During the following 3 years, 77 patients (32%) had a treatment failure. An association was found between score changes and the probability of treatment failure at 3 years (table 2 and figure 1).

Table 2

Score	Treatment failure	HR	P-value
0	27%	1.0	
1	44%	1.7 (0.96-2.92)	0.065
2	55%	2.4 (1.23-4.57)	0.010

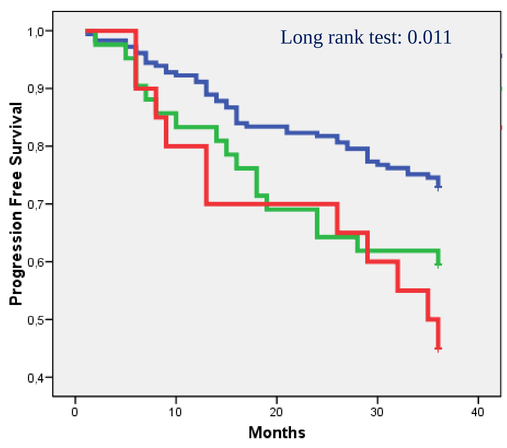

Figure 1
Blu line: score 0
Green line: score 1
Red line. Score 2

During the following 3 years, 141 patients (58%) were suboptimal responders. A low association was found between score changes and the probability of suboptimal response at 3 years (table 3 and figure 2).

Table 3

Score	Treatment failure	HR	P-value
0	53%	1.0	
1	74%	1.9 (1.3-2.9)	0.002
2	70%	1.6 (0.89-2.75)	ns

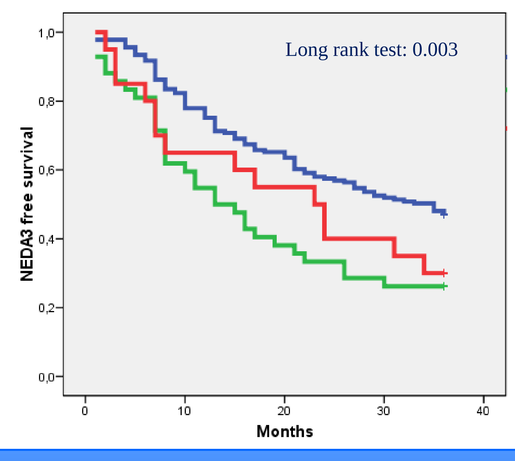

Figure 2
Blu line: score 0
Green line: score 1
Red line. Score 2

Conclusions

Our study confirms the usefulness of 1-year MAGNIMS scoring system to evaluate treatment failure in the following 3 years also in patients treated with GA.

References

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