Clinical trial results:
Open-label exploratory study to evaluate the effect of dupilumab on skin barrier function in Chinese pediatric patients with moderate-to-severe atopic dermatitis

Summary

EudraCT number	2024-000402-15
Trial protocol	Outside EU/EEA
Global end of trial date	15 March 2024

Results information

Result version number	v1 (current)
This version publication date	10 October 2024
First version publication date	10 October 2024

Trial information

Trial identification

Sponsor protocol code	LPS17244

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT05680298
WHO universal trial number (UTN)	U1111-1272-6639

Notes:

Sponsors

Sponsor organisation name	Sanofi (China) Investment Co., Ltd
Sponsor organisation address	Shanghai Branch, 19F Tower III, Jian’an Kerry Center, 1228 Middle Yan’an Road, Shanghai, China, 200040
Public contact	Trial Transparency Team, Sanofi aventis recherche & développement, Contact-US@sanofi.com
Scientific contact	Trial Transparency Team, Sanofi aventis recherche & développement, Contact-US@sanofi.com

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	30 May 2024
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	15 March 2024
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To evaluate changes in skin barrier function (SBF) with transepidermal water loss (TEWL) assessed after 5 skin tape stripping (STS) in predefined lesional skin in pediatric participants with moderate-to-severe atopic dermatitis (AD) treated with dupilumab.

Protection of trial subjects:

The study was conducted by investigators experienced in the treatment of pediatric participants. The parent(s) or guardian(s) as well as children were fully informed of all pertinent aspects of the clinical trial as well as the possibility to discontinue at any time. In addition to the consent form for the parent(s)/guardian(s), an assent form in child-appropriate language was provided and explained to the child. Repeated invasive procedures were minimized. The number of blood samples as well as the amount of blood drawn were adjusted according to age and weight. A topical anesthesia may have been used to minimize distress and discomfort.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	22 February 2023
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	China: 34
Worldwide total number of subjects	34
EEA total number of subjects	0

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)	34
Adolescents (12-17 years)	0
Adults (18-64 years)	0

From 65 to 84 years	0
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

The study was conducted at a single center in China. A total of 39 participants were screened between 22 Feb 2023 and 30 Aug 2023, of which 5 were screen failures. Screen failures were mainly due to not meeting eligibility criteria and withdrawal of informed consent.

Pre-assignment

Screening details:

24 participants with AD and 10 healthy volunteers were successfully screened and enrolled in the study to investigate dupilumab's effect on skin barrier function. Healthy participants arm did not receive any treatment and was considered as a reference comparator group.

Period 1

Period 1 title	Overall study (overall period)
Is this the baseline period?	Yes
Allocation method	Not applicable
Blinding used	Not blinded

Arms

Are arms mutually exclusive?	Yes
Arm title	Participants with AD

Arm description:

Pediatric participants with moderate-to-severe AD received dupilumab subcutaneous (SC) injection depending on the body weight. Participants with baseline body weight of >=15 kilograms (kg) but <30 kg received an SC loading dose of dupilumab 600 milligrams (mg) on Day 1, followed by every 4-week SC dosing of dupilumab 300 mg from Week 4 up to Week 12. Participants with baseline body weight >=30 kg but <60 kg received an SC loading dose of dupilumab 400 mg on Day 1, followed by bi-weekly SC dosing of dupilumab 200 mg from Week 2 to Week 14.

Arm type	Experimental
Investigational medicinal product name	Dupilumab
Investigational medicinal product code	SAR231893, REGN668
Other name	Dupixent
Pharmaceutical forms	Solution for injection in pre-filled syringe
Routes of administration	Subcutaneous use

Dosage and administration details:

Dupilumab 200 mg or 300 mg was administered SC depending on the body weight as per the protocol.

Arm title	Healthy Participants

Arm description:

Healthy volunteers matched to selected participants with AD for age, gender, location of targeted skin lesion area and study site received no treatment but were monitored in a similar way as AD participants.

Arm type	No intervention

No investigational medicinal product assigned in this arm

Number of subjects in period 1	Participants with AD	Healthy Participants
Started	24	10
Completed	22	10
Not completed	2	0
Consent withdrawn by subject	1	-

Unspecified	1	-

Baseline characteristics

Reporting groups	
Reporting group title	Participants with AD

Reporting group description:

Pediatric participants with moderate-to-severe AD received dupilumab subcutaneous (SC) injection depending on the body weight. Participants with baseline body weight of >=15 kilograms (kg) but <30 kg received an SC loading dose of dupilumab 600 milligrams (mg) on Day 1, followed by every 4-week SC dosing of dupilumab 300 mg from Week 4 up to Week 12. Participants with baseline body weight >=30 kg but <60 kg received an SC loading dose of dupilumab 400 mg on Day 1, followed by bi-weekly SC dosing of dupilumab 200 mg from Week 2 to Week 14.

Reporting group title	Healthy Participants

Reporting group description:

Healthy volunteers matched to selected participants with AD for age, gender, location of targeted skin lesion area and study site received no treatment but were monitored in a similar way as AD participants.

Reporting group values	Participants with AD	Healthy Participants	Total
Number of subjects	24	10	34
Age Categorical Units: Subjects			
Age Continuous Units: years			
arithmetic mean	8.0	8.4	
standard deviation	± 1.71	± 2.27	-
Gender Categorical Units: Subjects			
Female	11	6	17
Male	13	4	17

End points

End points reporting groups

Reporting group title	Participants with AD

Reporting group description:

Pediatric participants with moderate-to-severe AD received dupilumab subcutaneous (SC) injection depending on the body weight. Participants with baseline body weight of >=15 kilograms (kg) but <30 kg received an SC loading dose of dupilumab 600 milligrams (mg) on Day 1, followed by every 4-week SC dosing of dupilumab 300 mg from Week 4 up to Week 12. Participants with baseline body weight >=30 kg but <60 kg received an SC loading dose of dupilumab 400 mg on Day 1, followed by bi-weekly SC dosing of dupilumab 200 mg from Week 2 to Week 14.

Reporting group title	Healthy Participants

Reporting group description:

Healthy volunteers matched to selected participants with AD for age, gender, location of targeted skin lesion area and study site received no treatment but were monitored in a similar way as AD participants.

Primary: Percent Change From Baseline in TEWL After 5 STS Assessed on Lesional Skin at Week 16 in Participants With AD

End point title	Percent Change From Baseline in TEWL After 5 STS Assessed on Lesional Skin at Week 16 in Participants With AD[1][2]

End point description:

TEWL is a non-invasive SBF test that measures perspiration/water loss through skin. TEWL measurements combined with STS measures SBF in predefined skin areas which are identified at Baseline. With STS, the uppermost layers of the skin are peeled away using adhesive discs. Within the predefined lesional skin areas, 4 closely adjacent non-overlapping spots were identified for subsequent SBF assessment. Baseline was defined as last available and evaluable value before and closest to first dose of study treatment. The intent-to-treat (ITT) population included all enrolled participants, who received at least 1 dose of study treatment and all enrolled healthy participants who had at least 1 TEWL/STS assessment performed, irrespective of compliance with the study protocol and procedures. Data was only collected for participants with AD as prespecified in protocol.

End point type	Primary

End point timeframe:

Baseline (Day 1) and Week 16

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: As the endpoint is analyzed only for 1 arm, no statistical analysis is added.

[2] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.
Justification: As the endpoint is analyzed only for 1 arm, no statistical analysis is added.

End point values	Participants with AD			
Subject group type	Reporting group			
Number of subjects analysed	24			
Units: percent change				
arithmetic mean (standard deviation)	9.3534 (± 55.4986)			

Statistical analyses

No statistical analyses for this end point

Secondary: Percent Change From Baseline in TEWL Before and After 10, 15, 20 STS Assessed on Lesional Skin at Week 16 in Participants With AD

End point title	Percent Change From Baseline in TEWL Before and After 10, 15, 20 STS Assessed on Lesional Skin at Week 16 in Participants With AD[3]

End point description:

TEWL is a non-invasive SBF test that measures perspiration/water loss through skin. TEWL measurements combined with STS measures SBF in predefined skin areas which are identified at Baseline. With STS, the uppermost layers of the skin are peeled away using adhesive discs. Within the predefined lesional skin areas, 4 closely adjacent non-overlapping spots were identified for subsequent SBF assessment. Baseline was defined as last available and evaluable value before and closest to first dose of study treatment. The ITT population included all enrolled participants, who received at least 1 dose of study treatment and all enrolled healthy participants who had at least 1 TEWL/STS assessment performed, irrespective of compliance with the study protocol and procedures. Data was only collected for participants with AD as prespecified in protocol.

End point type	Secondary

End point timeframe:

Baseline (Day 1) and Week 16

Notes:

[3] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.
Justification: Only the participants with AD were analyzed.

End point values	Participants with AD			
Subject group type	Reporting group			
Number of subjects analysed	24			
Units: percent change				
arithmetic mean (standard deviation)				
Before STS	11.7785 (± 55.1387)			
After 10 STS	5.6879 (± 48.8550)			
After 15 STS	12.0645 (± 58.7468)			
After 20 STS	1.0684 (± 38.6738)			

Statistical analyses

No statistical analyses for this end point

Secondary: Absolute Change From Baseline in TEWL Before and After 10, 15, 20 STS Assessed on Lesional Skin at Week 16 in Participants With AD

End point title	Absolute Change From Baseline in TEWL Before and After 10, 15, 20 STS Assessed on Lesional Skin at Week 16 in Participants With AD[4]

End point description:

TEWL is a non-invasive SBF test that measures perspiration/water loss through skin. TEWL measurements combined with STS measures SBF in predefined skin areas which are identified at Baseline. With STS, the uppermost layers of the skin are peeled away using adhesive discs. Within the predefined lesional skin areas, 4 closely adjacent non-overlapping spots were identified for subsequent SBF assessment. Baseline was defined as last available and evaluable value before and closest to first dose of study treatment. The ITT population included all enrolled participants, who received at least 1

dose of study treatment and all enrolled healthy participants who had at least 1 TEWL/STS assessment performed, irrespective of compliance with the study protocol and procedures. Data was only collected for participants with AD as prespecified in protocol.

End point type	Secondary

End point timeframe:

Baseline (Day 1) and Week 16

Notes:

[4] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.
Justification: Only the participants with AD were analyzed.

End point values	Participants with AD			
Subject group type	Reporting group			
Number of subjects analysed	24			
Units: absolute change				
arithmetic mean (standard deviation)				
Before STS	0.4819 (± 14.5644)			
After 10 STS	0.3813 (± 20.9193)			
After 15 STS	-0.0396 (± 28.9110)			
After 20 STS	-4.5679 (± 32.1988)			

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

TEAEs were collected from first treatment administration up to Week 16

Adverse event reporting additional description:

The Safety population included all enrolled participants, including participants who actually received at least 1 dose of study treatment or had at least 1 TEWL/STS assessment. TEAE data is reported only for participants with AD as healthy participants did not receive any study treatment.

Assessment type	Systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	27.0

Reporting groups

Reporting group title	Participants with AD

Reporting group description:

Pediatric participants with moderate-to-severe AD received dupilumab SC injection depending on the body weight. Participants with baseline body weight of >=15 kg but <30 kg received an SC loading dose of dupilumab 600 mg on Day 1, followed by every 4-week SC dosing of dupilumab 300 mg from Week 4 up to Week 12. Participants with baseline body weight >=30 kg but <60 kg received an SC loading dose of dupilumab 400 mg on Day 1, followed by bi-weekly SC dosing of dupilumab 200 mg from Week 2 to Week 14.

Serious adverse events	Participants with AD		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 24 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		

Frequency threshold for reporting non-serious adverse events: 5 %

Non-serious adverse events	Participants with AD		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	4 / 24 (16.67%)		
Infections and infestations			
Upper Respiratory Tract Infection			
subjects affected / exposed	2 / 24 (8.33%)		
occurrences (all)	2		
Respiratory Tract Infection			
subjects affected / exposed	2 / 24 (8.33%)		
occurrences (all)	4		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported