



## Clinical trial results:

**Subject reported outcomes on satisfaction, efficacy and safety with Luxerm® in the field-directed treatment of thin or non-hyperkeratotic and non-pigmented Actinic Keratosis of the face or the scalp**

### Summary

EudraCT number	2017-000066-29
Trial protocol	DE
Global end of trial date	28 November 2017

### Results information

Result version number	v1 (current)
This version publication date	08 October 2020
First version publication date	08 October 2020

### Trial information

#### Trial identification

Sponsor protocol code	RD.03.SPR.114384
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#### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT03511326
WHO universal trial number (UTN)	-

Notes:

### Sponsors

Sponsor organisation name	Galderma R&D
Sponsor organisation address	2400 route des colles, Biot, France, 06410
Public contact	Rajeev Chavda, Galderma R&D, rajeev.chavda@galderma.com
Scientific contact	Rajeev Chavda, Galderma R&D, rajeev.chavda@galderma.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	03 September 2018
Is this the analysis of the primary completion data?	Yes
Primary completion date	28 November 2017
Global end of trial reached?	Yes
Global end of trial date	28 November 2017
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

The main objective of this trial was to evaluate the subject reported outcomes on satisfaction with Luxerm® daylight field-directed treatment of thin or non-hyperkeratotic and non-pigmented Actinic Keratosis (AK) lesions on the face or scalp after one session (12 weeks).

Protection of trial subjects:

This clinical trial was conducted in accordance with the ethical principles originating from the Declaration of Helsinki declaration (1964) and subsequent amendments, the International Conference on Harmonization (ICH), Good Clinical Practice (GCP) and in compliance with local regulatory requirements. All subjects who participated in this trial were fully informed on the nature and the constraints of the clinical trial particularly the study treatment instructions before being asked to participate in the study.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	07 June 2017
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: 50
Worldwide total number of subjects	50
EEA total number of subjects	50

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)	9

From 65 to 84 years	41
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

This study was conducted at 7 centers in Germany between 07 June 2017 to 28 November 2017.

### Pre-assignment

Screening details:

A total of 50 subjects were enrolled in the study.

### Period 1

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

### Arms

<b>Arm title</b>	Methyl Aminolevulinate Hydrochloride Cream
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Arm description:

Subjects applied methyl aminolevulinate hydrochloride cream (Luxerm) 160 milligrams per gram (mg/g) once topically with Daylight-Photodynamic Therapy (DL-PDT: after Luxerm application, subject went outdoor under direct daylight no later than 30 minutes) within 1 week of the Baseline visit (Day 0) on thin or non-hyperkeratotic and non-pigmented Actinic Keratosis (AK) on the face and scalp.

Arm type	Experimental
Investigational medicinal product name	Methyl Aminolevulinate Hydrochloride Cream
Investigational medicinal product code	
Other name	Luxerm
Pharmaceutical forms	Cream
Routes of administration	Topical use

Dosage and administration details:

Thin layer of methyl aminolevulinate hydrochloride cream at a dose of 160 mg/g was applied on the anatomical area (face and scalp) without occlusion.

<b>Number of subjects in period 1</b>	Methyl Aminolevulinate Hydrochloride Cream
Started	50
Completed	49
Not completed	1
Consent withdrawn by subject	1

## Baseline characteristics

### Reporting groups

Reporting group title	Overall trial
Reporting group description: -	

Reporting group values	Overall trial	Total	
Number of subjects	50	50	
Age categorical			
Units: Subjects			
Age continuous			
Units: years			
arithmetic mean	73.4		
standard deviation	± 8	-	
Gender categorical			
Units: Subjects			
Female	7	7	
Male	43	43	
Skin phototype			
Fitzpatrick skin phototype is a system used to describe a person's skin type. It ranges from skin phototype I to III. Where, skin phototype I = pale white skin, always burns easily, never tans; skin phototype II = fair skin, always burns easily, tans minimally and with difficulty; skin phototype III = darker white skin, burns minimally, tans gradually and uniformly.			
Units: Subjects			
Phototype I	7	7	
Phototype II	35	35	
Phototype III	8	8	
Duration of Actinic Keratosis			
Units: Subjects			
Less than 1 year	8	8	
Between 1 and 5 years	14	14	
Between 5 and 10 years	12	12	
Between 10 and 20 years	12	12	
More than 20 years	4	4	
With any relevant of major illnesses other than Actinic Keratosis			
Units: Subjects			
No	1	1	
Yes	49	49	
Duration of Actinic Keratosis			
Units: Years			
arithmetic mean	7.77		
standard deviation	± 6.78	-	

## End points

### End points reporting groups

Reporting group title	Methyl Aminolevulinate Hydrochloride Cream
Reporting group description:	
Subjects applied methyl aminolevulinate hydrochloride cream (Luxerm) 160 milligrams per gram (mg/g) once topically with Daylight-Photodynamic Therapy (DL-PDT: after Luxerm application, subject went outdoor under direct daylight no later than 30 minutes) within 1 week of the Baseline visit (Day 0) on thin or non-hyperkeratotic and non-pigmented Actinic Keratosis (AK) on the face and scalp.	

### Primary: Number of Subjects Reported Satisfaction Questionnaire at Week 12

End point title	Number of Subjects Reported Satisfaction Questionnaire at Week 12 <sup>[1]</sup>
End point description:	
Subject satisfaction questionnaire consisted of 9 questions (Q): Q1: how satisfied are you with effectiveness, Q2: how bothered were you by treatment side effect, Q3: how satisfied are you with skin aspect, Q4: how long was duration of social embarrassment, Q5: last treatment received prior Luxerm, Q6: how do you find Luxerm DL-PDT compared to your last treatment, Q7: would you consider using treatment again, Q8: overall, how satisfied are you, Q9: if dissatisfied what are reasons with different evaluations. ITT population included all enrolled subjects (i.e. treatment dispensed). Here 'N' (number of subjects analyzed) signifies subjects who were evaluable for this endpoint and 'n' (number analyzed) signifies number of subjects who were evaluable for each specified category.	
End point type	Primary
End point timeframe:	
Week 12	
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: Only descriptive statistics was planned for this endpoint.	

End point values	Methyl Aminolevulinate Hydrochloride Cream			
Subject group type	Reporting group			
Number of subjects analysed	49			
Units: Number of subjects				
Q1. Very satisfied (n=49)	20			
Q1. Satisfied (n=49)	23			
Q1. Somewhat satisfied (n=49)	5			
Q1. Not satisfied (n=49)	1			
Q2. Not bothered at all (n=49)	38			
Q2. Bothered somewhat (n=49)	6			
Q2. Bothered a little (n=49)	2			
Q2. Bothered (n=49)	3			
Q3. Very satisfied (n=49)	14			
Q3. Satisfied (n=49)	25			
Q3. Somewhat satisfied (n=49)	8			
Q3. Not satisfied (n=49)	2			
Q5. None (n=48)	15			
Q5. Cryotherapy (n=48)	7			

Q5. Photo Therapy with red/blue lamp (n=48)	2			
Q5. Photo Therapy with daylight (n=48)	2			
Q5. Peelings (n=48)	1			
Q6. Better (n=46)	25			
Q6. Similar (n=46)	5			
Q6. Worse (n=46)	2			
Q6. Never treated with previous Tt (n=46)	14			
Q7. No (n=48)	7			
Q7. Yes (n=48)	41			
Q8. Very satisfied (n=48)	19			
Q8. Satisfied (n=48)	22			
Q8. Somewhat satisfied (n=48)	5			
Q8. Not satisfied (n=48)	2			
Q9. Treatment not effective (n=2)	2			
Q9. Side effects (n=2)	0			
Q9. Not easy to use (n=2)	0			
Q9. Skin aspect of the treated area (n=2)	1			
Q9. Other (n=2)	0			
Q5. Other Drugs/Drug Combinations (n=48)	21			

## Statistical analyses

No statistical analyses for this end point

## Primary: Number of Subjects Reported Satisfaction Questionnaire (How long was duration of social embarrassment [Question 4]) at Week 12

End point title	Number of Subjects Reported Satisfaction Questionnaire (How long was duration of social embarrassment [Question 4]) at Week 12 <sup>[2]</sup>
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End point description:

Subject satisfaction questionnaire consisted of 9 questions (Q): Q1: how satisfied are you with effectiveness, Q2: how bothered were you by treatment side effect, Q3: how satisfied are you with skin aspect, Q4: how long was duration of social embarrassment, Q5: last treatment received prior Luxerm, Q6: how do you find Luxerm DL-PDT compared to your last treatment, Q7: would you consider using treatment again, Q8: overall, how satisfied are you, Q9: if dissatisfied what are reasons with different evaluations. ITT population included all enrolled subjects (i.e. treatment dispensed). Here 'N' (number of subjects analyzed) signifies subjects who were evaluable for this endpoint and 'n' (number analyzed) signifies number of subjects who were evaluable for each specified category.

End point type	Primary
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End point timeframe:

Week 12

Notes:

[2] - 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: Only descriptive statistics was planned for this endpoint.

<b>End point values</b>	Methyl Aminolevulinat e Hydrochloride Cream			
Subject group type	Reporting group			
Number of subjects analysed	49			
Units: Days				
arithmetic mean (standard deviation)	2.8 (± 5.0)			

### Statistical analyses

No statistical analyses for this end point

### Secondary: Percentage Change From Baseline in Lesion Complete Response Rate at Week 12

End point title	Percentage Change From Baseline in Lesion Complete Response Rate at Week 12
End point description: Lesion complete response rate was defined as the percentage of pre-existing and treated lesions in the anatomical area at Week 12. Percentage change from baseline in lesion complete response rate was reported. The analysis was performed on the ITT population which consisted of the entire population enrolled (i.e. treatment dispensed).	
End point type	Secondary
End point timeframe: Baseline, Week 12	

<b>End point values</b>	Methyl Aminolevulinat e Hydrochloride Cream			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: Percent change				
arithmetic mean (standard deviation)	62.3 (± 32.2)			

### Statistical analyses

No statistical analyses for this end point

### Secondary: Percentage of Subjects with Complete Response Rate

End point title	Percentage of Subjects with Complete Response Rate
End point description: Subject complete response rate was defined as the percentage of subjects with all treated lesions clear in the anatomical area at Week 12. Percentage of subjects with complete response rate at week 12 was reported. The analysis was performed on the ITT population which consisted of the entire population enrolled (i.e. treatment dispensed).	



End point type	Secondary
End point timeframe:	
Week 12	

<b>End point values</b>	Methyl Aminolevulinat e Hydrochloride Cream			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: Percentage of subjects				
number (not applicable)	14			

### Statistical analyses

No statistical analyses for this end point

### Secondary: Percentage of Subjects with Partially Clear Response Rate

End point title	Percentage of Subjects with Partially Clear Response Rate
End point description:	
Subject partially clear was defined as the percentage of subjects with at least 75 percent (%) lesion complete response in the anatomical area at week 12. Percentage of subjects with partially clear response rate was reported. The analysis was performed on the ITT population which consisted of the entire population enrolled (i.e. treatment dispensed).	
End point type	Secondary
End point timeframe:	
Week 12	

<b>End point values</b>	Methyl Aminolevulinat e Hydrochloride Cream			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: Percentage of subjects				
number (not applicable)	42			

### Statistical analyses

No statistical analyses for this end point

### Secondary: Number of New Actinic Keratosis (AK) Lesions in the Anatomical Area at

**Week 12**

End point title	Number of New Actinic Keratosis (AK) Lesions in the Anatomical Area at Week 12
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End point description:

Any AK lesion in the anatomical area identified at Week 12 but not at Baseline was defined as a new lesion. Number of new AK lesions in the anatomical area at Week 12 was reported. The analysis was performed on the ITT population which consisted of the entire population enrolled (i.e. treatment dispensed). Here, number of subjects analyzed refer to the number of subjects evaluable for this outcome at specified time point.

End point type	Secondary
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End point timeframe:

Week 12

<b>End point values</b>	Methyl Aminolevulinat e Hydrochloride Cream			
Subject group type	Reporting group			
Number of subjects analysed	49			
Units: Number of lesions	24			

**Statistical analyses**

No statistical analyses for this end point

**Secondary: Subject's Skin Aspect at Week 12**

End point title	Subject's Skin Aspect at Week 12
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End point description:

For each AK lesion that had responded completely the investigator assessed the subject's skin aspect for the following signs or symptoms: scarring, atrophy, induration, redness or change in pigmentation. The clinical assessment of skin aspect was graded for each lesion on a 4-point scale, where 0 = poor and 3 = excellent. The analysis was performed on the ITT population which consisted of the entire population enrolled (i.e. treatment dispensed). Here, number of subjects analyzed refer to the number of subjects evaluable for this outcome at specified time point.

End point type	Secondary
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End point timeframe:

Week 12

<b>End point values</b>	Methyl Aminolevulinat e Hydrochloride Cream			
Subject group type	Reporting group			
Number of subjects analysed	43			
Units: Score on scale				
arithmetic mean (standard deviation)	2.5 (± 0.6)			

## Statistical analyses

No statistical analyses for this end point

### Secondary: Subject's Self-Assessment of Maximal Pain After Daylight (DL) Exposure

End point title	Subject's Self-Assessment of Maximal Pain After Daylight (DL) Exposure
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End point description:

After the treatment procedure and DL exposure was completed, the subject was assessed for the maximal pain felt during the duration of the light exposure. The pain sensation was assessed on an 11-point Numeric Rating Scale (NRS), where 0 = no pain at all and 10 = extreme pain. The analysis was performed on the safety population which consisted of the ITT population after exclusion of subjects who never used the treatment with certainty based on the monitoring report.

End point type	Secondary
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End point timeframe:

From signing of informed consent form (ICF) to end of study (Week 12)

<b>End point values</b>	Methyl Aminolevulinat e Hydrochloride Cream			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: score on scale				
arithmetic mean (standard deviation)	1.0 ( $\pm$ 1.4)			

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of Subjects with Adverse Events (AEs)

End point title	Number of Subjects with Adverse Events (AEs)
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End point description:

An AE was any untoward medical occurrence in a subject or clinical investigation subject administered a pharmaceutical product and which does not necessarily had a causal relationship with this treatment. An AE can therefore be any unfavorable and unintended sign (including an abnormal laboratory value), symptom, or disease temporally associated with the use of a medicinal (investigational) product, whether or not related to the medicinal (investigational) product. Number of subjects with adverse events were reported.

End point type	Secondary
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End point timeframe:

From signing of ICF to end of study (Week 12)

<b>End point values</b>	Methyl Aminolevulinat e Hydrochloride Cream			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: Subjects	28			

### Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

From signing of ICF to end of study (Week 12)

Assessment type	Non-systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	19
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### Reporting groups

Reporting group title	Methyl Aminolevulinate Hydrochloride Cream
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Reporting group description:

Subjects applied methyl aminolevulinate hydrochloride cream (Luxerm) 160 milligrams per gram (mg/g) once topically with Daylight-Photodynamic Therapy (DL-PDT: after Luxerm application, subject went outdoor under direct daylight no later than 30 minutes) within 1 week of the Baseline visit (Day 0) on thin or non-hyperkeratotic and non-pigmented AK on the face and scalp.

Serious adverse events	Methyl Aminolevulinate Hydrochloride Cream		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 50 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		

Frequency threshold for reporting non-serious adverse events: 0 %

Non-serious adverse events	Methyl Aminolevulinate Hydrochloride Cream		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	28 / 50 (56.00%)		
Injury, poisoning and procedural complications			
Procedural pain			
alternative assessment type: Systematic			
subjects affected / exposed	15 / 50 (30.00%)		
occurrences (all)	15		
Skin and subcutaneous tissue disorders			

Erythema			
alternative assessment type: Systematic			
subjects affected / exposed	19 / 50 (38.00%)		
occurrences (all)	20		
Pruritus			
alternative assessment type: Systematic			
subjects affected / exposed	1 / 50 (2.00%)		
occurrences (all)	1		
Skin burning sensation			
alternative assessment type: Systematic			
subjects affected / exposed	8 / 50 (16.00%)		
occurrences (all)	8		
Skin discolouration			
alternative assessment type: Systematic			
subjects affected / exposed	1 / 50 (2.00%)		
occurrences (all)	1		
Skin exfoliation			
alternative assessment type: Systematic			
subjects affected / exposed	1 / 50 (2.00%)		
occurrences (all)	1		
Skin irritation			
alternative assessment type: Systematic			
subjects affected / exposed	1 / 50 (2.00%)		
occurrences (all)	1		
Skin tightness			
alternative assessment type: Systematic			
subjects affected / exposed	1 / 50 (2.00%)		
occurrences (all)	1		
Skin warm			
alternative assessment type: Systematic			
subjects affected / exposed	1 / 50 (2.00%)		
occurrences (all)	1		
Infections and infestations			

Rhinitis			
alternative assessment type: Systematic			
subjects affected / exposed	1 / 50 (2.00%)		
occurrences (all)	1		
Wound infection			
alternative assessment type: Systematic			
subjects affected / exposed	1 / 50 (2.00%)		
occurrences (all)	1		

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported