First And Only Randomized, Double-blind, Head-to-head Study Comparing Aimovig® (erenumab-aooe), An Anti-CGRP Pathway Therapy, To Topiramate Published In Cephalalgia

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Aimovig Demonstrated Superiority for Both the Primary and Secondary Endpoint Versus Topiramate
Aimovig had a Significantly Lower Discontinuation Rate Due to Adverse Events Versus Topiramate
More Patients in the Aimovig Treatment Arm Achieved at Least a 50 Percent Reduction in Monthly Migraine Days From Baseline Compared to Those in the Topiramate Treatment Arm

THOUSAND OAKS, Calif., Nov. 8, 2021 /PRNewswire/ -- Amgen (NASDAQ:AMGN) today announced new data from the HER-MES study, the first and only head-to-head study of Aimovig® (erenumab-aooe), a calcitonin gene-related peptide (CGRP) inhibitor, against topiramate for adult patients with episodic and chronic migraine. Topiramate is one of the most commonly prescribed medications in migraine prevention with an estimated 600,000 new-to-brand prescriptions written in the U.S. each year.[1,2] Published in *Cephalalgia,* the results of the study conducted by Novartis showed that patients in the Aimovig treatment arm experienced a significantly lower discontinuation rate due to adverse events and superior efficacy, with a greater proportion of patients achieving at least a 50 percent reduction from baseline in their monthly migraine days (MMDs), compared with topiramate.[3]

"HER-MES is the first study that directly compared the therapeutic effects of an antibody and a small molecule in migraine prevention," said Uwe Reuter, M.D., Ph.D., MBA, trial investigator and managing medical director at Charité Universitätsmedizin in Berlin. "The positive outcomes strengthen the efficacy and safety profile of erenumab as a migraine prevention treatment for patients with migraine."

In this head-to-head Phase IV study, patients in the Aimovig arm demonstrated a significantly lower discontinuation rate due to adverse events versus patients in the topiramate arm (10.6% versus 38.9%). Additionally, significantly more patients in the Aimovig arm achieved at least a 50% reduction from baseline in their MMDs than those in the topiramate group (55.4% versus 31.2%). In the topiramate group, the most frequent adverse events that led to discontinuation of the study medication were paraesthesia, disturbance in attention, fatigue, and nausea. In the Aimovig group, these were fatigue, nausea, disturbance in attention and dizziness. Additional study treatment-related adverse events reported by ≥2% in any trial group included constipation, decreased appetite, taste disorder, vertigo, dysgeusia, weight loss, dry mouth, irritability, mood swings, diarrhea, depression, sleep disorder, depressed mood, hypoesthesia, upper abdominal pain, aphasia, insomnia, memory impairment, dyspepsia, dysesthesia and headache.[3]

"We're extremely encouraged by these new results, which demonstrate lower discontinuation rates due to adverse events and superior efficacy versus topiramate in migraine prevention and strengthen our confidence that Aimovig has significant potential to help many more patients living with migraine," said Rob Lenz, M.D., Ph.D., senior vice president of Global Development at Amgen. "Amgen is dedicated to helping the millions of people who live with this debilitating neurological disease get back to what's important to them while living with more migraine-free days."

Migraine is a highly debilitating disease that has a significant impact on people's lives, including time spent with family and friends, or at work.[4,5] Aimovig is the first FDA-approved migraine preventive treatment that targets the CGRP receptor.[6] It is self-administered once monthly subcutaneously via the SureClick® autoinjector, does not require a loading dose and is easy to use.[6,7]

About HER-MES
HER-MES (NCT03828539) is the first randomized, double-blind, double-dummy, active-controlled, parallel-group Phase IV study to assess tolerability (as assessed by the discontinuation rates due to adverse events) and efficacy of Aimovig versus topiramate in a patient-centered setting.[3] The primary endpoint was treatment discontinuation rate due to adverse events of 70 mg and 140 mg Aimovig monthly compared with 50 to 100 mg topiramate daily during the double-blind treatment phase of the study.[3] The secondary endpoint was efficacy of 70 mg and 140 mg Aimovig monthly versus 50 to 100 mg topiramate daily in terms of at least a 50% reduction in monthly migraine days from baseline in the last three months (months 4, 5 and 6) of the double-blind, 24-week treatment phase.[3] The HER-MES study enrolled 777 adult patients with episodic or chronic migraine (≥4 migraine days per month) who had not previously received migraine prevention treatment or had failed up to three previous therapies with propranolol/metoprolol, amitriptyline and/or flunarizine.[3] After the 2-week screening and 4-week baseline phase, patients received either Aimovig subcutaneously and topiramate placebo orally or topiramate orally and Aimovig placebo subcutaneously. In the double-blind, 24-week treatment phase, patients in the Aimovig arm received either 70 mg or 140 mg directly after the baseline phase, as estimated by the investigator.[3] An increase in dose from 70 mg to 140 mg was possible at any time during the study. Patients in the topiramate arm were given topiramate at the highest tolerated dose (50-100 mg daily), starting with a 6-week titration phase.[3] The study was conducted by Novartis at 82 study sites in Germany between February 2019 and July 2020.

About Aimovig® (erenumab-aooe)
Aimovig is the first FDA-approved migraine preventive treatment that targets the calcitonin gene-related peptide (CGRP) receptor, which is associated with migraine.[6] Aimovig has been studied in several large, global, randomized, double-blind, placebo-controlled studies to assess its efficacy and safety in migraine prevention.[8,9] Aimovig is self-administered once monthly via the easy-to-use SureClick® autoinjector, without a required loading dose.[6,7] More than 3,000 patients participated in registrational trials of Aimovig across four placebo-controlled Phase 2 and Phase 3 clinical studies and their open-label extensions.[8-13]

Aimovig is also being evaluated through CATALYST, a comprehensive evidence generation program initiated by Amgen and Novartis that includes over 7,500 patients across ongoing clinical trials and a robust assessment of real-world evidence. Spanning over 39 countries globally, CATALYST clinical trials will explore the role of Aimovig in comparative studies, assessing impact on novel migraine outcomes, understanding predictive biomarkers and investigating Aimovig's use in additional study populations. To date, more than 500,000 patients in the United States have been prescribed Aimovig for the preventive treatment of migraine in adults.[14]

AIMOVIG INDICATION

Aimovig® (erenumab-aooe) is indicated for the preventive treatment of migraine in adults.

IMPORTANT SAFETY INFORMATION

Contraindication: Aimovig® is contraindicated in patients with serious hypersensitivity to erenumab-aooe or to any of the excipients. Reactions have included anaphylaxis and angioedema.

Hypersensitivity Reactions: Hypersensitivity reactions, including rash, angioedema, and anaphylaxis, have been reported with Aimovig® in postmarketing experience. Most reactions were not serious and occurred within hours of administration, although some occurred more than one week after administration. If a serious or severe reaction occurs, discontinue Aimovig® and initiate appropriate therapy.

Constipation with Serious Complications: Constipation with serious complications has been reported following the use of Aimovig® in the postmarketing setting. There were cases that required hospitalization, including cases where surgery was necessary. The onset of constipation was reported after the first dose in a majority of these cases, but patients also reported later on in treatment. Aimovig® was discontinued in most reported cases. Constipation was one of the most common (up to 3%) adverse reactions reported in clinical studies.

Monitor patients treated with Aimovig® for severe constipation and manage as clinically appropriate. Concurrent use of medications associated with decreased gastrointestinal motility may increase the risk for more severe constipation and the potential for constipation-related complications.

Hypertension: Development of hypertension and worsening of pre-existing hypertension have been reported following the use of Aimovig® in the postmarketing setting. Many of the patients had pre-existing hypertension or risk factors for hypertension. There were cases requiring pharmacological treatment and, in some cases, hospitalization. Hypertension may occur at any time during treatment but was most frequently reported within seven days of dose administration. In the majority of the cases, the onset or worsening of hypertension was reported after the first dose. Aimovig® was discontinued in many of the reported cases.

Monitor patients treated with Aimovig® for new-onset hypertension, or worsening of pre-existing hypertension, and consider whether discontinuation of Aimovig® is warranted if evaluation fails to establish an alternative etiology.

Adverse Reactions: The most common adverse reactions in clinical studies (≥ 3% of Aimovig®-treated patients and more often than placebo) were injection site reactions and constipation.

Please see Aimovig® full Prescribing Information.

About Migraine

People with frequent migraine attacks may lose more than half their life to migraine.[17,16] They endure debilitating pain, physical impairment, and can live in constant dread of the next attack – all of which is compounded by a widespread misperception of the disease.[5,17] The 2019 Global Burden of Disease Study ranks migraine among the top 10 causes of years lived with disability worldwide.[18] Migraine is associated with personal and societal burdens of pain, disability and financial cost, and it remains under-recognized and under-treated.[5,19]

About Amgen

Amgen is committed to unlocking the potential of biology for patients suffering from serious illnesses by discovering, developing, manufacturing and delivering innovative human therapeutics. This approach begins by using tools like advanced human genetics to unravel the complexities of disease and understand the fundamentals of human biology.

Amgen focuses on areas of high unmet medical need and leverages its expertise to strive for solutions that improve health outcomes and dramatically improve people's lives. A biotechnology pioneer since 1980, Amgen has grown to be one of the world's leading independent biotechnology companies, has reached millions of patients around the world and is developing a pipeline of medicines with breakaway potential.

For more information, visit www.amgen.com and follow us on www.twitter.com/amgen.

Amgen Forward-Looking Statements

This news release contains forward-looking statements that are based on the current expectations and beliefs of Amgen. All statements, other than statements of historical fact, are statements that could be deemed forward-looking statements, including any statements on the outcome, benefits and synergies of collaborations, or potential collaborations, with any other company (including BeiGene, Ltd., Kyowa-Kirin Co., Ltd., or any collaboration to manufacture therapeutic antibodies against COVID-19), the performance of Otezla® (apremilast) (including anticipated Otezla sales growth and the timing of non-GAAP EPS accretion), the Five Prime Therapeutics, Inc. acquisition, or the Teneobio, Inc. acquisition, as well as estimates of revenues, operating margins, capital expenditures, cash, other financial metrics, expected legal, arbitration, political, regulatory or clinical results or practices, customer and prescriber patterns or practices, reimbursement activities and outcomes, effects of pandemics or other widespread health problems such as the ongoing COVID-19 pandemic on our business, and other such estimates and results. Forward-looking statements involve significant risks and uncertainties, including those discussed below and more fully described in the Securities and Exchange Commission reports filed by Amgen, including our most recent annual report on Form 10-K and any subsequent periodic reports on Form 10-Q and current reports on Form 8-K. Unless otherwise noted, Amgen is providing this information as of the date of this news release and does not undertake any obligation to update any forward-looking statements contained in this document as a result of new information, future events or otherwise.

No forward-looking statement can be guaranteed and actual results may differ materially from those we project. Discovery or identification of new product candidates or development of new indications for existing products cannot be guaranteed and movement from concept to product is uncertain; consequently, there can be no guarantee that any particular product candidate or development of a new indication for an existing product will be successful and become a commercial product. Further, preclinical results do not guarantee safe and effective performance of product candidates in humans. The complexity of the human body cannot be perfectly, or sometimes, even adequately modeled by computer or cell culture systems or animal models. The length of time that it takes for us to complete clinical trials and obtain regulatory approval for product marketing has in the past varied and we expect similar variability in the future. Even when clinical trials are successful, regulatory authorities may question the sufficiency for approval of the trial endpoints we have selected. We develop product candidates internally and through licensing collaborations, partnerships and joint

ventures. Product candidates that are derived from relationships may be subject to disputes between the parties or may prove to be not as effective or as safe as we may have believed at the time of entering into such relationship. Also, we or others could identify safety, side effects or manufacturing problems with our products, including our devices, after they are on the market.

Our results may be affected by our ability to successfully market both new and existing products domestically and internationally, clinical and regulatory developments involving current and future products, sales growth of recently launched products, competition from other products including biosimilars, difficulties or delays in manufacturing our products and global economic conditions. In addition, sales of our products are affected by pricing pressure, political and public scrutiny and reimbursement policies imposed by third-party payers, including governments, private insurance plans and managed care providers and may be affected by regulatory, clinical and guideline developments and domestic and international trends toward managed care and healthcare cost containment. Furthermore, our research, testing, pricing, marketing and other operations are subject to extensive regulation by domestic and foreign government regulatory authorities. Our business may be impacted by government investigations, litigation and product liability claims. In addition, our business may be impacted by the adoption of new tax legislation or exposure to additional tax liabilities. If we fail to meet the compliance obligations in the corporate integrity agreement between us and the U.S. government, we could become subject to significant sanctions. Further, while we routinely obtain patents for our products and technology, the protection offered by our patents and patent applications may be challenged, invalidated or circumvented by our competitors, or we may fail to prevail in present and future intellectual property litigation. We perform a substantial amount of our commercial manufacturing activities at a few key facilities, including in Puerto Rico, and also depend on third parties for a portion of our manufacturing activities, and limits on supply may constrain sales of certain of our current products and product candidate development. An outbreak of disease or similar public health threat, such as COVID-19, and the public and governmental effort to mitigate against the spread of such disease, could have a significant adverse effect on the supply of materials for our manufacturing activities, the distribution of our products, the commercialization of our product candidates, and our clinical trial operations, and any such events may have a material adverse effect on our product development, product sales, business and results of operations. We rely on collaborations with third parties for the development of some of our product candidates and for the commercialization and sales of some of our commercial products. In addition, we compete with other companies with respect to many of our marketed products as well as for the discovery and development of new products. Further, some raw materials, medical devices and component parts for our products are supplied by sole third-party suppliers. Certain of our distributors, customers and payers have substantial purchasing leverage in their dealings with us. The discovery of significant problems with a product similar to one of our products that implicate an entire class of products could have a material adverse effect on sales of the affected products and on our business and results of operations. Our efforts to collaborate with or acquire other companies, products or technology, and to integrate the operations of companies or to support the products or technology we have acquired, may not be successful. A breakdown, cyberattack or information security breach could compromise the confidentiality, integrity and availability of our systems and our data. Our stock price is volatile and may be affected by a number of events. Global economic conditions may magnify certain risks that affect our business. Our business performance could affect or limit the ability of our Board of Directors to declare a dividend or our ability to pay a dividend or repurchase our common stock. We may not be able to access the capital and credit markets on terms that are favorable to us, or at all.

Any scientific information discussed in this news release relating to new indications for our products is preliminary and investigative and is not part of the labeling approved by the U.S. Food and Drug Administration for the products. The products are not approved for the investigational use(s) discussed in this news release, and no conclusions can or should be drawn regarding the safety or effectiveness of the products for these uses.

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