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Effect of erenumab on monthly migraine days and monthly migraine attacks in patients with episodic migraine

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Question:Erenumab (in the US, erenumab-aooe) is a fully human monoclonal antibody against the canonical calcitonin gene-related peptide (CGRP) receptor that has demonstrated efficacy in monthly migraine day (MMD) reduction for both episodic (EM) and chronic migraine. The decrease of MMD observed in current randomised, controlled trials (RCTs) of EM with CGRP related antibodies could theoretically be due to a decrease in monthly migraine attacks (MMAs) and/or to a shortening of the duration of the migraine attacks. The objective of this analysis was to evaluate the effect of erenumab on the MMA frequency in patients with EM.**Methods**:We conducted an analysis of data from STRIVE (ClinicalTrials.gov NCT02456740), a randomised, double-blind, placebo-controlled, Phase 3 study of erenumab in patients with EM (N=955). Outcome measures assessed were the change from baseline to the last 3 months (Months 4, 5, and 6) for MMD and MMA and the proportion of subjects who achieved ≥50% reduction in mean MMDs and MMA from baseline. Using the efficacy analysis set, analyses were conducted which were either pre-specified exploratory or post-hoc (≥50% reduction in mean MMA from baseline).**Results**:Mean MMD at baseline was 8.3 days and decreased by [least square mean (LSM),%]; 1.8 (22%), 3.2 (39%) and 3.7 (44%) days, respectively, with placebo, erenumab 70 mg and 140 mg. Mean MMA for placebo and erenumab 70 mg/ 140 mg was 5.1 and 5.2, respectively, at baseline. MMA [LSM (%)] decreased by 1.3 (26%), 2.0 (40%) and 2.2 (43%) with placebo, erenumab 70 mg and 140 mg, respectively. The proportion of patients achieving a ≥50% reduction from baseline of MMD and MMA were similar (Table).**Conclusion**:The current analysis of a large RCT with erenumab suggests that the MMD and MMA decrease in parallel. These results strongly support the preventive effect of erenumab as shown by the decrease in both MMD and MMA. The results cannot, however, be extrapolated to other CGRP monoclonal antibodies, or oral gepants for migraine prophylaxis.

Figure 1

Table: Proportion of patients achieving a ≥50% reduction from baseline of MMD and MMA

	Placebo (N=316)	Erenumab 70 mg (N=312)	Erenumab 140 mg (N=318)
≥50% reduction from baseline in MMD %(n/N)	27% (84/316)	43.3% (135/312)	50% (159/318)
Difference vs placebo (95% CI)		17% (9% to 24%)	23% (16% to 31%)
≥50% reduction from baseline in MMA %(n/N)	23.4% (74/316)	37.8% (118/312)	44.3% (141/318)
Difference vs placebo (95% CI)		14% (7% to 22%)	21% (14% to 28%)

P<0.001 for all pairwise comparisons between each erenumab dose and placebo

CI, confidence interval; MMA, monthly migraine attacks; MMD, monthly migraine days