



# Study of Efficacy and Safety of AMG 334 in Adult Episodic Migraine Patients

23/08/2025 08:09:28

## Main Information

**Primary registry identifying number**

LBCTR2019060240

**Protocol number**

AMG334A2302

**MOH registration number**

49904/2017

**Study registered at the country of origin**

Yes

**Study registered at the country of origin: Specify**

**Type of registration**

Retrospective

**Type of registration: Justify**

LCTR was recently initiated, original file was previously submitted by Paper

**Date of registration in national regulatory agency**

20/12/2017

**Primary sponsor**

Novartis Pharma Services Inc.

**Primary sponsor: Country of origin**

Novartis Pharmaceuticals

**Date of registration in primary registry**

11/06/2019

**Date of registration in national regulatory agency**

20/12/2017

**Public title**

Study of Efficacy and Safety of AMG 334 in Adult Episodic Migraine Patients

**Acronym**

EMPOWER

**Scientific title**

A 12-week Double-blind, Randomized, Multi-center Study Comparing the Efficacy and Safety of Once Monthly Subcutaneous AMG 334 Against Placebo in Adult Episodic Migraine Patients (EMPOWER)

**Acronym**

**Brief summary of the study: English**

The purpose of this study is to evaluate the efficacy and safety of AMG334 in countries beyond the United States (US) and European Union (EU).

**Brief summary of the study: Arabic**

أسبوعاً تقارن ما بين فعالية وسلامة جرعة شهرية واحدة تحت الجلد من دواء 12 دراسة متعددة المراكز، عشوائية التوزيع، مزدوجة التعمية من AMG 334 (EMPOWER) مقابل الدواء الوهمي لدى مرضى بالغين مصابين بالصداع النصفي العرضي

**Health conditions/problem studied: Specify**

Migraine

**Interventions: Specify**

•Biological: Erenumab

AMG334 is a fully human monoclonal antibody targeting the CGRP receptor under development for migraine prophylaxis in adults.

•Other: Placebo

Placebo will match the active study drug and will be administered similarly.

**Key inclusion and exclusion criteria: Inclusion criteria**

- 1.Documented history of migraine in the 12 months prior to screening
- 2.4-14 days per month of migraine symptoms



3.>=80% diary compliance during the Baseline period

**Key inclusion and exclusion criteria: Gender**

Both

**Key inclusion and exclusion criteria: Age minimum**

18

**Key inclusion and exclusion criteria: Exclusion criteria**

- 1.>50 years old at migraine onset
- 2.Pregnant or nursing
- 3.History of cluster or hemiplegic headache
- 4.Evidence of seizure or major psychiatric disorder
- 5.Score of 19 or higher on the BDI
- 6.Active chronic pain syndrome
- 7.Cardiac or hepatic disease

**Type of study**

Interventional

**Type of intervention**

Pharmaceutical

**Trial scope**

Other

**Study design: Allocation**

Randomized controlled trial

**Study design: Control**

Placebo

**Study design: Purpose**

Treatment

**Study design: Assignment**

Parallel

**IMP has market authorization**

Yes, Worldwide

**Name of IMP**

erenumab (AIMOVIG)

**Type of IMP**

Others

**Pharmaceutical class**

Erenumab (Aimovig) is a human monoclonal immunoglobulin G2 (IgG2) that is directed against the canonical CGRP receptor, where it inhibits and blocks the action of CGRP.

**Therapeutic indication**

Preventive treatment of migraine in adults.

**Therapeutic benefit**

**Key inclusion and exclusion criteria: Specify gender**

**Key inclusion and exclusion criteria: Age maximum**

65

**Type of intervention: Specify type**

N/A

**Trial scope: Specify scope**

**Study design: Masking**

Blinded (masking used)

**Study phase**

3

**Study design: Specify purpose**

N/A

**Study design: Specify assignment**

N/A

**IMP has market authorization: Specify**

USA, Europe (Austria, Croatia, Czech republic, Denmark, Estonia, Finland, Germany, Iceland, Italy, Latvia, Poland, Portugal, Norway, Sweden, Switzerland, UK)

**Year of authorization**

**Month of authorization**



The primary efficacy endpoint was 50% reduction in MMD while change from baseline in MMD was a secondary endpoint, also showed positive outcomes. Considering the totality of data, erenumab 70 mg has shown robust and consistent clinically and statistically significant efficacy with no significant dose-dependent adverse events, while erenumab 140 mg has shown even greater treatment effects along with a favorable safety and tolerability profile that was similar to erenumab 70 mg.

**Study model**

N/A

**Study model: Explain model**

N/A

**Study model: Specify model**

N/A

**Time perspective**

N/A

**Time perspective: Explain time perspective**

N/A

**Time perspective: Specify perspective**

N/A

**Target follow-up duration****Target follow-up duration: Unit****Number of groups/cohorts****Biospecimen retention**

Samples with DNA\*\*

**Biospecimen description**

A central laboratory will be used for analysis of all specimens collected.  
Quintiles Ltd. – Scotland; Q<sup>2</sup> Solutions; The Alba Campus; Rosebank; Livingston; West Lothian; EH54 7EG; United Kingdom; Telephone: 01506816043  
Hematology: red blood cells (RBCs), nucleated RBCs, hemoglobin, hematocrit, MCV, MCH, MCHC, RDW, reticulocytes, platelets, white blood cells (WBCs), WBC differential. The differential will measure: bands/stabs, neutrophils, eosinophils, basophils, lymphocytes, monocytes, myeloblasts, promyelocytes, myelocytes, metamyelocytes, and atypical lymphocytes.  
Chemistry: sodium, potassium, chloride, bicarbonate, total protein, albumin, calcium, magnesium, phosphorus, glucose, BUN/urea, bilirubin (direct and total), alkaline phosphatase, ALT (SGPT), AST (SGOT), total cholesterol, HDL, LDL, triglycerides, CPK, and eGFR.  
Urinalysis: specific gravity, pH, blood, protein, glucose, bilirubin, WBC, RBC, epithelial cells, bacteria, casts, and crystals

**Target sample size**

44

**Actual enrollment target size**

40

**Date of first enrollment: Type**

Actual

**Date of first enrollment: Date**

08/02/2018

**Date of study closure: Type**

Actual

**Date of study closure: Date**

07/02/2020

**Recruitment status**

Recruiting

**Recruitment status: Specify****Date of completion**

02/09/2019



## IPD sharing statement plan

Yes

## Additional data URL

<https://clinicaltrials.gov/ct2/show/record/NCT03333109>

## Admin comments

## Trial status

Approved

## IPD sharing statement description

Novartis is committed to sharing with qualified external researchers, access to patient-level data and supporting clinical documents from eligible studies. These requests are reviewed and approved by an independent review panel on the basis of scientific merit. All data provided is anonymized to respect the privacy of patients who have participated in the trial in line with applicable laws and regulations.

This trial data availability is according to the criteria and process described on [www.clinicalstudydatarequest.com](http://www.clinicalstudydatarequest.com)

## Secondary Identifying Numbers

| Full name of issuing authority | Secondary identifying number |
|--------------------------------|------------------------------|
| Clinicaltrials.gov             | NCT03333109                  |

## Sources of Monetary or Material Support

| Name                          |
|-------------------------------|
| Novartis Pharma Services Inc. |

## Secondary Sponsors

| Name |
|------|
| NA   |



## Contact for Public/Scientific Queries

| Contact type | Contact full name | Address    | Country | Telephone              | Email                         | Affiliation   |
|--------------|-------------------|------------|---------|------------------------|-------------------------------|---|
| Public       | Taghrid Hajj      | Beirut     | Lebanon | 03/494008              | taghridelhajj@gmail.com       | Rafik Hariri University Hospital                          |
| Scientific   | Hind Khairallah   | Sin El Fil | Lebanon | +961 1 512002 Ext. 271 | Hind.Khairallah@fattal.com.lb | Khalil Fattal et Fils s.a.l.                              |
| Public       | Achraf Makki      | Beirut     | Lebanon | 70/878886              | am132@aub.edu.lb              | American University Of Beirut Medical Center              |
| Public       | Ghassan Mehanna   | Beirut     | Lebanon | 71/454849              | drgmouhanna@gmail.com         | Bellevue Medical Center                                   |
| Public       | Shawkat Beayni    | Chouf      | Lebanon | 03/700357              | sh_beayni@hotmail.com         | Ainwazein Medical Village                                 |
| Public       | Salim Atrouni     | Beirut     | Lebanon | 03/215679              | atrounidr@hotmail.com         | Makassed General Hospital                                 |
| Public       | Naji Riachi       | Beirut     | Lebanon | 03/229324              | naji.riachi@laumcrh.com       | Lebanese American University Medical Center Rizk Hospital |
| Public       | Aline Mourad      | Beirut     | Lebanon | 70/472332              | aline_mourad@hotmail.com      | Saint Georges Hospital University Medical Center          |

## Centers/Hospitals Involved in the Study

| Center/Hospital name                                      | Name of principles investigator | Principles investigator speciality | Ethical approval |
|---|---------------------------------|------------------------------------|------------------|
| Rafic Hariri University Hospital                          | Dr. Taghrid Hajj                | Neurologist                        | Approved         |
| American University of Beirut Medical Center              | Dr. Achraf Makki                | Neurologist                        | Approved         |
| Bellevue Medical Center                                   | Dr. Ghassan Mehanna             | Neurologist                        | Approved         |
| Ain Wazein Medical Village                                | Dr. Shawkat Beayni              | Neurologist                        | Approved         |
| Makassed General Hospital                                 | Dr. Salim Atrouni               | Neurologist                        | Approved         |
| Lebanese American University Medical Center Rizk Hospital | Dr. Naji Riachi                 | Neurologist                        | Approved         |
| Saint George Hospital University Medical Center           | Dr Aline Mourad                 | Neurologist                        | Approved         |



## Ethics Review

| Ethics approval obtained  | Approval date | Contact name       | Contact email                         | Contact phone               |
|---|---------------|--------------------|---------------------------------------|-----------------------------|
| American University of Beirut Medical Center                          | 14/06/2018    | Fouad Ziyadeh      | fz05@aub.edu.lb                       | +961 (0) 1 350 000 ext:5445 |
| Saint George Hospital University Medical Center                       | 21/06/2018    | Michel Daher       | mndaher@stgeorgehospital.org          | +961 (0)1 441 733           |
| Bellevue Medical Center   | 25/10/2017    | Ghassan Maalouf    | gmaalouf@bmc.com.lb                   | +961 (0) 1 682666 ext 7600  |
| Ain w Zein Medical Village  | 23/12/2017    | Khaled Abdel Baki  | Khaled.abdelbaki@awmedicalvillage.org | +961 (0) 5 509 001 ext 2000 |
| Makassed General Hospital   | 09/11/2017    | Mariam Rajab       | research.makassed@hotmail.com         | 01636941                    |
| Lebanese American University- University Medical Center Rizk Hospital | 24/01/2018    | Christine Chalhoub | christine.chalhoub@lau.edu.lb         | +961 9 547254 ext. 2340     |
| Rafic Hariri University Hospital                                      | 29/11/2017    | Rawan Yamout       | rawan.yamout@crurhuh.com              | 018300000 ext 2036          |

## Countries of Recruitment

| Name              |
|-------------------|
| Lebanon           |
| Argentina         |
| India             |
| Republic of Korea |
| Malaysia          |
| Mexico            |
| Philippines       |
| Singapore         |
| Taiwan            |
| Thailand          |
| Viet Nam          |



## Health Conditions or Problems Studied

| Condition | Code           | Keyword  |
|-----------|----------------|----------|
| Migraine  | Migraine (G43) | Migraine |

## Interventions

| Intervention                        | Description                         | Keyword                             |
|-------------------------------------|-------------------------------------|-------------------------------------|
| ICF, Physical Exam, ECG, local Labs | ICF, Physical Exam, ECG, local Labs | ICF, Physical Exam, ECG, local Labs |

## Primary Outcomes

| Name  | Time Points | Measure  |
|---|-------------|----------|
| Change from baseline in monthly migraine days at the last month | 3 months    | 3 months |

## Key Secondary Outcomes

| Name  | Time Points | Measure  |
|---|-------------|----------|
| •Achievement of at least a 50% reduction from baseline in monthly migraine days | 3 months    | 3 months |
| •Change from Baseline in acute migraine-specific medication treatment days      | 3 months    | 3 months |
| •Change from Baseline in headache impact scores as measured by the HIT-6        | 3 months    | 3 months |



## Trial Results

Summary results

Study results globally

Date of posting of results summaries

Date of first journal publication of results

Results URL link

Baseline characteristics

Participant flow

Adverse events

Outcome measures

URL to protocol files