



## Clinical trial results:

### SERENDEM study: MD1003 in patients suffering from demyelinating neuropathies, an open label pilot study

#### Summary

EudraCT number	2015-001150-15
Trial protocol	FR
Global end of trial date	18 March 2019

#### Results information

Result version number	v1 (current)
This version publication date	15 August 2020
First version publication date	15 August 2020

#### Trial information

##### Trial identification

Sponsor protocol code	"MD1003CT2015-01-SERENDEM
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##### Additional study identifiers

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

Notes:

#### Sponsors

Sponsor organisation name	MEDDAY SA
Sponsor organisation address	24 rue de la Pépinière, Paris, France,
Public contact	Frédéric Sedel, MEDDAY PHARMACEUTICALS, frederic.sedel@medday-pharma.com
Scientific contact	Frédéric Sedel, MEDDAY PHARMACEUTICALS, frederic.sedel@medday-pharma.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:

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**Results analysis stage**

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Analysis stage	Final
Date of interim/final analysis	13 December 2019
Is this the analysis of the primary completion data?	Yes
Primary completion date	18 March 2019
Global end of trial reached?	Yes
Global end of trial date	18 March 2019
Was the trial ended prematurely?	No

Notes:

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**General information about the trial**

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Main objective of the trial:

The main objective is to detect a signal of efficacy of high dose biotin in demyelinating polyneuropathies

Protection of trial subjects:

This protocol complied with the principal laid down by the 18th World Medical Assembly (Helsinki, 1964 and following amendments) and all applicable amendments laid down by the World Medical Assemblies, as well as the International Conference on Harmonization (ICH) Good Clinical Practice (GCP) guidelines. The trial complied with the laws and regulations of the country in which the study was performed, and any applicable guidelines.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	05 December 2016
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

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**Population of trial subjects**

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**Subjects enrolled per country**

Country: Number of subjects enrolled	France: 15
Worldwide total number of subjects	15
EEA total number of subjects	15

Notes:

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**Subjects enrolled per age group**

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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)	10
From 65 to 84 years	5
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details: -

### Pre-assignment

Screening details: -

### Pre-assignment period milestones

Number of subjects started	15
Number of subjects completed	15

### Period 1

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

### Arms

Arm title	Single arm
Arm description: -	
Arm type	Experimental
Investigational medicinal product name	MD1003
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Capsule
Routes of administration	Oral use

Dosage and administration details:

MD1003 capsules consisting of 100 mg biotin and excipients (lactose, magnesium stearate, croscarmellose sodium, silica) taken orally three times a day (one in the morning, one at noon, and one in the evening)

Number of subjects in period 1	Single arm
Started	15
Completed	14
Not completed	1
Adverse event, non-fatal	1

## Baseline characteristics

### Reporting groups

Reporting group title	Overall trial
Reporting group description: -	

Reporting group values	Overall trial	Total	
Number of subjects	15	15	
Age categorical Units: Subjects			

Age continuous Units: years median full range (min-max)	62.1 30.8 to 83.5	-	
Gender categorical Units: Subjects			
Female	8	8	
Male	7	7	

### Subject analysis sets

Subject analysis set title	FAS
Subject analysis set type	Full analysis

Subject analysis set description:

All patients who received at least one dose of study medication and with at least one assessment at baseline and during the study will be included in Full Analysis Set.

Reporting group values	FAS		
Number of subjects	15		
Age categorical Units: Subjects			

Age continuous Units: years median full range (min-max)	62.1 30.8 to 83.5		
Gender categorical Units: Subjects			
Female	8		
Male	7		

## End points

### End points reporting groups

Reporting group title	Single arm
Reporting group description: -	
Subject analysis set title	FAS
Subject analysis set type	Full analysis
Subject analysis set description:	
All patients who received at least one dose of study medication and with at least one assessment at baseline and during the study will be included in Full Analysis Set.	

### Primary: Number of patients with at least 10% improvement for at least 2 out of the 4 criteria of demyelination, in at least 3 out of 8 nerves

End point title	Number of patients with at least 10% improvement for at least 2 out of the 4 criteria of demyelination, in at least 3 out of 8 nerves <sup>[1]</sup>
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End point description:

End point type	Primary
End point timeframe:	
Baseline to end of study (week 48)	

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: The primary endpoint, for the primary analysis, was summarized as the number and percentage of patients with a clinical significant relative change (at least 10%) for at least two out of the four criteria in at least three nerves out of the eight investigated by disease group and overall on the FAS population.

End point values	Single arm	FAS		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	15	15		
Units: none	1	1		

### Statistical analyses

No statistical analyses for this end point

### Secondary: ONLS absolute change

End point title	ONLS absolute change
End point description:	
End point type	Secondary
End point timeframe:	
From baseline to week 48	

End point values	Single arm	FAS		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	15	15		
Units: none				
arithmetic mean (full range (min-max))	-0.5 (-3 to 2)	-0.5 (-3 to 2)		

### Statistical analyses

No statistical analyses for this end point

### Secondary: Timed 10-meter walk test absolute change

End point title	Timed 10-meter walk test absolute change
End point description:	
End point type	Secondary
End point timeframe:	
From baseline to week 48	

End point values	Single arm	FAS		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	15	15		
Units: none				
arithmetic mean (full range (min-max))	-0.6 (-2 to 2)	-0.6 (-2 to 2)		

### Statistical analyses

No statistical analyses for this end point

### Secondary: MRC total score absolute change

End point title	MRC total score absolute change
End point description:	
End point type	Secondary
End point timeframe:	
From baseline to Week 48	

End point values	Single arm	FAS		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	15	15		
Units: none				
arithmetic mean (full range (min-max))	4.5 (-8 to 27)	4.5 (-8 to 27)		

### Statistical analyses

No statistical analyses for this end point

### Secondary: INCAT sensory sum score absolute change

End point title	INCAT sensory sum score absolute change
End point description:	
End point type	Secondary
End point timeframe:	
From baseline to week 48	

End point values	Single arm	FAS		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	15	15		
Units: none				
arithmetic mean (full range (min-max))	-2.2 (-8 to 4)	-2.2 (-8 to 4)		

### Statistical analyses

No statistical analyses for this end point

### Secondary: Distance 6-min walk test absolute change

End point title	Distance 6-min walk test absolute change
End point description:	
End point type	Secondary
End point timeframe:	
From baseline to week 48	

End point values	Single arm	FAS		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	15	15		
Units: none				
arithmetic mean (full range (min-max))	61.1 (-15 to 151)	61.1 (-15 to 151)		

### Statistical analyses

No statistical analyses for this end point

### Secondary: Posturography: speed absolute change in spontaneous speed condition

End point title	Posturography: speed absolute change in spontaneous speed condition
End point description:	
End point type	Secondary
End point timeframe:	
From baseline to week 48	

End point values	Single arm	FAS		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	13	13		
Units: none				
arithmetic mean (full range (min-max))	0.111 (-0.2 to 0.45)	0.111 (-0.2 to 0.45)		

### Statistical analyses

No statistical analyses for this end point

### Secondary: Excitability testing: strength-duration time constant absolute change

End point title	Excitability testing: strength-duration time constant absolute change
End point description:	
End point type	Secondary
End point timeframe:	
From baseline to week 48	



End point values	Single arm	FAS		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	15	15		
Units: none				
arithmetic mean (full range (min-max))	0.068 (-0.11 to 0.28)	0.068 (-0.11 to 0.28)		

### Statistical analyses

No statistical analyses for this end point

### Secondary: Excitability testing: rheobase absolute change

End point title	Excitability testing: rheobase absolute change
End point description:	
End point type	Secondary
End point timeframe:	
From baseline to week 48	

End point values	Single arm	FAS		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	15	15		
Units: none				
arithmetic mean (full range (min-max))	-5.905 (-18.29 to 0.67)	-5.905 (-18.29 to 0.67)		

### Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Screening to 30 days after last study drug intake

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	22.0
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### Reporting groups

Reporting group title	Overall - safety set
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Reporting group description: -

Serious adverse events	Overall - safety set		
Total subjects affected by serious adverse events			
subjects affected / exposed	2 / 15 (13.33%)		
number of deaths (all causes)	1		
number of deaths resulting from adverse events			
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Clear cell renal cell carcinoma			
subjects affected / exposed	1 / 15 (6.67%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		
Nervous system disorders			
Autoimmune encephalopathy			
subjects affected / exposed	1 / 15 (6.67%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 1		

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

Non-serious adverse events	Overall - safety set		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	14 / 15 (93.33%)		
Investigations			
Laboratory test interference			

<p>subjects affected / exposed</p> <p>occurrences (all)</p> <p>Haemoglobin decreased</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p>	<p>2 / 15 (13.33%)</p> <p>2</p> <p>1 / 15 (6.67%)</p> <p>1</p>		
<p>Injury, poisoning and procedural complications</p> <p>Ankle fracture</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p> <p>Burn oesophageal</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p> <p>Foot fracture</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p>	<p>1 / 15 (6.67%)</p> <p>1</p> <p>1 / 15 (6.67%)</p> <p>1</p> <p>1 / 15 (6.67%)</p> <p>1</p>		
<p>Vascular disorders</p> <p>Hypertension</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p>	<p>1 / 15 (6.67%)</p> <p>1</p>		
<p>Surgical and medical procedures</p> <p>Breast reconstruction</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p>	<p>1 / 15 (6.67%)</p> <p>1</p>		
<p>Nervous system disorders</p> <p>Insomnia</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p> <p>BALANCE DISORDER</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p> <p>Memory impairment</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p> <p>MUSCLE CONTRACTIONS INVOLUNTARY</p> <p>subjects affected / exposed</p> <p>occurrences (all)</p>	<p>3 / 15 (20.00%)</p> <p>3</p> <p>1 / 15 (6.67%)</p> <p>1</p> <p>1 / 15 (6.67%)</p> <p>1</p> <p>1 / 15 (6.67%)</p> <p>1</p>		

Neuralgia subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 2		
Restless legs syndrome subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Sciatica subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
General disorders and administration site conditions Fatigue subjects affected / exposed occurrences (all)	3 / 15 (20.00%) 3		
Oedema peripheral subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Gastrointestinal disorders Diarrhoea subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Gastric disorder subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Nausea subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Vomiting subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Respiratory, thoracic and mediastinal disorders Sleep apnoea syndrome subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Skin and subcutaneous tissue disorders Pruritus			

subjects affected / exposed occurrences (all)	2 / 15 (13.33%) 2		
Alopecia subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Rash papular subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Psychiatric disorders Depression subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Musculoskeletal and connective tissue disorders Arthralgia subjects affected / exposed occurrences (all)	3 / 15 (20.00%) 4		
Muscle spasms subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Musculoskeletal stiffness subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Pain in extremity subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		
Infections and infestations Urinary tract infection subjects affected / exposed occurrences (all)	1 / 15 (6.67%) 1		

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
10 February 2017	Protocol was amended to allow for the inclusion of patients with CMT1b in addition to patients with CMT1a.

Notes:

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### 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.

None
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Notes: