

**Clinical trial results:
Effect of inhaled budesonide on the incidence and severity of Acute
Mountain Sickness at 4559 m****Summary**

EudraCT number	2016-000160-42
Trial protocol	AT
Global end of trial date	29 July 2016

Results information

Result version number	v1 (current)
This version publication date	21 September 2019
First version publication date	21 September 2019

Trial information**Trial identification**

Sponsor protocol code	M2016
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Additional study identifiers

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

Notes:

Sponsors

Sponsor organisation name	UK für Anästhesiologie und allgemeine Intensivmedizin
Sponsor organisation address	Müllner Hauptstr. 48, Salzburg, Austria, 5020
Public contact	Sekretariat, UK für Anästhesiologie und allgemeine Intensivmedizin, 0043 5725524001, ma.berger@salk.at
Scientific contact	Sekretariat, UK für Anästhesiologie und allgemeine Intensivmedizin, 0043 5725524001, ma.berger@salk.at

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	31 December 2016
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	29 July 2016
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

Does inhaled budesonide reduce the incidence of AMS after rapid and active ascent to 4559 m?

Protection of trial subjects:

Daily assessment of health status, 24/7 availability of investigators for subjects

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	02 May 2016
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	Austria: 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)	50
From 65 to 84 years	0
85 years and over	0

Subject disposition

Recruitment

Recruitment details: -

Pre-assignment

Screening details:

physical fitness (VO2max)

Pre-assignment period milestones

Number of subjects started	51 ^[1]
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Number of subjects completed	51
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Notes:

[1] - The number of subjects reported to have started the pre-assignment period are not the same as the worldwide number enrolled in the trial. It is expected that these numbers will be the same.

Justification: 1 dropout due to personal reasons after pre-investigation was completed

Period 1

Period 1 title	High Altitude Part
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Is this the baseline period?	No
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Allocation method	Randomised - controlled
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Blinding used	Double blind
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Roles blinded	Subject, Investigator, Data analyst
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Arms

Are arms mutually exclusive?	Yes
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Arm title	Placebo
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Arm description: -

Arm type	Placebo
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Investigational medicinal product name	PL1
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Investigational medicinal product code	
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Other name	
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Pharmaceutical forms	Capsule
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Routes of administration	Inhalation use
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Dosage and administration details:

Placebo T.I.D.

Arm title	B200
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Arm description:

Budesonide 200µg

Arm type	Active comparator
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Investigational medicinal product name	PR1
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Investigational medicinal product code	
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Other name	
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Pharmaceutical forms	Capsule
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Routes of administration	Inhalation use
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Dosage and administration details:

200µg T.I.D.

Arm title	B800
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Arm description:

Budesonide 800µg

Arm type	Active comparator
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Investigational medicinal product name	PR2
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Capsule
Routes of administration	Inhalation use

Dosage and administration details:

Budesonide 800µg T.I.D.

Number of subjects in period 1	Placebo	B200	B800
Started	17	17	17
Starting high altitude part	17	17	17
Completed	17	16	17
Not completed	0	1	0
Personal reasons	-	1	-

Period 2

Period 2 title	Pre-investigation
Is this the baseline period?	Yes ^[2]
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator

Arms

Are arms mutually exclusive?	Yes
Arm title	Placebo

Arm description:

Placebo

Arm type	Placebo
Investigational medicinal product name	PL1
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Capsule
Routes of administration	Inhalation use

Dosage and administration details:

Placebo T.I.D.

Arm title	B200
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Arm description:

PR1

Arm type	Active comparator
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Investigational medicinal product name	PR1
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Capsule
Routes of administration	Inhalation use
Dosage and administration details: Budesonide 200µg T.I.D.	
Arm title	B800

Arm description:

B800/PR2

Arm type	Active comparator
Investigational medicinal product name	PR2
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Capsule
Routes of administration	Inhalation use

Dosage and administration details:

Budesonide 800µg T.I.D.

Notes:

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

Justification: We mixed up the order while entering the data. We entered the high altitude data prior to the baseline investigation data.

Number of subjects in period 2	Placebo	B200	B800
Started	17	16	17
Completed	17	16	17

Baseline characteristics

Reporting groups

Reporting group title	Placebo
Reporting group description: Placebo	
Reporting group title	B200
Reporting group description: PR1	
Reporting group title	B800
Reporting group description: B800/PR2	

Reporting group values	Placebo	B200	B800
Number of subjects	17	16	17
Age categorical			
Adults 18-65			
Units: Subjects			
In utero	0	0	0
Preterm newborn infants (gestational age < 37 wks)	0	0	0
Newborns (0-27 days)	0	0	0
Infants and toddlers (28 days-23 months)	0	0	0
Children (2-11 years)	0	0	0
Adolescents (12-17 years)	0	0	0
Adults (18-64 years)	17	16	17
From 65-84 years	0	0	0
85 years and over	0	0	0
Age continuous			
Units: years			
arithmetic mean	36	38	38
standard deviation	± 12	± 11	± 11
Gender categorical			
Units: Subjects			
Female	6	4	6
Male	11	12	11
VO2max			
Watt/kg			
Units: Subjects			
VO2max	17	16	17
AMS			
Acute Mountain Sickness			
Units: not applicable			
arithmetic mean			
standard deviation	±	±	±

Reporting group values	Total		
Number of subjects	50		

Age categorical			
Adults 18-65			
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)	50		
From 65-84 years	0		
85 years and over	0		
Age continuous			
Units: years			
arithmetic mean			
standard deviation	-		
Gender categorical			
Units: Subjects			
Female	16		
Male	34		
VO2max			
Watt/kg			
Units: Subjects			
VO2max	50		
AMS			
Acute Mountain Sickness			
Units: not applicable			
arithmetic mean			
standard deviation	-		

Subject analysis sets

Subject analysis set title	Placebo
Subject analysis set type	Full analysis
Subject analysis set description: Placebo	
Subject analysis set title	B200
Subject analysis set type	Full analysis
Subject analysis set description: Budesonide 200µg	
Subject analysis set title	B800
Subject analysis set type	Full analysis
Subject analysis set description: Budesonide 800µg	

Reporting group values	Placebo	B200	B800
Number of subjects	17	16	17
Age categorical			
Adults 18-65			
Units: Subjects			

In utero	0	0	0
Preterm newborn infants (gestational age < 37 wks)	0	0	0
Newborns (0-27 days)	0	0	0
Infants and toddlers (28 days-23 months)	0	0	0
Children (2-11 years)	0	0	0
Adolescents (12-17 years)	0	0	0
Adults (18-64 years)	17	16	17
From 65-84 years	0	0	0
85 years and over	0	0	0
Age continuous			
Units: years			
arithmetic mean	36	38	38
standard deviation	± 12	± 11	± 11
Gender categorical			
Units: Subjects			
Female	6	4	6
Male	11	12	11
VO2max			
Watt/kg			
Units: Subjects			
VO2max	17	16	17
AMS			
Acute Mountain Sickness			
Units: not applicable			
arithmetic mean	0.03	0.84	
standard deviation	± 0.14	± 0.89	±

End points

End points reporting groups

Reporting group title	Placebo
Reporting group description: -	
Reporting group title	B200
Reporting group description: Budesonide 200µg	
Reporting group title	B800
Reporting group description: Budesonide 800µg	
Reporting group title	Placebo
Reporting group description: Placebo	
Reporting group title	B200
Reporting group description: PR1	
Reporting group title	B800
Reporting group description: B800/PR2	
Subject analysis set title	Placebo
Subject analysis set type	Full analysis
Subject analysis set description: Placebo	
Subject analysis set title	B200
Subject analysis set type	Full analysis
Subject analysis set description: Budesonide 200µg	
Subject analysis set title	B800
Subject analysis set type	Full analysis
Subject analysis set description: Budesonide 800µg	

Primary: AMS - Incidence

End point title	AMS - Incidence
End point description:	
End point type	Primary
End point timeframe: during 3 days at high altitude	

End point values	Placebo	B200	B800	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	17	16	17	
Units: full numbers				
AMS positive	9	9	13	
AMS negative	8	7	4	

Statistical analyses

Statistical analysis title	Incidence AMS
Comparison groups	Placebo v B200 v B800
Number of subjects included in analysis	50
Analysis specification	Pre-specified
Analysis type	equivalence
P-value	< 0.05
Method	Chi-squared corrected

Adverse events

Adverse events information^[1]

Timeframe for reporting adverse events:

whole study duration

Assessment type Systematic

Dictionary used

Dictionary name MedDRA

Dictionary version 19.0

Reporting groups

Reporting group title Placebo

Reporting group description: -

Reporting group title B200

Reporting group description:

Budesonide 200µg

Reporting group title B800

Reporting group description:

Budesonide 800µg

Serious adverse events	Placebo	B200	B800
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 17 (0.00%)	0 / 16 (0.00%)	0 / 17 (0.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0

Frequency threshold for reporting non-serious adverse events: 1 %

Non-serious adverse events	Placebo	B200	B800
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 17 (0.00%)	0 / 16 (0.00%)	0 / 17 (0.00%)

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 events to report.

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

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/28890439>