Migraine is a neurologic disease that affects approximately 37 million people in the United States and comprises several subtypes, including common migraine, complicated migraine, retinal migraine, chronic migraine, and cluster headaches. Most often diagnosed in women aged 18 to 50 years, migraine has been misunderstood as a less-than-legitimate medical disease. However, headache disorders are associated with personal and societal burdens, including pain, disability, poor quality of life, and financial burden. A 2007 study showed that more than 50% of people with frequent migraines require bed rest during their headaches or describe severe impairment of function.

For patients whose migraine frequency or severity affects daily activities, nonpharmacologic strategies and migraine-preventive medications can be considered. However, studies using US claims databases show that 80% to 83% of patients with chronic migraine discontinue oral migraine-preventive medications within 1 year, including antidepressant drugs (ie, amitriptyline), beta-blockers (ie, propranolol), or anticonvulsants (ie, topiramate). In addition, the US Food and Drug Administration (FDA) approved the use of onabotulinumtoxinA (Botox) for headache prophylaxis in adults with chronic migraine who have headaches 15 days or more monthly, each lasting 4 hours or more. Despite the availability of several prevention medications, the unmet needs for people with chronic migraine remain high.

Aimovig Approved for Migraine Prevention

On May 17, 2018, the FDA approved erenumab-aooe (Aimovig; Amgen), an injectable drug that blocks the calcitonin gene–related peptide (CGRP) receptor, for the prevention of migraine in adults. The efficacy of erenumab-aooe as a preventive treatment of episodic or chronic migraine was assessed in 3 randomized, double-blind, placebo-controlled studies: 2 studies in patients with episodic migraine, defined as 4 to 14 migraine days monthly (ie, STRIVE and ARISE), and one study in patients with chronic migraine, defined as ≥15 headache days monthly, with 8 migraine days or more monthly (Study 3). These studies enrolled patients with a history of migraine, with or without aura, according to the diagnostic criteria of the International Classification of Headache Disorders, 3rd edition. In the placebo-controlled clinical trials of 2184 patients, 787 patients received at least 1 dose of erenumab-aooe 70 mg once monthly, and 507 patients received at least 1 dose of erenumab-aooe 140 mg once monthly during 3 months or 6 months of the double-blind treatment. The majority of patients who received erenumab-aooe were female (84%) and white (91%). At study entry, patients’ average age was 42 years. The STIRVE Clinical Trial

STRIVE was a randomized, multicenter, 6-month, placebo-controlled, double-blind clinical trial of erenumab-aooe for the preventive treatment of episodic migraine. Overall, 955 patients with a history of episodic
migraine were randomized to erenumab-aooe 70 mg (N = 317), erenumab-aooe 140 mg (N = 319), or to placebo (N = 319) using subcutaneous injection once monthly for 6 months. Patients were allowed to use acute headache treatments, including migraine-specific medications (ie, triptans, ergotamine derivatives) and nonsteroidal anti-inflammatory drugs during the study. 

The primary efficacy end point was the change from baseline in the mean monthly migraine days during months 4 to 6. The secondary end points included achievement of a ≥50% reduction from baseline in the mean monthly migraine days during months 4 to 6 (≥50% responders), change from baseline in the mean monthly acute migraine–specific medication days during months 4 to 6, and change from baseline in the mean Migraine Physical Function Impact Diary (MPFID) score during months 4 to 6 (increases in scores indicate worsening). Overall, 858 (90%) patients completed the 6-month double-blind study. At baseline, patients’ mean migraine frequency was approximately 8 migraine days monthly. In this study, both doses of erenumab-aooe demonstrated significant improvements in the key efficacy end points compared with placebo (Table). Patients who received both doses of erenumab-aooe showed greater reductions from baseline in the mean monthly MPFID everyday activity scores averaged during months 4 to 6 (P < .001 for both cohorts).

| Table The STRIVE Study: Efficacy of Erenumab-aooe in Patients with Episodic Migraine |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Efficacy parameter                | Erenumab-aooe 70 mg, mo (N = 312) | Erenumab-aooe 140 mg, mo (N = 318) | Placebo, mo (N = 316) |
| Monthly migraine days             | Change from baseline -3.2 -3.7 -1.8 | Difference from placebo -1.4 -1.8 | P value <.001 <.001 <.001 |
|                                   | ≥50% monthly migraine days responders | Responders, % 43 50 27 | Differences from placebo, % 17 23 | Odds ratio vs placebo 2.1 2.8 | Odds ratio vs placebo 2.1 2.8 |
| Monthly acute migraine–specific medication days | Change from baseline -1.1 -1.6 -0.2 | Difference from placebo -0.9 -1.4 | P value <.001 <.001 <.001 |


Study 3
Study 3 was a phase 2, randomized, double-blind, placebo-controlled study that compared erenumab-aooe with placebo in 667 patients with a history of chronic migraine with or without aura. During the course of 3 months, patients who received 70 mg or 140 mg of erenumab-aooe had fewer monthly migraine days compared with patients who received placebo. Both doses of erenumab-aooe resulted in a difference of −2.5 days (95 % confidence interval, −3.5 to −1.4; P < .0001).

Adverse Events
In the 3 key clinical trials, the most common (incidence of ≥3 % and more frequent than with placebo) adverse reactions associated with erenumab-aooe therapy were injection-site reactions (6% and 5% in patients who received erenumab-aooe 70 mg and 140 mg, respectively) and constipation (1% and 3% in patients who received erenumab-aooe 70 mg and 140 mg, respectively). Erenumab-aooe has no contraindications.

Use in Specific Populations
There are no adequate data regarding the risk to the fetus associated with erenumab-aooe use in pregnant women, the presence of erenumab-aooe in human milk, the effects on breastfed infants, or the effects on milk production.

The safety and effectiveness of erenumab-aooe have not been established in children.

Clinical studies of erenumab-aooe did not include sufficient numbers of patients aged ≥65 years to learn whether older patients respond differently to erenumab-aooe from younger patients.

Warnings and Precautions
The prescribing information for erenumab-aooe has no warnings or precautions.

Conclusion
The approval of erenumab-aooe offers patients a new option in reducing the number of days with migraine, a
painful and debilitating condition. Randomized clinical trials have demonstrated that erenumab-aooe, the first FDA-approved once-monthly self-injectable drug that inhibits the CGRP receptor, which is involved in the pathophysiology of migraine, is more effective than placebo in preventing migraines in adults with episodic or chronic migraine. The safety profile of erenumab is similar to that of placebo.

References