Clinical trial results:
Definition of neuroimaging and laboratory biomarkers as possible predictors for treatment response to Galcanezumab in high-frequency episodic migraine (PREDICT)

Summary

EudraCT number	2021-006176-16
Trial protocol	DE
Global end of trial date	05 June 2024

Results information

Result version number	v1 (current)
This version publication date	29 March 2025
First version publication date	29 March 2025

Trial information

Trial identification

Sponsor protocol code	I5Q-NS-O001

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	-
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Charité- Universitätsmedizin Berlin
Sponsor organisation address	Charitéplatz 1, Berlin, Germany, 10117
Public contact	Kopfschmerzzentrum-Klinik für Neurologie, Charité - Universitätsmedizin Berlin , predict@charite.de
Scientific contact	Kopfschmerzzentrum-Klinik für Neurologie, Charité - Universitätsmedizin Berlin , predict@charite.de

Notes:

Paediatric regulatory details

Is trial part of an agreed paediatric investigation plan (PIP)	No
Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial?	No
Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial?	No

Notes:

Results analysis stage

Analysis stage	Final
Date of interim/final analysis	14 August 2024
Is this the analysis of the primary completion data?	Yes
Primary completion date	05 June 2024
Global end of trial reached?	Yes
Global end of trial date	05 June 2024
Was the trial ended prematurely?	Yes

Notes:

General information about the trial

Main objective of the trial:

To test the hypothesis that a 3 months treatment with Galcanezumab results in structural and functional brain alterations and changes of CGRP blood levels in patients with high-frequency episodic migraine. The purpose of this study is to identify structural and functional neuroimaging and laboratory biomarkers (CGRP / PACAP, immune cell populations) that are altered in association with treatment with Galcanezumab in patients with high frequency episodic migraine. Data from this study will provide information on neuroimaging and blood markers that may help to identify patients who benefit from a prophylactic treatment with Galcanezumab.

Protection of trial subjects:

The conduct of this study met all legal and regulatory requirements and in accordance with ethical principles of the Declaration of Helsinki.
To ensure the safety of all participants, we scheduled follow-up appointments in our outpatient clinic within 8 weeks after the study's discontinuation

Background therapy:

The exact mechanisms behind migraine initiation are not fully understood, although various molecular and cellular pathways have been identified.Recent findings in migraine MRI research suggest a pathoanatomic correlate of migraine burden in VBM, DTI and rs-fMRI with functional and structural changes in patients with EM or CM. Structural changes have been reported in response to conventional preventive treatment of chronic migraineurs in regions of the pain-processing network. CGRP, a key peptide in migraine pathophysiology, stimulates the release of pro-inflammatory cytokines such as Interleukin (IL)-1ß, IL-6, and Tumor Necrosis Factor Alpha, thereby causing and amplifying inflammation. Galcanezumab, a subcutaneous monoclonal CGRP antibody, is used to treat episodic and chronic migraine.
In the present study, we aimed to deepen insights into multimodal pathophysiological changes by a CGRP treatment and evaluate potential predictors of response for a sufficient treatment.

Evidence for comparator: -

Actual start date of recruitment	04 April 2022
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	Germany: 8
Worldwide total number of subjects	8
EEA total number of subjects	8

Notes:

Subjects enrolled per age group	
In utero	0
Preterm newborn - gestational age < 37 wk	0
Newborns (0-27 days)	0
Infants and toddlers (28 days-23 months)	0
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	8
From 65 to 84 years	0
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

The study was conducted at one study center in Germany between 04/05/2023 and 05/06/2024.

Pre-assignment

Screening details:

.....were screened according the inclusion and exclusion criteria

Period 1

Period 1 title	Overall trial (overall period)
Is this the baseline period?	Yes
Allocation method	Non-randomised - controlled
Blinding used	Not blinded

Blinding implementation details:

This was a single-arm study. Healthy controls without treatment served as the control group. The same inclusion criteria apply for healthy controls except for a history of migraine.

Arms

Arm title	Treatment group
Arm description: -	
Arm type	Experimental
Investigational medicinal product name	Galcanezumab
Investigational medicinal product code	
Other name	Emagility
Pharmaceutical forms	Suspension for injection in pre-filled syringe
Routes of administration	Injection

Dosage and administration details:

The investigational product dose was 240 mg/1 ml as a loading dose was administered at baseline. The second administration date was scheduled in 30-day increments (+/− 2 days) from the first dose. At one and two months later patients received 120 mg/ 1ml subcutaneous injection with an autoinjector.

Number of subjects in period 1	Treatment group
Started	8
Completed	7
Not completed	1
Adverse event, non-fatal	1

Baseline characteristics

End points

End points reporting groups

Reporting group title	Treatment group

Reporting group description: -

Primary: changes of CGRP blood levels

End point title	changes of CGRP blood levels[1]

End point description:

An analysis of the primary endpoint on MRI data and changes CGRP blood levels was impossible due to missing data after an early discontinuation of the study.

End point type	Primary

End point timeframe:

after 3 months

Notes:

[1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: An analysis of the primary endpoint on MRI data was impossible due to missing data after an early discontinuation of the study

End point values	Treatment group			
Subject group type	Reporting group			
Number of subjects analysed	8			
Units: pg/mL				
arithmetic mean (standard error)				
missing data	0 (± 0)			

Statistical analyses

No statistical analyses for this end point

Secondary: Reduction in monthly migraine days

End point title	Reduction in monthly migraine days

End point description:

End point type	Secondary

End point timeframe:

after 3 months

End point values	Treatment group			
Subject group type	Reporting group			
Number of subjects analysed	8			
Units: days				
number (not applicable)				
at baseline	11.6			
after 3 months	5.3			

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information	
Timeframe for reporting adverse events: overall trial	
Assessment type	Systematic
Dictionary used	
Dictionary name	own
Dictionary version	1
Reporting groups	
Reporting group title	Treatment group

Reporting group description: -

Serious adverse events	Treatment group		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 8 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		

Frequency threshold for reporting non-serious adverse events: 1 %

Non-serious adverse events	Treatment group		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	1 / 8 (12.50%)		
General disorders and administration site conditions			
allergic skin reaction			
subjects affected / exposed	1 / 8 (12.50%)		
occurrences (all)	1		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
23 August 2023	-change head of clinical trial

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

Limitations of the trial such as small numbers of subjects analysed or technical problems leading to unreliable data.

Due to recruitment challenges and the unexpected change of the principal investigator, the study was unable to meet its enrollment target of at least 64 participants with migraine and 25 healthy controls.

Notes: