



## Clinical trial results: Effect of oral CDP-choline on visual function in young amblyopic patients

### Summary

EudraCT number	2006-006753-27
Trial protocol	IT
Global end of trial date	01 January 2017

### Results information

Result version number	v1 (current)
This version publication date	29 April 2022
First version publication date	29 April 2022

### Trial information

#### Trial identification

Sponsor protocol code	129/2006/O/Sper
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#### Additional study identifiers

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

Notes:

### Sponsors

Sponsor organisation name	TUBILUX PHARMA
Sponsor organisation address	Via Costarica 20/22, Pomezia (RM), Italy, 00071
Public contact	Michela Fresina, Ophthalmology Unit University of Bologna Italy, +39 051 2142837, michela.fresina2@unibo.it
Scientific contact	Fabio De Gregorio, Tubilux Pharma, +39 3386659374, de_gregorio@tubilux.it

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?	Yes
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	01 January 2017
Is this the analysis of the primary completion data?	Yes
Primary completion date	01 December 2016
Global end of trial reached?	Yes
Global end of trial date	01 January 2017
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

Verify whether oral administration of CDP-choline improves the visual function in amblyopic patients after 30-day treatment, as already observed after intramuscular administration of 500-1,000 mg of CDP-choline

Protection of trial subjects:

Informed consent signed by the parent and paper data collection in a supervised environment

Background therapy:

No previous treatment for amblyopia

No other local or systemic therapy

Evidence for comparator: -

Actual start date of recruitment	01 May 2006
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	Italy: 67
Worldwide total number of subjects	67
EEA total number of subjects	67

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)	67
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:

Children suffering from anisometropic or strabismic amblyopia recruited from May 2006 to December 2006 in the Ophthalmology Service of the University of Bologna and the Eye Clinic of the Catholic University of Rome.

### Pre-assignment

Screening details:

Patients of both sexes suffering from anisometropic or strabismic monolateral amblyopia, aged between 5 and 10 years, not previously treated with conventional antiamblyopic therapies.

### Pre-assignment period milestones

Number of subjects started	67
Number of subjects completed	67

### Period 1

Period 1 title	Visit 1 day 0
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Not blinded

### Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Treated patients

Arm description:

Patients treated with CDP-choline (800 mg daily) + 2 h patching daily

Arm type	Experimental
Investigational medicinal product name	Oral Cytidine-5'-diphosphocoline
Investigational medicinal product code	
Other name	CITICOLINE
Pharmaceutical forms	Granules
Routes of administration	Oral use

Dosage and administration details:

7-28 mg/Kg/daily

<b>Arm title</b>	Control Group
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Arm description:

Patients treated with 2 h patching daily

Arm type	Adhesive patch
No investigational medicinal product assigned in this arm	

Number of subjects in period 1	Treated patients	Control Group
Started	37	30
Completed	37	30

## Period 2

Period 2 title	Visit 2 day 30
Is this the baseline period?	No
Allocation method	Randomised - controlled
Blinding used	Not blinded

## Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Treated patients

Arm description:

Patients treated with CDP-choline (800 mg daily) + 2 h patching daily

Arm type	Experimental
Investigational medicinal product name	Oral Cytidine-5'-diphosphocoline
Investigational medicinal product code	
Other name	CITICOLINE
Pharmaceutical forms	Granules
Routes of administration	Oral use

Dosage and administration details:

7-28 mg/Kg/daily

<b>Arm title</b>	Control Group
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Arm description:

Patients treated with 2 h patching daily

Arm type	Adhesive patch
No investigational medicinal product assigned in this arm	

Number of subjects in period 2	Treated patients	Control Group
Started	37	30
Completed	37	30

**Period 3**

Period 3 title	Visit 3 day 90
Is this the baseline period?	No
Allocation method	Randomised - controlled
Blinding used	Not blinded

**Arms**

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Treated patients

Arm description:

Patients treated with CDP-choline (800 mg daily) + 2 h patching daily

Arm type	Experimental
Investigational medicinal product name	Oral Cytidine-5'-diphosphocoline
Investigational medicinal product code	
Other name	CITICOLINE
Pharmaceutical forms	Granules
Routes of administration	Oral use

Dosage and administration details:

7-28 mg/Kg/daily

<b>Arm title</b>	Control Group
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Arm description:

Patients treated with 2 h patching daily

Arm type	Adhesive patch
No investigational medicinal product assigned in this arm	

<b>Number of subjects in period 3</b>	Treated patients	Control Group
Started	37	30
Completed	32	29
Not completed	5	1
Drop out for reasons no related to the treatment	5	1

## Baseline characteristics

### Reporting groups

Reporting group title	Treated patients
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Reporting group description:

Patients treated with CDP-choline (800 mg daily) + 2 h patching daily

Reporting group title	Control Group
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Reporting group description:

Patients treated with 2 h patching daily

Reporting group values	Treated patients	Control Group	Total
Number of subjects	37	30	67
Age categorical			
Units: Subjects			
Children (2-11 years)	37	30	67
Age continuous			
Units: years			
arithmetic mean	5.9	6.2	
full range (min-max)	5 to 10	5 to 10	-
Gender categorical			
Units: Subjects			
Female	21	16	37
Male	16	14	30

## End points

### End points reporting groups

Reporting group title	Treated patients
Reporting group description: Patients treated with CDP-choline (800 mg daily) + 2 h patching daily	
Reporting group title	Control Group
Reporting group description: Patients treated with 2 h patching daily	
Reporting group title	Treated patients
Reporting group description: Patients treated with CDP-choline (800 mg daily) + 2 h patching daily	
Reporting group title	Control Group
Reporting group description: Patients treated with 2 h patching daily	
Reporting group title	Treated patients
Reporting group description: Patients treated with CDP-choline (800 mg daily) + 2 h patching daily	
Reporting group title	Control Group
Reporting group description: Patients treated with 2 h patching daily	

### Primary: Change in visual acuity (BCVA) of amblyopic eyes measured by Snellen's E chart

End point title	Change in visual acuity (BCVA) of amblyopic eyes measured by Snellen's E chart
End point description:	
End point type	Primary
End point timeframe: Data were collected in 3 time points: Visit 1: baseline data were collected Visit 2: after 30 days of treatment Visit 3: after 90 days (the treatment was discontinued in the last 60 days)	

End point values	Treated patients	Control Group	Treated patients	Control Group
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	37	30	37	30
Units: LogMAR				
arithmetic mean (standard deviation)	0.34 (± 0.22)	0.26 (± 0.19)	0.16 (± 0.15)	0.09 (± 0.09)

End point values	Treated patients	Control Group		
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Subject group type	Reporting group	Reporting group		
Number of subjects analysed	32	29		
Units: LogMAR				
arithmetic mean (standard deviation)	0.14 ( $\pm$ 0.15)	0.13 ( $\pm$ 0.15)		

## Statistical analyses

<b>Statistical analysis title</b>	Two-way ANOVA
Comparison groups	Treated patients v Treated patients v Control Group v Treated patients v Control Group v Control Group
Number of subjects included in analysis	195
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.05
Method	ANOVA

<b>Statistical analysis title</b>	Tukey's test
Comparison groups	Control Group v Treated patients v Control Group v Treated patients
Number of subjects included in analysis	128
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.05
Method	Tukey's test

## Secondary: BCVA of healthy eyes measured by isolated E letters (Snellen's E chart)

End point title	BCVA of healthy eyes measured by isolated E letters (Snellen's E chart)
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End point description:

End point type	Secondary
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End point timeframe:

Data were collected in 3 time points:

Visit 1: baseline data were collected

Visit 2: after 30 days of treatment

Visit 3: after 90 days (the treatment was discontinued in the last 60 days)



End point values	Treated patients	Control Group	Treated patients	Control Group
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	37	30	37	30
Units: LogMAR				
arithmetic mean (standard deviation)	0.07 ( $\pm$ 0.09)	0.02 ( $\pm$ 0.06)	0.04 ( $\pm$ 0.06)	0.01 ( $\pm$ 0.02)

End point values	Treated patients	Control Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	32	29		
Units: LogMAR				
arithmetic mean (standard deviation)	0.04 ( $\pm$ 0.08)	0.01 ( $\pm$ 0.02)		

### Statistical analyses

Statistical analysis title	Two-way ANOVA
Comparison groups	Treated patients v Control Group v Treated patients v Control Group v Treated patients v Control Group
Number of subjects included in analysis	195
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.05
Method	ANOVA

Statistical analysis title	Tukey's test
Comparison groups	Treated patients v Control Group v Treated patients v Control Group
Number of subjects included in analysis	128
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.05
Method	Tukey's test

### Secondary: BCVA of amblyopic eyes measured by isolated E letters

End point title	BCVA of amblyopic eyes measured by isolated E letters
End point description:	

End point type	Secondary
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End point timeframe:

Data were collected in 3 time points:

Visit 1: baseline data were collected

Visit 2: after 30 days of treatment

<b>End point values</b>	Treated patients	Control Group	Treated patients	Control Group
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	37	30	37	30
Units: LogMAR				
arithmetic mean (standard deviation)	0.21 ( $\pm$ 0.26)	0.17 ( $\pm$ 0.21)	0.08 ( $\pm$ 0.14)	0.03 ( $\pm$ 0.08)

<b>End point values</b>	Treated patients	Control Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	32	29		
Units: LogMAR				
arithmetic mean (standard deviation)	0.05 ( $\pm$ 0.12)	0.06 ( $\pm$ 0.13)		

### Statistical analyses

<b>Statistical analysis title</b>	Two-way ANOVA
Comparison groups	Treated patients v Control Group v Treated patients v Control Group v Treated patients v Control Group
Number of subjects included in analysis	195
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.05
Method	ANOVA

<b>Statistical analysis title</b>	Tukey's test
Comparison groups	Treated patients v Control Group v Treated patients v Control Group
Number of subjects included in analysis	128
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.05
Method	Tukey's test

## Adverse events

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### Adverse events information<sup>[1]</sup>

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Timeframe for reporting adverse events:

Throughout the entire timeframe of the trial.

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	9.1
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Frequency threshold for reporting non-serious adverse events: 5 %

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#### Notes:

[1] - There are no non-serious adverse events recorded for these results. It is expected that there will be at least one non-serious adverse event reported.

Justification: No adverse reaction to CDP-choline, either minor or serious, was reported throughout the trial. The safety of the treatment was judged to be excellent by the investigators.

## **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