(S77) EARLY MAGNETIC RESONANCE IMAGING ACTIVITY ON INTRAMUSCULAR INTERFERON BETA-1A PREDICTS DISEASE ACTIVITY AT TEN YEARS

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Background: Analyses from the CHAMPIONS open-label extension study of CHAMPS showed that new T2 or gadolinium-enhancing (Gd+) lesions on magnetic resonance imaging (MRI) scan 6 months after starting treatment with intramuscular (IM) interferon beta-1a (IFNβ-1a) predicts disease activity, Expanded Disability Status Scale (EDSS) status, and conversion to clinically definite multiple sclerosis (CDMS) at 5 years. Objectives: To determine whether MRI activity 6 months after initiating IM IFNβ-1a predicts disease activity at 10 years. Methods: CHAMPS was a randomized, double-blind, placebo-controlled, phase 3 study in which patients with a first demyelinating event and cranial MRI evidence of subclinical demyelination were treated with either IM IFNβ-1a 30 μg (n = 193) or placebo (n = 190) once weekly for up to 36 months. All patients who did not experience a relapse consistent with CDMS underwent MRI scans 6, 12, and 18 months after randomization. Forty percent of patients from CHAMPS (155/383) enrolled in the CHAMPIONS 10 follow-up extension study. Results: Of the 73 patients who received immediate treatment with IM IFNβ-1a, underwent an MRI scan 6 months after initiating treatment, and enrolled in CHAMPIONS 10, 30.1% had lesion activity (≥2 new T2 or ≥2 Gd+ lesions) suggesting a suboptimal response to treatment. In these patients, the risk of developing CDMS by year 10 was significantly higher compared with patients with <2 new T2 and <2 Gd+ lesions at month 6 (hazard ratio, 3.83; 95% confidence interval, 2.32-6.33; P < .0001). Trends were observed at 10 years for a difference in EDSS scores in patients with <2 new T2 and <2 Gd+ lesions at 6 months and those with ≥2 new T2 or ≥2 Gd+ lesions (mean EDSS, 1.6 ± 1.36 vs. 2.3 ± 2.02; P = .2740). Patients with <2 new T2 and <2 Gd+ lesions were more likely to have an EDSS score ≤2.0 than those with ≥2 new T2 or ≥2 Gd+ lesions (80.4% vs. 59.1%, P = .1068). Patients with ≥2 new T2 or ≥2 Gd+ lesions were also less likely to have stable disease compared with patients with <2 new T2 and <2 Gd+ lesions (50.0% vs. 74.5%, P = .4423). Conclusions: MRI lesion activity 6 months after initiating treatment with IM IFNβ-1a is a predictor of disease activity and conversion to CDMS at 5 years, and this trend continued at 10 years.

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