

# Predictive Factors of Response to Anti-CGRP Monoclonal Antibodies in Patients with Multiple Sclerosis

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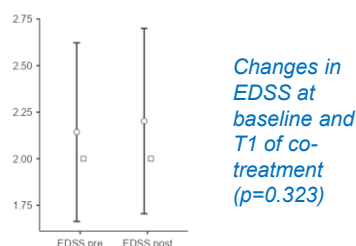
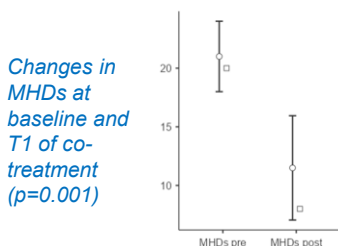
**Aim:** The study investigated the predictive factors of response to calcitonin gene-related peptide (CGRP)-targeted therapies in patients with migraine and multiple sclerosis (MS).

**Methods:** This retrospective, multicenter study (17 Italian MS centers) included patients with MS treated with anti-CGRP monoclonal antibodies (mAbs) or gepants, combined with disease-modifying treatments (DMTs), on a stable DMT regimen for at least three months before the anti-CGRP targeted therapy initiation and a minimum follow-up period of three months for the concomitant treatment. Collected MS data included age at onset, prior and current DMT, EDSS score, MRI activity, and clinical relapses. Collected migraine data included monthly headache days (MHDs) before and at last follow-up (T1), disease duration, age at onset, type, and duration of anti-CGRP mAb treatment. A multivariate linear regression model was then used to examine the associations between predictor variables and treatment response (MHD delta from baseline to last follow-up).

**Results:** Of the 47 patients included (mean age±SD 42.86±9.68 years, 87% females), 87% had relapsing MS, and 13% had progressive MS. Mean MS age onset was 28.33±9.11 years, while mean migraine age onset was 19.04±8.12 years. The mean interval between DMT initiation and anti-CGRP therapy was 53.33±40.81 months.



At baseline, the mean MHDs was 20.5±7.05 and decreased to 11.5±12.01 at T1 ( $p=0.001$ ). The EDSS did not change from baseline to T1 ( $p=0.323$ ).



Baseline MHD positively predicted treatment response ( $\beta = +0.894$ ,  $p < 0.01$ ), indicating that patients with a higher initial migraine burden experienced a greater reduction in MHDs. Conversely, longer MS duration was linked to reduced benefit ( $\beta = -0.749$ ,  $p = 0.02$ ).

**Conclusion:** We confirm the safety of combined DMT and CGRP treatments in patients with both conditions. Timely and tailored therapy should be planned early in the disease course to achieve the best outcomes and improve patients' quality of life.

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