Introduction

Magnetic resonance imaging (MRI) is an important component of diagnosing multiple sclerosis (MS),1,2 as well as assessing the course of disease and efficacy of treatment.3 The ability to predict disease course in untreated patients, or future clinical response to treatment in those receiving disease-modifying drugs, would offer considerable benefit to clinicians.

- Multiple studies have examined the predictive value of early MRI lesions on future relapses and disease progression in patients with relapsing MS (RRMS).4–6

- A systematic review and meta-analysis approach concluded that the predictive value of early MRI for future clinical outcomes in patients with RRMS occurs within the first 3.3 years of disease duration.7

- Disability progression was defined as an increase of disability (as measured by the Expanded Disability Status Scale [EDSS]).8

Methods

- The ARR over 4 years among patients in the IFNβ-1a 44 µg SC tiw group was significantly less than that in the placebo/delayed treatment group (0.44 versus 0.58 annually; p=0.043) (Figure 1A).

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- In the placebo/delayed treatment group, there was a trend, although not significant, for a higher ARR for those with any active T2 lesions and 4 active T2 lesions at 6 months versus those without (0.49 vs 0.30, respectively; p=0.057) (Figure 2A).

- In the placebo/delayed treatment group, the presence of any active T2 lesions at 6 months was associated with a significantly higher percentage of patients who relapsed over 1, 2, and 3 years versus patients with 0 active T2 lesions (Figure 2B).

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Objectives

- The ARR over 4 years among patients in the IFNβ-1a 44 µg SC tiw group was significantly less than that in the placebo/delayed treatment group (0.44 versus 0.58 annually; p=0.043) (Figure 1A).

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Conclusions

- Compared with patients in the placebo/delayed treatment group, lower patients receiving IFNβ-1a 44 µg SC had lower active T2 lesion counts at baseline, and notably lower at all 4 years.8

- Greater T2 lesion activity was not associated with increased clinical results in patients receiving IFNβ-1a 44 µg SC, but was associated with poorer outcomes in those receiving placebo/delayed treatment.9

- This contrasts with previous results that suggested a greater relevance of early T2 lesions in patients receiving any IFN therapy to future clinical effects than in patients receiving placebo, and of a greater predictive value for increasing numbers of T2 lesions in patients receiving IFNβ-1a 44 µg SC.10

- The observation that in other research early T2 lesions were associated with subsequent clinical decline (including any IFN therapy), but not in these results among patients receiving only IFNβ-1a 44 µg SC, negates possible relevance of the dose of IFNβ-1a to the predictive value of early T2 lesion counts at 6 months in patients receiving placebo.10

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Comparison of placebo, lower patients receiving IFNβ-1a 44 µg SC had lower active T2 lesion counts at baseline, and notably lower at all 4 years.8

Those receiving IFNβ-1a 44 µg SC tiw had active T2 lesions 4 versus the 0–1 lesion group; ‡p<0.05 vs placebo/delayed treatment group.

References


Disclosures

A business of Merck KGaA, Darmstadt, Germany. The authors have nothing to disclose.