Clinical trial results:
A randomized, double-blind, placebo-controlled, home use, cross-over clinical trial of topically-applied glyceryl trinitrate (GTN) for the treatment of Erectile Dysfunction

Summary

EudraCT number	2014-005571-89
Trial protocol	GB PL
Global end of trial date	30 July 2016

Results information

Result version number	v1 (current)
This version publication date	20 November 2021
First version publication date	20 November 2021

Trial information

Trial identification

Sponsor protocol code	FM53

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT02495467
WHO universal trial number (UTN)	-
Other trial identifiers	C14063: Richmond Pharmacology Ltd. Study Number

Notes:

Sponsors

Sponsor organisation name	Futura Medical Developments Limited
Sponsor organisation address	40 Occam Road, Guildford, United Kingdom, GU2 7YG
Public contact	Andy Graham - Senior Clinical Project Manager, Futura Medical Developments Limited, +44 01483 685670, andy.graham@futuramedical.com
Scientific contact	Andy Graham - Senior Clinical Project Manager, Futura Medical Developments Limited, +44 01483 685670, andy.graham@futuramedical.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 July 2016
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	30 July 2016
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To assess how well a new medication known as MED2005 works (i.e.causes an erection) when applied to the penis of male volunteers self-diagnosed with Erectile Dysfunction (ED) using scores from a validated questionnaire known as IIEF (International Index for Erectile Function).

Protection of trial subjects:

Treated in routine care. The study included careful monitoring of any potential adverse events

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	15 May 2015
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	United Kingdom: 178
Country: Number of subjects enrolled	Poland: 54
Worldwide total number of subjects	232
EEA total number of subjects	54

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)	216
From 65 to 84 years	16
85 years and over	0

Subject disposition

Recruitment

Recruitment details: -

Pre-assignment

Screening details:

A total of 392 subjects were screened. 232 subjects fulfilled the eligibility criteria and were randomised.

Period 1

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

Arms

Are arms mutually exclusive?	No
Arm title	MED Placebo

Arm description: -

Arm type	Placebo
Investigational medicinal product name	MED2005 Placebo
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Gel
Routes of administration	Topical

Dosage and administration details:

Single topical application of a small pea sized amount (approx. 300 mg) prior to sexual intercourse.

Arm title	MED2005

Arm description: -

Arm type	Experimental
Investigational medicinal product name	MED2005
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Gel
Routes of administration	Topical

Dosage and administration details:

Single topical application of a small pea sized amount (approx. 300 mg) prior to sexual intercourse.

Number of subjects in period 1	MED Placebo	MED2005
Started	230	230
Completed	227	230
Not completed	3	0
Consent withdrawn by subject	1	-
Protocol deviation	2	-

Baseline characteristics

Reporting groups[1]

Reporting group title	Overall

Reporting group description: -

Notes:

[1] - The number of subjects reported to be in the baseline period is not equal to the worldwide number of subjects enrolled in the trial. It is expected that these numbers will be the same.
Justification: 1 subject out of the 232 randomised was not treated and was not included in the summary.

Reporting group values	Overall	Total	
Number of subjects	231	231	
Age categorical Units: Subjects			
In utero	0	0	
Preterm newborn infants (gestational age < 37 wks)	0	0	
Newborns (0-27 days)	0	0	
Infants and toddlers (28 days-23 months)	0	0	
Children (2-11 years)	0	0	
Adolescents (12-17 years)	0	0	
Adults (18-64 years)	16	16	
From 65-84 years	215	215	
85 years and over	0	0	
Age continuous Units: years			
arithmetic mean	43.0		
standard deviation	± 14.2	-	
Gender categorical Units: Subjects			
Female	0	0	
Male	231	231	
Erectile Function (EF) domain score of the International Index of Erectile Function (IIEF) Units: Score			
arithmetic mean			
standard deviation	±	-	

Subject analysis sets

Subject analysis set title	Full Analysis Set
Subject analysis set type	Full analysis

Subject analysis set description:

All randomised subjects who reported at least one intercourse attempt and had at least one efficacy assessment in a period for which at least one intercourse attempt was reported.

Reporting group values	Full Analysis Set		
Number of subjects	230		

Age categorical Units: Subjects			
In utero	0		
Preterm newborn infants (gestational age < 37 wks)	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)	16		
From 65-84 years	214		
85 years and over	0		
Age continuous Units: years			
arithmetic mean	43.0		
standard deviation	± 14.2		
Gender categorical Units: Subjects			
Female	0		
Male	230		
Erectile Function (EF) domain score of the International Index of Erectile Function (IIEF) Units: Score			
arithmetic mean	17.1		
standard deviation	± 5.7		

End points

End points reporting groups

Reporting group title	MED Placebo
Reporting group description: -	
Reporting group title	MED2005
Reporting group description: -	
Subject analysis set title	Full Analysis Set
Subject analysis set type	Full analysis

Subject analysis set description:

All randomised subjects who reported at least one intercourse attempt and had at least one efficacy assessment in a period for which at least one intercourse attempt was reported.

Primary: Erectile Function (EF) domain of the International Index of Erectile Function (IIEF) questionnaire

End point title	Erectile Function (EF) domain of the International Index of Erectile Function (IIEF) questionnaire

End point description:

End point type	Primary

End point timeframe:

4 weeks

End point values	MED Placebo	MED2005		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	225	223		
Units: Score				
arithmetic mean (standard deviation)	18.5 (± 6.7)	19.6 (± 7.5)		

Statistical analyses

Statistical analysis title	Primary Outcome

Statistical analysis description:

The EF domain score of the IIEF was analysed using a linear mixed model with treatment, period and sequence as fixed effects, subject as random effect and baseline (run-in) as covariate.

Comparison groups	MED Placebo v MED2005
Number of subjects included in analysis	448
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.0132
Method	Mixed models analysis
Parameter estimate	Mean difference (final values)
Point estimate	1.03

Confidence interval	
level	95 %
sides	2-sided
lower limit	0.22
upper limit	1.84

Adverse events

Adverse events information	
Timeframe for reporting adverse events: 4 weeks on treatment plus 1 week follow-up.	
Assessment type	Non-systematic
Dictionary used	
Dictionary name	MedDRA
Dictionary version	10.0
Reporting groups	
Reporting group title	MED Placebo
Reporting group description: -	
Reporting group title	MED2005
Reporting group description: -	

Serious adverse events	MED Placebo	MED2005	
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 227 (0.00%)	0 / 229 (0.00%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events	0	0	

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

Non-serious adverse events	MED Placebo	MED2005	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	18 / 227 (7.93%)	31 / 229 (13.54%)	
Nervous system disorders			
Headache			
subjects affected / exposed	7 / 227 (3.08%)	18 / 229 (7.86%)	
occurrences (all)	7	20	
Infections and infestations			
Nasopharyngitis			
subjects affected / exposed	11 / 227 (4.85%)	13 / 229 (5.68%)	
occurrences (all)	11	14	

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
17 June 2015	The initial protocol (v1.0, 23 Feb 2015) was submitted to the EC and was updated in response to conditional approval from EC to v2.0, 10 Apr 2015, which was subsequently approved. This version of the protocol was submitted to the Medicines and Healthcare products Regulatory Agency (MHRA) but changes were made in response to the 'Grounds for non-acceptance notification' that was received. The protocol was therefore updated to v3.0, 17 Jun 2015, which was approved by the MHRA. Due to the changes, this version of the protocol was then submitted to EC as a substantial amendment (No. 1).
07 July 2015	Update of the application leaflet.
24 July 2015	Inclusion of up to 4 additional sites in Poland Changes to inclusion criteria Addition of a pregnancy test for female partners Update of the frequency of GAQ questionnaire and correction of administration errors The EC provided an unfavourable opinion, so changes were made to the protocol accordingly and this was re-submitted as v5.0. This version was then approved by the EC.
04 August 2015	Extension of the shelf-life of placebo from 12 months to 18 months Addition of MedPharm as an alternative/additional site for IMP labelling and final release (to Sharp) An updated IMPD (17 Dec 2015) was submitted for review
11 January 2016	Amendment to the IMP specified description to avoid confusion during QC/Qualified Person release. Active and placebo descriptions amended from 'Turbid high viscosity gel' to 'Clear to turbid gel'. An updated IMPD (11 Jan 2016) was submitted for review.

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported

Online references

http://www.ncbi.nlm.nih.gov/pubmed/29306609