



## Clinical trial results:

### The effects of allergen immunotherapy on anti-viral immunity in patients with allergic asthma

#### Summary

EudraCT number	2019-003261-18
Trial protocol	DK
Global end of trial date	31 October 2022

#### Results information

Result version number	v1 (current)
This version publication date	27 September 2023
First version publication date	27 September 2023

#### Trial information

##### Trial identification

Sponsor protocol code	VITAL
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##### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT04100902
WHO universal trial number (UTN)	-

Notes:

#### Sponsors

Sponsor organisation name	Respiratory Research Unit, Department of Respiratory Medicine, Bispebjerg University Hospital
Sponsor organisation address	Ebba Lunds Vej 48, Entr. 66, Copenhagen NV, Denmark, 2400
Public contact	Christian Woehlk, Dept. Respiratory and Infectious Diseases, Bispebjerg Hospital, Respiratory Research Unit, Dept. Respiratory and Infectious Diseases, Bispebjerg Hospital, DK, +45 53644292, cwoe0007@regionh.dk
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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	31 October 2022
Is this the analysis of the primary completion data?	Yes
Primary completion date	03 March 2022
Global end of trial reached?	Yes
Global end of trial date	31 October 2022
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

To evaluate the effects of allergen immunotherapy on anti-viral immunity in patients with allergic asthma. Main outcome is to investigate potential change in bronchial epithelial cells interferon secretion before and after 6 month of treatment with ACARIZAX or placebo.

Protection of trial subjects:

Pseudoanonymised

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	03 February 2020
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

## Population of trial subjects

### Subjects enrolled per country

Country: Number of subjects enrolled	Denmark: 39
Worldwide total number of subjects	39
EEA total number of subjects	39

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)	39
From 65 to 84 years	0
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

Patients recruited via the respiratory outpatient clinic at Bispebjerg Hospital, Copenhagen, Denmark and via social media.

### Pre-assignment

Screening details:

As per investigators judgement

### Period 1

Period 1 title	Intervention (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator, Monitor, Data analyst

Blinding implementation details:

Since both Acarizax and placebo are relabelled at the central pharmacy according to a randomization code, the investigational product will be received blinded to the study site.

### Arms

Are arms mutually exclusive?	Yes
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<b>Arm title</b>	Active
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Arm description:

SQ HDM-SLIT

Arm type	Active comparator
Investigational medicinal product name	ACARIZAX® 12 SQ oral lyophilisate
Investigational medicinal product code	
Other name	ODACTRA®, MITICURE (TM)
Pharmaceutical forms	Chewable/dispersible tablet
Routes of administration	Sublingual use

Dosage and administration details:

12-SQ, QD

<b>Arm title</b>	Placebo
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Arm description:

Placebo

Arm type	Placebo
Investigational medicinal product name	Placebo
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Dispersible tablet
Routes of administration	Sublingual use

Dosage and administration details:

No active ingredient, QD

<b>Number of subjects in period 1</b>	Active	Placebo
Started	20	19
Completed	18	18
Not completed	2	1
Consent withdrawn by subject	1	-
Suspected pregnancy	-	1
Adverse event, non-fatal	1	-

## Baseline characteristics

### Reporting groups

Reporting group title	Active
Reporting group description: SQ HDM-SLIT	
Reporting group title	Placebo
Reporting group description: Placebo	

Reporting group values	Active	Placebo	Total
Number of subjects	20	19	39
Age categorical Units: Subjects			
Adults (18-64 years)	20	19	39
Age continuous Units: years arithmetic mean standard deviation	28 ± 7.3	28 ± 8.8	-
Gender categorical Units: Subjects			
Female	13	12	25
Male	7	7	14
FEV1 L/s			
Units: L/s arithmetic mean standard deviation	3.6 ± 0.82	3.7 ± 0.71	-
FEV1/FVC Units: ratio arithmetic mean standard deviation	0.77 ± .078	80 ± .077	-
FEV1 pct Units: percentage arithmetic mean standard deviation	90 ± 13	95 ± 12	-

## End points

### End points reporting groups

Reporting group title	Active
Reporting group description:	
SQ HDM-SLIT	
Reporting group title	Placebo
Reporting group description:	
Placebo	

### Primary: Delta IFN-B mRNA rel. to UBC/GADPH

End point title	Delta IFN-B mRNA rel. to UBC/GADPH
End point description:	
Delta IFN-B is calculated within groups from baseline to week-24 (follow-up)	
End point type	Primary
End point timeframe:	
Baseline and Week-24	

End point values	Active	Placebo		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	17	17		
Units: IFN-B mRNA rel. to UBC/GADPH				
arithmetic mean (standard deviation)	1.50 ( $\pm$ 2.84)	1.11 ( $\pm$ 2.16)		

Attachments (see zip file)	Eudract IFN.png
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### Statistical analyses

Statistical analysis title	Delta IFN-B mRNA expression rel to UBC/GADPH
Statistical analysis description:	
Total RNA was extracted from HBECs using a RNeasy Plus Mini Kit (Qiagen) and 1 µg of RNA was reverse transcribed to cDNA (High-Capacity cDNA Reverse Transcription Kit, applied biosystems, Thermo Fisher Scientific). Amplification was performed by AriaMX realtime PCR system (Agilent Technologies, Glostrup, Denmark) as previously described. Target genes are listed in the Online Supplementary. The $-\Delta\Delta C_t$ method was then applied for relative quantification using UBC/GAPDH as housekeeping genes	
Comparison groups	Active v Placebo
Number of subjects included in analysis	34
Analysis specification	Pre-specified
Analysis type	equivalence
P-value	= 0.41
Method	t-test, 2-sided
Parameter estimate	Mean difference (final values)



## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Full study

Assessment type	Systematic
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### Dictionary used

Dictionary name	RedCap
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Dictionary version	0
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### Reporting groups

Reporting group title	Active
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Reporting group description:

SQ HDM-SLIT

Reporting group title	Placebo
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Reporting group description:

Placebo

Serious adverse events	Active	Placebo	
Total subjects affected by serious adverse events			
subjects affected / exposed	2 / 20 (10.00%)	1 / 19 (5.26%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events	0	0	
Immune system disorders			
Angioedema			
subjects affected / exposed	1 / 20 (5.00%)	0 / 19 (0.00%)	
occurrences causally related to treatment / all	1 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Respiratory, thoracic and mediastinal disorders			
Pleuritis	Additional description: Pleuritis following bronchoscopy		
subjects affected / exposed	1 / 20 (5.00%)	0 / 19 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Renal and urinary disorders			
Pyelonephritis acute			
subjects affected / exposed	0 / 20 (0.00%)	1 / 19 (5.26%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	



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

<b>Non-serious adverse events</b>	Active	Placebo	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	8 / 20 (40.00%)	8 / 19 (42.11%)	
General disorders and administration site conditions			
Throat irritation			
subjects affected / exposed	8 / 20 (40.00%)	6 / 19 (31.58%)	
occurrences (all)	17	17	
Respiratory, thoracic and mediastinal disorders			
Cough			
subjects affected / exposed	5 / 20 (25.00%)	6 / 19 (31.58%)	
occurrences (all)	17	17	
Infections and infestations			
Fever			
subjects affected / exposed	2 / 20 (10.00%)	2 / 19 (10.53%)	
occurrences (all)	17	17	

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
03 June 2020	Amendment v.2.2. Deletion of exclusion criteria: Birch sensitisation Change GINA 3-5 to 2-4 Add inclusion criteria Dose of ICS budesonide equivalent $\geq 400$ $\mu\text{g}$ Change inclusion criteria: Moderate to severe rhinitis to HDM induced mild-severe allergic rhinitis for at least 1 year

Notes:

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported

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### Online references

<http://www.ncbi.nlm.nih.gov/pubmed/36701676>