Clinical trial results:
Placebo-Controlled Study of Mometasone Furoate Nasal Spray (MFNS) 200 mcg QD in the Treatment of Seasonal Allergic Rhinitis

Summary

EudraCT number	2014-004916-12
Trial protocol	Outside EU/EEA
Global end of trial date	20 July 2007

Results information

Result version number	v1 (current)
This version publication date	10 February 2016
First version publication date	15 July 2015

Trial information

Trial identification

Sponsor protocol code	P05106

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT00468312
WHO universal trial number (UTN)	-
Other trial identifiers	Merck Protocol Number: MK-0887-135, Merck Protocol Number: P05106

Notes:

Sponsors

Sponsor organisation name	Merck Sharp & Dohme Corp.
Sponsor organisation address	2000 Galloping Hill Road, Kenilworth, NJ, United States, 07033
Public contact	Clinical Trials Disclosure, Merck Sharp & Dohme Corp., ClinicalTrialsDisclosure@merck.com
Scientific contact	Clinical Trials Disclosure, Merck Sharp & Dohme Corp., ClinicalTrialsDisclosure@merck.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?	Yes

Notes:

Results analysis stage

Analysis stage	Final
Date of interim/final analysis	20 July 2007
Is this the analysis of the primary completion data?	Yes
Primary completion date	20 July 2007
Global end of trial reached?	Yes
Global end of trial date	20 July 2007
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

This study is designed to assess the efficacy of mometasone furoate nasal spray (MFNS) once daily compared with placebo in participants with seasonal allergic rhinitis (SAR) in reducing the total nasal symptom score (TNSS) and the total ocular symptom score (TOSS).

Protection of trial subjects:

This study was conducted in conformance with Good Clinical Practice standards and applicable country and/or local statutes and regulations regarding ethical committee review, informed consent, and the protection of human subjects participating in biomedical research.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	22 March 2007
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 States: 429
Worldwide total number of subjects	429
EEA total number of subjects	0

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)	1
Adolescents (12-17 years)	55
Adults (18-64 years)	365
From 65 to 84 years	8
85 years and over	0

Subject disposition

Recruitment

Recruitment details: -

Pre-assignment

Screening details:

Participants 12 years of age and older with at least a 2-year documented history of SAR which exacerbated during the study season of SAR were selected for this study.

Period 1

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

Arms

Are arms mutually exclusive?	Yes
Arm title	Mometasone Furoate Nasal Spray (MFNS)

Arm description:

MFNS 200 mcg (two sprays in each nostril) once daily in the morning. Each spray is equal to 50 mcg.

Arm type	Experimental
Investigational medicinal product name	mometasone furoate
Investigational medicinal product code	
Other name	Nasonex, MK-0887, SCH 032088
Pharmaceutical forms	Nasal spray
Routes of administration	Intranasal use

Dosage and administration details:

Two sprays in each nostril once daily in the morning

Arm title	Placebo

Arm description:

Two sprays in each nostril once daily in the morning

Arm type	Placebo
Investigational medicinal product name	Placebo
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Nasal spray
Routes of administration	Intranasal use

Dosage and administration details:

Two sprays in each nostril once daily in the morning

Number of subjects in period 1	Mometasone Furoate Nasal Spray (MFNS)	Placebo
Started	220	209
Completed	216	204
Not completed	4	5
Did not meet protocol eligibility	-	1

Adverse event, non-fatal	2	1
Protocol deviation	2	1
Lack of efficacy	-	1
Withdrawal by subject	-	1

Baseline characteristics

Reporting groups	
Reporting group title	Mometasone Furoate Nasal Spray (MFNS)
Reporting group description:	
MFNS 200 mcg (two sprays in each nostril) once daily in the morning. Each spray is equal to 50 mcg.	
Reporting group title	Placebo
Reporting group description:	
Two sprays in each nostril once daily in the morning	

Reporting group values	Mometasone Furoate Nasal Spray (MFNS)	Placebo	Total
Number of subjects	220	209	429
Age categorical Units: Subjects			
6 to <12 years	0	1	1
12 to <18 years	31	24	55
18 to <65 years	184	181	365
≥65 years	5	3	8
Gender categorical Units: Subjects			
Female	132	125	257
Male	88	84	172

End points

End points reporting groups

Reporting group title	Mometasone Furoate Nasal Spray (MFNS)
Reporting group description:	
MFNS 200 mcg (two sprays in each nostril) once daily in the morning. Each spray is equal to 50 mcg.	
Reporting group title	Placebo
Reporting group description:	
Two sprays in each nostril once daily in the morning	

Primary: Change from Baseline in average AM instantaneous (NOW) Total Nasal Symptom Score (TNSS) averaged over Days 2 to 15

End point title	Change from Baseline in average AM instantaneous (NOW) Total Nasal Symptom Score (TNSS) averaged over Days 2 to 15
End point description:	
TNSS was defined as the sum of the following four nasal symptoms: rhinorrhea, nasal congestion/stuffiness, nasal itching, and sneezing; each symptom scored on a scale of 0 = none, 1 = mild, 2 = moderate, and 3 = severe. The best possible score on this scale is 0 and the worst possible score on this scale is 12.	
End point type	Primary
End point timeframe:	
Baseline and Days 2 through 15	

End point values	Mometasone Furoate Nasal Spray (MFNS)	Placebo		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	220[1]	208[2]		
Units: Score on a scale				
least squares mean (standard deviation)				
Baseline TNSS	9.31 (± 1.6)	9.31 (± 1.6)		
Change from Baseline in TNSS	-2.54 (± 1.99)	-1.66 (± 1.99)		

Notes:

[1] - All randomized participants who took ≥1 study drug dose and were evaluable for this end point.

[2] - All randomized participants who took ≥1 study drug dose and were evaluable for this end point.

Statistical analyses

Statistical analysis title	Change in AM NOW TNSS: MFNS vs. Placebo
Statistical analysis description:	
Difference in Least Square (LS) means for average change from Baseline over Days 2 to 15 in AM NOW TNSS: MFNS 200 mcg vs. Placebo. LS means, pooled standard deviation, and 95% Confidence Intervals are obtained from an analysis of covariance (ANCOVA) model with treatment and site effect with baseline score as a covariate.	
Comparison groups	Placebo v Mometasone Furoate Nasal Spray (MFNS)

Number of subjects included in analysis	428
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.001
Method	ANCOVA
Confidence interval	
level	95 %
sides	2-sided
lower limit	-1.27
upper limit	-0.51

Primary: Change from Baseline in average AM instantaneous (NOW) Total Ocular Symptom Score (TOSS) averaged over Days 2 to 15

End point title	Change from Baseline in average AM instantaneous (NOW) Total Ocular Symptom Score (TOSS) averaged over Days 2 to 15

End point description:

TOSS was defined as the sum of the following three ocular symptoms: redness of eyes, itching/burning eyes, and tearing/watering eyes; each symptom scored on a scale of 0 = none, 1 = mild, 2 = moderate, and 3 = severe. The best possible score on this scale is 0 and the worst possible score on the scale is 9.

End point type	Primary

End point timeframe:

Baseline and Days 2 through 15

End point values	Mometasone Furoate Nasal Spray (MFNS)	Placebo		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	220[3]	208[4]		
Units: Score on a scale				
least squares mean (standard deviation)				
Baseline TOSS	6.78 (± 1.46)	6.74 (± 1.46)		
Change from Baseline in TOSS	-1.71 (± 1.6)	-1.37 (± 1.6)		

Notes:

[3] - All randomized participants who took ≥1 study drug dose and were evaluable for this end point.

[4] - All randomized participants who took ≥1 study drug dose and were evaluable for this end point.

Statistical analyses

Statistical analysis title	Change in AM NOW TOSS: MFNS vs. Placebo

Statistical analysis description:

Difference in Least Square (LS) means for average change from Baseline over Days 2 to 15 in AM NOW TOSS: MFNS 200 mcg vs. Placebo. LS means, pooled standard deviation, and 95% Confident Intervals are obtained from an analysis of covariance (ANCOVA) model with treatment and site effect with baseline score as a covariate.

Comparison groups	Mometasone Furoate Nasal Spray (MFNS) v Placebo

Number of subjects included in analysis	428
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.026
Method	ANCOVA
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.65
upper limit	-0.04

Secondary: Change from Baseline in AM NOW nasal congestion score averaged over Days 2 to 15

End point title	Change from Baseline in AM NOW nasal congestion score averaged over Days 2 to 15

End point description:

Nasal congestion was one of the symptoms measured in the TNSS and was scored on a scale of 0 = none, 1 = mild, 2 = moderate, and 3 = severe. The best possible score on this scale is 0 and the worst possible score on this scale is 3.

End point type	Secondary

End point timeframe:

Baseline and Days 2 through 15

End point values	Mometasone Furoate Nasal Spray (MFNS)	Placebo		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	220[5]	208[6]		
Units: Score on a scale				
least squares mean (standard deviation)				
Baseline Nasal Congestion Score	2.6 (± 0.38)	2.62 (± 0.38)		
Change from Baseline in Nasal Congestion Score	-0.59 (± 0.53)	-0.39 (± 0.53)		

Notes:

[5] - All randomized participants who took ≥1 study drug dose and were evaluable for this end point.

[6] - All randomized participants who took ≥1 study drug dose and were evaluable for this end point.

Statistical analyses

Statistical analysis title	Change in AM NOW Nasal Congestion Score

Statistical analysis description:

Difference in Least Square (LS) means for average change from Baseline over Days 2 to 15 in AM NOW Nasal Congestion Score: MFNS 200 mcg vs. Placebo. LS means, pooled standard deviation, and 95% Confidence Intervals are obtained from an analysis of covariance (ANCOVA) model with treatment and site effect with baseline score as a covariate.

Comparison groups	Mometasone Furoate Nasal Spray (MFNS) v Placebo

Number of subjects included in analysis	428
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.001
Method	ANCOVA
Confidence interval	
level	95 %
sides	2-sided
lower limit	-0.31
upper limit	-0.1

Secondary: Change from Baseline in Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) Total Score at Endpoint (Last Post Baseline Evaluation Carried Forward)

End point title	Change from Baseline in Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) Total Score at Endpoint (Last Post Baseline Evaluation Carried Forward)

End point description:

The RQLQ consisted of 28 items that fell into the following seven domains: activities, sleep, non-nose/eye symptoms, practical problems, nasal symptoms, eye symptoms, and emotional. Each of the items was scored from 0 = not troubled to 6 = extremely troubled, and the total of the seven domains was the primary focus of this quality of life evaluation. The best possible score on this scale is 0 and the worst possible score on this scale is 42. The Endpoint was the last post baseline evaluation carried forward and was Day 15 for the majority of the participants.The analysis population included subjects who were randomized to treatment, answered the RQL questionnaire both at baseline and post baseline visits and were at least 18 years of age.

End point type	Secondary

End point timeframe:

Baseline and Day 15

End point values	Mometasone Furoate Nasal Spray (MFNS)	Placebo		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	189[7]	182[8]		
Units: Score on a scale				
least squares mean (standard deviation)				
Baseline RQLQ Total Score	4.27 (± 1.01)	4.28 (± 1.01)		
Change from Baseline in RQLQ Total Score	-1.81 (± 1.36)	-1.08 (± 1.36)		

Notes:

[7] - The RQLQ tool is only validated in participants greater than 18 years of age.

[8] - The RQLQ tool is only validated in participants greater than 18 years of age.

Statistical analyses

Statistical analysis title	Change in RQLQ: MFNS vs. Placebo

Statistical analysis description:

Change in Least Square (LS) means for average change from Baseline over Days 2 to 15 in RQLQ total score: MFNS 200 mcg vs. Placebo. LS means, pooled standard deviation, and 95% Confidence Intervals are obtained from an analysis of covariance (ANCOVA) model with treatment and site effects with

baseline score as a covariate.

Comparison groups	Mometasone Furoate Nasal Spray (MFNS) v Placebo
Number of subjects included in analysis	371
Analysis specification	Pre-specified
Analysis type	superiority
P-value	< 0.001
Method	ANCOVA
Confidence interval	
level	95 %
sides	2-sided
lower limit	-1.01
upper limit	-0.45

Secondary: Change from Baseline in AM Peak Nasal Inspiratory Flow (PNIF) averaged over Days 2 to 15

End point title	Change from Baseline in AM Peak Nasal Inspiratory Flow (PNIF) averaged over Days 2 to 15

End point description:

Participants were to measure nasal airflow twice daily (in the morning prior to study drug dosing and in the evening) using their PNIF meter. The highest of 3 assessments was to be recorded in the electronic diary. The PNIF meter limits were between 30 and 370 liters/minute. Normal values range between 100 and 150 liters/minute. A positive change from Baseline correlates with improved nasal air flow.

End point type	Secondary

End point timeframe:

Baseline and Days 2 through 15

End point values	Mometasone Furoate Nasal Spray (MFNS)	Placebo		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	220[9]	208[10]		
Units: liters/minute				
least squares mean (standard deviation)				
Baseline PNIF	93.12 (± 41.3)	91.96 (± 41.3)		
Change from Baseline in PNIF	16.55 (± 36.9)	12.59 (± 36.9)		

Notes:

[9] - All randomized participants who took ≥1 study drug dose and were evaluable for this end point.

[10] - All randomized participants who took ≥1 study drug dose and were evaluable for this end point.

Statistical analyses

Statistical analysis title	Change in PNIF: MFNS vs. Placebo

Statistical analysis description:

Difference in Least Square (LS) means for average change from Baseline from Days 2 to 15 in PNIF: MFNS 200 mcg vs. Placebo. LS means, pooled standard deviation, and 95% Confidence Intervals are obtained from an analysis of covariance (ANCOVA) model with treatment and site effect with baseline score as a covariate.

Comparison groups	Mometasone Furoate Nasal Spray (MFNS) v Placebo

Number of subjects included in analysis	428
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.269
Method	ANCOVA
Confidence interval	
level	95 %
sides	2-sided
lower limit	-3.07
upper limit	10.98

Adverse events

Adverse events information[1]

Timeframe for reporting adverse events:

Up to 45 days (including up to 30 days following last dose for serious adverse events)

Adverse event reporting additional description:

The safety population consisted of all randomized participants who received ≥1 dose of study drug.

Assessment type	Systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	10.0

Reporting groups

Reporting group title	Mometasone Furoate Nasal Spray (MFNS)

Reporting group description:

MFNS 200 mcg (two sprays in each nostril) once daily in the morning. Each spray is equal to 50 mcg.

Reporting group title	Placebo

Reporting group description:

Two sprays in each nostril once daily in the morning

Serious adverse events	Mometasone Furoate Nasal Spray (MFNS)	Placebo	
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 220 (0.00%)	0 / 209 (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	Mometasone Furoate Nasal Spray (MFNS)	Placebo	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 220 (0.00%)	0 / 209 (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 non-serious adverse events exceeded the 5% threshold for any reporting group.

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
08 March 2007	Primary reason for amendment was to incorporate revisions to primary endpoint from assessing total symptom score (TSS) to assessing total nasal symptom score (TNSS) and total ocular symptom score (TOSS).
28 May 2007	Primary reason for amendment was to add secondary objectives to assess the efficacy of MFNS in improving congestion, the Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ), and AM peak nasal inspiratory flow.

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported