



## Clinical trial results:

### The brain opioid system and emotional experiences arising while viewing social interactions.

#### Summary

EudraCT number	2012-005278-71
Trial protocol	FI
Global end of trial date	07 October 2013

#### Results information

Result version number	v1 (current)
This version publication date	13 December 2021
First version publication date	13 December 2021
Summary attachment (see zip file)	Publication (Publication for 2012-005278-71.pdf)

#### Trial information

##### Trial identification

Sponsor protocol code	REMINALO1
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##### Additional study identifiers

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

Notes:

#### Sponsors

Sponsor organisation name	Helsinki University Hospital
Sponsor organisation address	Stenbäckinkatu, Helsinki, Finland, 00029 HUS
Public contact	Eija Kalso, Helsinki University Central Hospital, 358 9471 75640, eija.kalso@hus.fi
Scientific contact	Eija Kalso, Helsinki University Central Hospital, 358 9471 75885, eija.kalso@helsinki.fi

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	02 February 2017
Is this the analysis of the primary completion data?	Yes
Primary completion date	07 October 2013
Global end of trial reached?	Yes
Global end of trial date	07 October 2013
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

Tutkimuksessa selvitetään tunnesisällöltään negatiivisten, positiivisten ja neutraalien sosiaalisia vuorovaikutuksia vuorovaikutustilanteita esittäviä lyhyitä elokuvaleikkeiden vasteita terveille koehenkilöille samanaikaisesti kun he saavat yksittäissokkona laskimonsisäisesti infusoituna keittosuolaliosta, opioidia ja opioidi agonistia.

The trial examines the emotional reactions to short film clips showing negative, positive and neutral social interactions during single blind infusions of remifentanil, saline and naloxone.

Protection of trial subjects:

Helsinki University Hospital insurance

Background therapy:

None, healthy volunteers

Evidence for comparator:

None, experimental study.

Actual start date of recruitment	02 January 2013
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	Finland: 31
Worldwide total number of subjects	31
EEA total number of subjects	31

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)	31

From 65 to 84 years	0
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

Healthy male volunteers aged 18-45 years, no medications.

### Pre-assignment

Screening details:

Examination by a neurologist: history, clinical examination, medications, allergies.

### Pre-assignment period milestones

Number of subjects started	31
Number of subjects completed	31

### Period 1

Period 1 title	remifentanyl
Is this the baseline period?	No
Allocation method	Non-randomised - controlled
Blinding used	Not blinded

Blinding implementation details:

The healthy volunteer was unaware in which order the drugs were given (remifentanyl, saline, naloxone)

### Arms

Arm title	remifentanyl
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Arm description:

Remifentanyl was administered at an effect-site concentration of 1 ng/ml using a target-controlled infusion pump.

Arm type	Active comparator
Investigational medicinal product name	Ultiva
Investigational medicinal product code	N01AH06
Other name	
Pharmaceutical forms	Concentrate and solvent for concentrate for solution for infusion
Routes of administration	Intravenous drip use

Dosage and administration details:

Remifentanyl (Ultiva) was administered as an effect-site concentration of 1 ng/ml using a target-controlled infusion pump.

<b>Number of subjects in period 1</b>	remifentanyl
Started	31
all three infusions during the same sess	31
Completed	31

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**Period 2**

Period 2 title	saline
Is this the baseline period?	Yes <sup>[1]</sup>
Allocation method	Non-randomised - controlled
Blinding used	Not blinded

Blinding implementation details:

The healthy volunteer was unaware of the order of the drugs (remifentanil or saline or naloxone)

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**Arms**

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

saline was infused iv for 23 min after a 2 min bolus

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Arm type	Placebo
Investigational medicinal product name	Natrium chloride
Investigational medicinal product code	B05BB01
Other name	
Pharmaceutical forms	Solution for solution for infusion
Routes of administration	Intravenous drip use

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Dosage and administration details:

Int5avenous infusion for 23 min

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Notes:

[1] - Period 1 is not the baseline period. It is expected that period 1 will be the baseline period.

Justification: Based on the study design (emotional valence and arousal while watching film clips), only Period 1 which is the period when saline was administered (and then compared with remifentanil or naloxone) can be considered as baseline.

<b>Number of subjects in period 2</b>	saline
Started	31
Completed	31

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**Period 3**

Period 3 title	naloxone
Is this the baseline period?	No
Allocation method	Non-randomised - controlled
Blinding used	Not blinded

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Blinding implementation details:

the healthy volunteer was unaware of the order in which the drugs were administered

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**Arms**

<b>Arm title</b>	naloxone
Arm description: Naloxone was administered as a 5 micg/kg iv bolus followed by an infusion of 40 micg/kg/min for 23 min	
Arm type	Experimental
Investigational medicinal product name	Naloxone
Investigational medicinal product code	V03AB15
Other name	
Pharmaceutical forms	Concentrate for solution for injection/infusion
Routes of administration	Intravenous drip use

Dosage and administration details:

Naloxone was administered as a 5 micg/kg iv bolus followed by an infusion of 40 micg/kg/min for 23 min

<b>Number of subjects in period 3</b>	naloxone
Started	31
Completed	31

## Baseline characteristics

### Reporting groups

Reporting group title	saline
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Reporting group description: -

Reporting group values	saline	Total	
Number of subjects	31	31	
Age categorical			
only males aged 20-35 participated in the study			
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)	31	31	
From 65-84 years	0	0	
85 years and over	0	0	
adults	0	0	
Age continuous			
age from 20 to35 years			
Units: years			
median	30		
full range (min-max)	20 to 35	-	
Gender categorical			
Units: Subjects			
Female	0	0	
Male	31	31	

### Subject analysis sets

Subject analysis set title	healthy volunteers
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Subject analysis set type	Full analysis
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Subject analysis set description:

31 male healthy volunteers aged 20-35 years

Reporting group values	healthy volunteers		
Number of subjects	31		
Age categorical			
only males aged 20-35 participated in the study			
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)	31		
From 65-84 years	0		
85 years and over	0		
adults	31		
Age continuous			
age from 20 to 35 years			
Units: years			
median	30		
full range (min-max)	20 to 35		
Gender categorical			
Units: Subjects			
Female	0		
Male	31		



## End points

### End points reporting groups

Reporting group title	remifentanyl
Reporting group description: Remifentanyl was administered at an effect-site concentration of 1 ng/ml using a target-controlled infusion pump.	
Reporting group title	saline
Reporting group description: saline was infused iv for 23 min after a 2 min bolus	
Reporting group title	naloxone
Reporting group description: Naloxone was administered as a 5 micg/kg iv bolus followed by an infusion of 40 micg/kg/min for 23 min	
Subject analysis set title	healthy volunteers
Subject analysis set type	Full analysis
Subject analysis set description: 31 male healthy volunteers aged 20-35 years	

### Primary: valence at end of film clip

End point title	valence at end of film clip
End point description: The valence of each film clip was assessed by the study subject. The valence (or arousal which was the opposite feeling) values were compared between the three infusion periods	
End point type	Primary
End point timeframe: Valence was assessed at the end of each film clip	

End point values	naloxone	remifentanyl	saline	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	31	31	31	
Units: 0-1000				
arithmetic mean (standard error)	420 (± 10)	455 (± 10)	405 (± 10)	

### Statistical analyses

Statistical analysis title	clip-wise F2 analysis
Comparison groups	remifentanyl v saline v naloxone
Number of subjects included in analysis	93
Analysis specification	Post-hoc
Analysis type	other
P-value	< 0.05
Method	ANOVA
Parameter estimate	none



## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

During the drug infusion and washout.

Adverse event reporting additional description:

during remifentanyl infusion, 4 individuals reported nausea and 5 sedation.

Assessment type	Non-systematic
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### Dictionary used

Dictionary name	own questionnaire
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Dictionary version	na
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### Reporting groups

Reporting group title	remifentanyl
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Reporting group description: -

Serious adverse events	remifentanyl		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 31 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		

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

Non-serious adverse events	remifentanyl		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	9 / 31 (29.03%)		
Nervous system disorders			
Sedation			
subjects affected / exposed	5 / 31 (16.13%)		
occurrences (all)	5		
Gastrointestinal disorders			
nausea			
subjects affected / exposed	4 / 31 (12.90%)		
occurrences (all)	4		

## 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

Limitations of the trial such as small numbers of subjects analysed or technical problems leading to unreliable data.

Our experimental study does not fit into this system.
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Notes:

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### Online references

<http://www.ncbi.nlm.nih.gov/pubmed/31006490>