

**Clinical trial results:****A phase II baseline versus treatment study to determine the efficacy of raltegravir (ISENTRESS) in preventing progression of relapsing remitting multiple sclerosis as determined by gadolinium-enhanced MRI****Summary**

EudraCT number	2012-004847-61
Trial protocol	GB
Global end of trial date	10 June 2015

**Results information**

Result version number	v1 (current)
This version publication date	25 June 2016
First version publication date	25 June 2016
Summary attachment (see zip file)	INSPIRE end of study report (Inspire End of Study Report May 26.doc)

**Trial information****Trial identification**

Sponsor protocol code	008717QM
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**Additional study identifiers**

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT02104661
WHO universal trial number (UTN)	-

Notes:

**Sponsors**

Sponsor organisation name	Queen Mary University of London
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Notes:

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**Paediatric regulatory details**

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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:

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**Results analysis stage**

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Analysis stage	Final
Date of interim/final analysis	12 October 2015
Is this the analysis of the primary completion data?	Yes
Primary completion date	10 September 2014
Global end of trial reached?	Yes
Global end of trial date	10 June 2015
Was the trial ended prematurely?	No

Notes:

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**General information about the trial**

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Main objective of the trial:

The primary objective is to assess whether treatment with raltegravir in patients with active MS has the effect of reducing the total number or rate of development of new or recurrent Gd-enhanced lesions on brain MRI over the period of treatment, compared to baseline.

Protection of trial subjects:

All participants provided written informed consent before any study specific assessments were performed. Participants were given ample time for consideration before consenting to take part. Participants were made aware of their right to withdraw from the study at any time for any reason. The investigator also had the right to withdraw participants from the study. The total time on the study for enrolled participants was six months, which was considered to be an ethically acceptable timeframe for patients who are in the early stages of RRMS as this is the time limit before they meet Association of British Neurologists (ABN) criteria for currently licensed disease modifying treatment.

Background therapy:

Not applicable

Evidence for comparator:

Not applicable for this open label single arm study

Actual start date of recruitment	01 February 2013
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

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**Population of trial subjects**

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**Subjects enrolled per country**

Country: Number of subjects enrolled	United Kingdom: 31
Worldwide total number of subjects	31
EEA total number of subjects	31

Notes:

<b>Subjects enrolled per age group</b>	
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:

All participants were recruited at the Clinical Research Centre of the Royal London Hospital and were drawn prevalently from the catchment area of greater London. Participants were also referred to the site by six Patient Identification Centres (PICs). Recruitment into the study started in May 2013. The last patient was screened in June 2014.

### Pre-assignment

Screening details:

A total of 31 participants were screened, of these 8 had no evidence of Gd enhancing lesions in their baseline MRI and were screen failed. Of the 23 participants who were recruited into the study 3 were withdrawn prior to starting the treatment phase; one at the request of the participant and the remaining two due to MS relapse.

### Pre-assignment period milestones

Number of subjects started	31
Intermediate milestone: Number of subjects	Observation period: 23
Number of subjects completed	20

### Pre-assignment subject non-completion reasons

Reason: Number of subjects	No gd-enhancing lesions in MRI: 8
Reason: Number of subjects	MS relapse: 2
Reason: Number of subjects	Consent withdrawn by subject: 1

### Period 1

Period 1 title	Treatment period (overall period)
Is this the baseline period?	Yes
Allocation method	Not applicable
Blinding used	Not blinded

Blinding implementation details:

Not applicable for this open label single arm trial.

### Arms

Arm title	Treatment
Arm description:	
Single arm open label	
Arm type	Experimental
Investigational medicinal product name	Raltegravir
Investigational medicinal product code	
Other name	Isentress
Pharmaceutical forms	Tablet
Routes of administration	Oral use

Dosage and administration details:

400mg twice a day administrated as the potassium salt in a film coated tablet

<b>Number of subjects in period 1</b> <sup>[1]</sup>	Treatment
Started	20
Completed	20

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Notes:

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

Justification: Of the 31 subjects screened, 20 received treatment.

## Baseline characteristics

### Reporting groups

Reporting group title	Treatment period
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Reporting group description: -

Reporting group values	Treatment period	Total	
Number of subjects	20	20	
Age categorical			
Patients eligible for the study were between 18-55 years of age. PP mean age baseline 41.62yrs (31.15-52.99); ITT mean age baseline 40.73yrs (31.15-52.99).			
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)	0	0	
From 65-84 years	0	0	
85 years and over	0	0	
Adults (18-55 years)	20	20	
Age continuous			
PP Mean age baseline 41.62yrs (31.15-52.99) ITT Mean age baseline 40.73yrs (31.15-52.99)			
Units: years			
arithmetic mean	40.73		
standard deviation	± 6.98	-	
Gender categorical			
PP 12 females (75%), 4 males (25%). ITT 14 females (70%), 6 males (30%).			
Units: Subjects			
Female	14	14	
Male	6	6	
Height			
PP mean height 168.91cm (156.0-180.0) ITT mean height 169.04cm (156.0-183.0) There are only reported height values for n=18.			
Units: cm			
arithmetic mean			
standard deviation	±	-	
Weight			
PP n=14; mean weight 77.9; (51.9-108.3) ITT n=18; mean weight 78.73; (51.9-109.7) Weight was not recorded for 2 subjects.			
Units: Kg			
arithmetic mean			
standard deviation	±	-	
Baseline EDSS			
PP n=16; mean EDSS 2.25; (0.0-3.5)			

ITT n=20; mean EDSS 2.4; (0.0-4.0)			
Units: score			
arithmetic mean			
standard deviation	±	-	
Number of relapses in the past year			
PP n= 16; mean 1.44; sd= 0.63 (1.0-3.0)			
ITT n= 20; mean 1.50; sd= 0.61 (0.0-4.0)			
Units: number of relapses			
arithmetic mean			
standard deviation	±	-	

### Subject analysis sets

Subject analysis set title	Per protocol
Subject analysis set type	Per protocol

#### Subject analysis set description:

4 subjects were excluded from per protocol (PP) analysis due to concomitant medications (2 has steroids/immunosuppressants at screening and 2 had proton pump inhibitors during the study). PP 12 females (75%), 4 males (25%). Mean age baseline 41.62yrs (31.15-52.99); mean height 168.91cm (156.0-180.0); mean weight 77.9Kg (51.9-108.3); mean EDSS 2.25 (0.0-3.5); mean no. relapses past year 1.44 (1-3)

Subject analysis set title	ITT
Subject analysis set type	Intention-to-treat

#### Subject analysis set description:

All 20 subjects who completed the study were included in the ITT analysis. ITT 14 females (70%), 6 males (30%). Mean age baseline 40.73yrs (31.15-52.99); mean height 169.04cm (156.0-183.0); mean weight 78.73Kg (51.9-109.7); mean EDSS 2.4 (0.0-4.0); mean no. relapses past year 1.5 (1-3)

Subject analysis set title	Flexible per protocol
Subject analysis set type	Per protocol

#### Subject analysis set description:

Flexible PP sample n=18. Two subjects were excluded for all visits, one subject had visits seven and eight excluded, and one subject had just visit eight excluded.

Reporting group values	Per protocol	ITT	Flexible per protocol
Number of subjects	16	20	18
Age categorical			
Patients eligible for the study were between 18-55 years of age. PP mean age baseline 41.62yrs (31.15-52.99); ITT mean age baseline 40.73yrs (31.15-52.99).			
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)	0	0	0
From 65-84 years	0	0	0
85 years and over	0	0	0
Adults (18-55 years)	16	20	18
Age continuous			
PP Mean age baseline 41.62yrs (31.15-52.99)			
ITT Mean age baseline 40.73yrs (31.15-52.99)			

Units: years			
arithmetic mean	41.62	40.73	
standard deviation	± 7.49	± 6.98	±
Gender categorical			
PP 12 females (75%), 4 males (25%). ITT 14 females (70%), 6 males (30%).			
Units: Subjects			
Female	12	14	
Male	4	6	
Height			
PP mean height 168.91cm (156.0-180.0) ITT mean height 169.04cm (156.0-183.0) There are only reported height values for n=18.			
Units: cm			
arithmetic mean	168.91	169.04	
standard deviation	± 8	± 8.61	±
Weight			
PP n=14; mean weight 77.9; (51.9-108.3) ITT n=18; mean weight 78.73; (51.9-109.7) Weight was not recorded for 2 subjects.			
Units: Kg			
arithmetic mean	77.9	78.73	
standard deviation	± 18.45	± 19.04	±
Baseline EDSS			
PP n=16; mean EDSS 2.25; (0.0-3.5) ITT n=20; mean EDSS 2.4; (0.0-4.0)			
Units: score			
arithmetic mean	2.25	2.4	
standard deviation	± 1	± 1.03	±
Number of relapses in the past year			
PP n= 16; mean 1.44; sd= 0.63 (1.0-3.0) ITT n= 20; mean 1.50; sd= 0.61 (0.0-4.0)			
Units: number of relapses			
arithmetic mean	1.44	1.5	
standard deviation	± 0.63	± 0.61	±

## End points

### End points reporting groups

Reporting group title	Treatment
Reporting group description:	
Single arm open label	
Subject analysis set title	Per protocol
Subject analysis set type	Per protocol
Subject analysis set description:	
4 subjects were excluded from per protocol (PP) analysis due to concomitant medications (2 has steroids/immunosuppressants at screening and 2 had proton pump inhibitors during the study). PP 12 females (75%), 4 males (25%). Mean age baseline 41.62yrs (31.15-52.99); mean height 168.91cm (156.0-180.0); mean weight 77.9Kg (51.9-108.3); mean EDSS 2.25 (0.0-3.5); mean no. relapses past year 1.44 (1-3)	
Subject analysis set title	ITT
Subject analysis set type	Intention-to-treat
Subject analysis set description:	
All 20 subjects who completed the study were included in the ITT analysis. ITT 14 females (70%), 6 males (30%). Mean age baseline 40.73yrs (31.15-52.99); mean height 169.04cm (156.0-183.0); mean weight 78.73Kg (51.9-109.7); mean EDSS 2.4 (0.0-4.0); mean no. relapses past year 1.5 (1-3)	
Subject analysis set title	Flexible per protocol
Subject analysis set type	Per protocol
Subject analysis set description:	
Flexible PP sample n=18. Two subjects were excluded for all visits, one subject had visits seven and eight excluded, and one subject had just visit eight excluded.	

### Primary: Total T1 Gd-enhancing lesions in brain MRI scans

End point title	Total T1 Gd-enhancing lesions in brain MRI scans
End point description:	
Within-patient average no. new Gd-enh lesions observed on serial T1-weighted brain MRI scans. Counts of new or recurrent Gd-enh lesions appearing on brain T1-weighted MRI. These counts are available at each of visits 2 to 8 in the majority of patients.	
ITT n=20	
'flexible' PP n=18. 2 patients were excluded for all visits, 1 patient had just visits 7 and 8 excluded, and 1 had visit 8 excluded.	
PP n=16, 4 patients had all their visits excluded.	
There were missing counts for 1 patient at visit 3, 1 at visit 5, and missing counts for 2 at visit 6.	
Lesion outcomes provide no statistical evidence consistent with an effect of raltegravir. This is not because of lack of power: changes were not only non-significant statistically, but also generally clinically small (including both small reductions and small increases). For the most substantial change, a reduction in persisting T1 Gd lesions in the PP sample, the decrease before intervention was greater than that afterwards	
End point type	Primary
End point timeframe:	
Visit two (enrolment) is excluded from analysis, which covers visits three, four and five "before-", and six, seven and eight "after-" medication was first dispensed.	

End point values	Treatment	Per protocol	ITT	Flexible per protocol
Subject group type	Reporting group	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	20	16	20	18
Units: Number and ratio of lesions				
arithmetic mean (full range (min-max))				
Number of T1 gd-enhancing lesions before	8.65 (0 to 32)	7.5 (0 to 32)	8.65 (0 to 32)	7.28 (0 to 32)
Number of T1 Gd-enhancing lesions after	9.05 (0 to 31)	7 (0 to 31)	9.05 (0 to 31)	6.83 (0 to 31)
Number of T1 Gd-enh lesions within patient change	0.12 (-2.67 to 3.33)	-0.18 (-2.67 to 2.33)	0.12 (-2.67 to 3.33)	-0.16 (-2.67 to 2.33)
Ratio of T1 Gd-Enh lesions within patient change	0.88 (0.15 to 3.33)	0.81 (0.15 to 3.33)	0.88 (0.15 to 3.33)	0.83 (0.15 to 3.33)

## Statistical analyses

Statistical analysis title	Mixed effect Poisson regression model
Statistical analysis description: A mixed effect Poisson regression model with before/after indicator, adjusting for the (log) enrolment visit value	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other <sup>[1]</sup>
P-value	= 0.681 <sup>[2]</sup>
Method	Regression, Linear
Parameter estimate	Rate ratio
Point estimate	1.04
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.85
upper limit	1.29

Notes:

[1] - The analyses compare the mean rate after vs before. The potential gradients of change over the three-month before vs after periods were also compared. For all three samples above there was no significant change in the after vs before gradients of monthly lesion accrual: P-values were respectively P=0.659, 0.429 and 0.463 for ITT, flexible PP and PP.

[2] - Est rate ratio after vs before: 1.04 (95% CI .85, 1.29); represents 4% non-significant incr lesions/month in after period, weighted ITT rate ratio 1.03

Simple non-parametric Wilcoxon sign rank test within-patient changes non-significant, P=0.646

Statistical analysis title	Mixed effect Poisson regression model
Statistical analysis description: A mixed effect Poisson regression model with before/after indicator, adjusting for the (log) enrolment visit value	
Comparison groups	Treatment v Flexible per protocol

Number of subjects included in analysis	38
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.714 <sup>[3]</sup>
Method	Regression, Linear
Parameter estimate	rate ratio
Point estimate	0.95
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.75
upper limit	1.22

Notes:

[3] - 5% non-significant decrease in rate. This is in close agreement with the summary weighted rate ratio of 0.92. The p-value from the simple non-parametric Wilcoxon sign rank test of changes is non-significant, P=0.183.

<b>Statistical analysis title</b>	Mixed effect Poisson regression model
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Statistical analysis description:

A mixed effect Poisson regression model with before/after indicator, adjusting for the (log) enrolment visit value

Comparison groups	Treatment v Per protocol
Number of subjects included in analysis	36
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.577 <sup>[4]</sup>
Method	Regression, Linear
Parameter estimate	rate ratio
Point estimate	0.93
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.72
upper limit	1.2

Notes:

[4] - Non-significant 7% decrease. This is similar to the summary weighted rate ratio of 0.92. The p-value from the simple non-parametric Wilcoxon sign rank test of changes is also non-significant, P=0.197.

### **Primary: Persisting T1 Gd-enhancing brain MRI lesions**

End point title	Persisting T1 Gd-enhancing brain MRI lesions
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End point description:

End point type	Primary
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End point timeframe:

Visits 3, 4 and 5 (before) and 6, 7 and 8 (after medication was first dispensed).

<b>End point values</b>	Treatment	Per protocol	ITT	
Subject group type	Reporting group	Subject analysis set	Subject analysis set	
Number of subjects analysed	20	16	20	
Units: Change in gradient of rate ratio				
arithmetic mean (full range (min-max))				
Monthly rate before	1.46 (0 to 7.67)	1.53 (0 to 7.67)	1.46 (0 to 7.67)	
Monthly rate after	1.35 (0 to 5.67)	1.19 (0 to 5.67)	1.35 (0 to 5.67)	
Within patient change in rate	-0.11 (-2 to 1.67)	-0.34 (-2 to 0.67)	-0.11 (-2 to 1.67)	

## Statistical analyses

<b>Statistical analysis title</b>	Poisson regression
Statistical analysis description: A mixed effect Poisson regression model with before/after indicator.	
Comparison groups	Treatment v Per protocol
Number of subjects included in analysis	36
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.16 <sup>[5]</sup>
Method	Regression, Linear
Parameter estimate	Slope
Point estimate	0.78
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.55
upper limit	1.1

Notes:

[5] - The rate ratio was estimated as 0.78 (95% CI:0.55, 1.10) P=0.160, a non-significant reduction. There was no significant change in gradient in the PP (0.762). In this PP sample the rate of reduction after was slightly lower than that before.

<b>Statistical analysis title</b>	Poisson regression
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.652 <sup>[6]</sup>
Method	Regression, Linear
Parameter estimate	Slope
Point estimate	0.93
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.69
upper limit	1.26

Notes:

[6] - The rate ratio was estimated as 0.93 (95% CI .69, 1.26), P=0.652, a slight and non-significant reduction in persisting lesions.

### Primary: New T1 Gd enhancing brain MRI lesions

End point title | New T1 Gd enhancing brain MRI lesions

End point description:

Rates in each 3-months period.

End point type | Primary

End point timeframe:

Before (visits 3, 4, 5) vs After (visits 6, 7, 8).

End point values	Treatment	Per protocol	ITT	
Subject group type	Reporting group	Subject analysis set	Subject analysis set	
Number of subjects analysed	20	16	20	
Units: Monthly rate of new lesions				
arithmetic mean (full range (min-max))				
Monthly rate before	1.46 (0 to 7.67)	1.53 (0 to 7.67)	1.46 (0 to 7.67)	
Monthly rate after	1.35 (0 to 5.67)	1.19 (0 to 5.67)	1.35 (0 to 5.67)	
Within patient change in monthly rate	-0.11 (-2 to 1.67)	-0.34 (-2 to 0.67)	-0.11 (-2 to 1.67)	

### Statistical analyses

Statistical analysis title | Poisson regression model

Statistical analysis description:

A mixed effect Poisson regression model with before/after indicator estimates the rate ratio after vs before as 1.16 (95% CI 0.87, 1.55), P=0.314; this represents a slight and non-significant increase in new lesions per month in the 'after' period. The above analyses compare the mean rate after vs before. The gradients of change over the three-month before vs after periods were also compared.

Comparison groups | Treatment v Per protocol

Number of subjects included in analysis | 36

Analysis specification | Pre-specified

Analysis type | other<sup>[7]</sup>

P-value | = 0.456

Method | Regression, Linear

Notes:

[7] - There was no significant change in the after vs before gradients of monthly lesion accrual in the PP (P=0.137).

Statistical analysis title | Poisson regression model

Statistical analysis description:

A mixed effect Poisson regression model with before/after indicator estimates the rate ratio after vs before as 1.16 (95% CI 0.87, 1.55), P=0.314; this represents a slight and non-significant increase in new lesions per month in the 'after' period. This analysis compares the mean rate after vs before. The gradients of change over the three-month before vs after periods were also compared.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.314 [8]
Method	Regression, Linear
Parameter estimate	Slope
Point estimate	1.16
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.87
upper limit	1.55

Notes:

[8] - There was no significant change in the after vs before gradients of monthly lesion accrual in the ITT (P=0.562) analysis.

### Secondary: New or enlarging T2 weighted lesions on brain MRI

End point title	New or enlarging T2 weighted lesions on brain MRI
End point description:	
For T2 lesions (where the only 'after' observation is visit 8, so no comparison is possible for the two 'flexible PP' patients), only ITT and PP are given. Within-patient ratios averaged on log scale before back transforming, substituting 0.1 for zero counts. Weighted mean ratios pooled on log scale by weighting for lesion counts.	
End point type	Secondary
End point timeframe:	
Counts of new or enlarging T2-weighted lesions at visits five (before) and eight (after).	

End point values	Treatment	Per protocol	ITT	
Subject group type	Reporting group	Subject analysis set	Subject analysis set	
Number of subjects analysed	20	16	20	
Units: Number and ratio of lesions				
arithmetic mean (full range (min-max))				
Number of T2 lesions before	4.45 (0 to 17)	3.13 (0 to 9)	4.45 (0 to 17)	
Number of T2 lesions after	4.65 (0 to 20)	3.31 (0 to 13)	4.65 (0 to 20)	
Within patient T2 lesions count change	0.2 (-4 to 5)	0.19 (-4 to 5)	0.2 (-4 to 5)	
Within patient T2 lesions count ratio	1.47 (0.2 to 10)	1.64 (0.2 to 10)	1.47 (0.2 to 10)	

### Statistical analyses

Statistical analysis title	Wilcoxon sign rank test
Comparison groups	Treatment v Per protocol

Number of subjects included in analysis	36
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.462 [9]
Method	Wilcoxon (Mann-Whitney)

Notes:

[9] - Non-significant: Wilcoxon sign rank test of the within-patient changes was P= 0.462 for PP analysis.

<b>Statistical analysis title</b>	Wilcoxon sign rank test
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.472 [10]
Method	Wilcoxon (Mann-Whitney)

Notes:

[10] - Non-significant: Wilcoxon sign rank test of the within-patient changes was P=0.472 for ITT analysis.

### Secondary: Inflammatory markers

End point title	Inflammatory markers
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End point description:

Statistical analysis performed on three inflammatory markers:

Interleukin-8 (IL-8), or chemokine (C-X-C motif) ligand 8, CXCL8, is a chemokine produced by macrophages and other cell types. IL-8 secretion is increased by oxidant stress, which thereby cause the recruitment of inflammatory cells and induces a further increase in oxidant stress mediators, making it a key parameter in localized inflammation. Reported in pg/mL Unit.

Serum CD163 (a soluble form of the receptor exists in plasma, commonly denoted sCD163. It is generated by ectodomain shedding of the membrane bound receptor. sCD163 is upregulated in a large range of inflammatory diseases). Reported in ng/mL Unit.

Human C-reactive protein (HCRP), CRP is used mainly as a marker of inflammation. For HCRP, three measurements above the measureable threshold were assigned values of 10000 ng/ml. The largest measurable HCRP value in the dataset is 9492.25. Reported in ng/mL Unit.

End point type	Secondary
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End point timeframe:

Changes in mean at visits 3, 4, and 5 (before) and 6, 7, and 8 (after).

End point values	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	20		
Units: Changes in mean after - before arithmetic mean (standard deviation)				
IL-8	0.82 (± 2.12)	0.82 (± 2.12)		
CD163	18.67 (± 38.18)	18.67 (± 38.18)		
HCRP	535.82 (± 1244)	535.82 (± 1244)		

## Statistical analyses

<b>Statistical analysis title</b>	IL-8 One sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.1 [11]
Method	One sample t-test

Notes:

[11] - Non significant

<b>Statistical analysis title</b>	IL-8 Mixed model
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.47 [12]
Method	Mixed models analysis

Notes:

[12] - Non significant

<b>Statistical analysis title</b>	IL-8 Change in gradient
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.193 [13]
Method	Change in gradient

Notes:

[13] - Non significant

<b>Statistical analysis title</b>	CD163 one sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.041 <sup>[14]</sup>
Method	One sample t-test

Notes:

[14] - Significant decline changes to a significant positive gradient. The gradient change is significant in both ITT and PP.

<b>Statistical analysis title</b>	CD163 Mixed model
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.04 <sup>[15]</sup>
Method	Mixed models analysis

Notes:

[15] - Significant decline changes to a significant positive gradient. The gradient change is significant in both ITT and PP.

<b>Statistical analysis title</b>	CD163 Change in gradient
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.018 <sup>[16]</sup>
Method	Change in gradient

Notes:

[16] - Significant.

<b>Statistical analysis title</b>	HCRP one sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.069 <sup>[17]</sup>
Method	One sample t-test

Notes:

[17] - Significant overall increase not credibly attributable to intervention, since the gradient before, though non-significant, is too similar to the gradient after intervention.

<b>Statistical analysis title</b>	HCRP Mixed model
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.04 [18]
Method	Mixed models analysis

Notes:

[18] - Significant overall increase not credibly attributable to intervention, since the gradient before, though non-significant, is too similar to the gradient after intervention

<b>Statistical analysis title</b>	HCRP Change in gradient
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.944 [19]
Method	Change in gradient

Notes:

[19] - Non significant

## Secondary: Retroviral activity

End point title	Retroviral activity
End point description: To date, there has been no definitive evidence to link HERVs as the cause of immune-mediated disease; however, HERV elements have been found in sera of people with a range of diseases such as type 1 diabetes, rheumatoid arthritis and SLE but not in control populations. The evidence suggesting a postulated link between HERVs and MS has been accumulating. evidence is summarized to demonstrate that HERV-H and HERV-W are epidemiologically linked to patients with relapsing remitting MS. Further evidence was recently published by Perron et al. (4) that also links MS to a HERV which Perron calls multiple sclerosis associated retroviral element (MSRV). Raltegravir effect in relation to MS is not known, it may act by inhibiting HERVs, possibly in a similar mode of action that Raltegravir inhibits HIV replication.	
End point type	Secondary
End point timeframe: Changes in mean after - before	

<b>End point values</b>	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	20 <sup>[20]</sup>		
Units: Changes in mean after - before/ dim-less				
arithmetic mean (standard deviation)				
MSRV_a	-0.01 (± 0.06)	-0.01 (± 0.06)		
MSRV_b	-0.01 (± 0.08)	-0.01 (± 0.08)		
HERV_c	0 (± 0.09)	0 (± 0.09)		
HERV_d	0 (± 0.07)	0 (± 0.07)		
HERV_e	0.01 (± 0.09)	0.01 (± 0.09)		
HERV_f	0.01 (± 0.04)	0.01 (± 0.04)		
HERV_W_a	-0.05 (± 0.07)	-0.05 (± 0.07)		
HERV_H_b	0.03 (± 0.13)	0.03 (± 0.13)		
HERV_H_c	0.03 (± 0.1)	0.03 (± 0.1)		
HERV_H_d	0.05 (± 0.14)	0.05 (± 0.14)		
HERV_W_e	0 (± 0.09)	0 (± 0.09)		
HERV_W_f	0.02 (± 0.19)	0.02 (± 0.19)		
PROP_B_g	0.46 (± 1.37)	0.46 (± 1.37)		
PROP_mon_h	-1.98 (± 4.31)	-1.98 (± 4.31)		
HERV_W_i	-0.01 (± 0.06)	-0.01 (± 0.06)		
HERV_H_j	0.12 (± 0.05)	0.12 (± 0.05)		
HERV_H_k	0.03 (± 0.09)	0.03 (± 0.09)		
HERV_H_l	0.02 (± 0.14)	0.02 (± 0.14)		
HERV_W_m	-0.03 (± 0.06)	-0.03 (± 0.06)		
HERV_W_n	0.04 (± 0.12)	0.04 (± 0.12)		

Notes:

[20] - HERV\_W\_a; HERV\_W\_m; HERV\_W\_n n=18  
HERV\_H\_b; HERV\_H\_c; HERV\_H\_k n=17  
HERV\_W\_i n=13  
HERV\_H\_j n=15

### Statistical analyses

<b>Statistical analysis title</b>	One sample t-test MSRV_a
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.551 <sup>[21]</sup>
Method	One sample t-test

Notes:

[21] - Non significant.

<b>Statistical analysis title</b>	One sample t-test MSRV_b
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.484 [22]
Method	One sample t-test

Notes:

[22] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_c
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.835 [23]
Method	One sample t-test

Notes:

[23] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_d
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.928
Method	One sample t-test

<b>Statistical analysis title</b>	One sample t-test HERV_e
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.563 [24]
Method	One sample t-test

Notes:

[24] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_f
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing

whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.408 [25]
Method	One sample t-test

Notes:

[25] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_W_a
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.012 [26]
Method	One sample t-test

Notes:

[26] - There is a significant drop in mean from before to after; however, there is a negative gradient of decline throughout the trial period. Therefore the after vs before drop cannot reasonably be attributed to the intervention.

<b>Statistical analysis title</b>	One sample t-test HERV_H_b
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.372 [27]
Method	One sample t-test

Notes:

[27] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_H_c
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.177 [28]
Method	One sample t-test

Notes:

[28] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_H_d
Statistical analysis description:	
One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.113 <sup>[29]</sup>
Method	One sample t-test
Notes:	
[29] - Non significant.	

<b>Statistical analysis title</b>	One sample t-test HERV_W_e
Statistical analysis description:	
One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.907 <sup>[30]</sup>
Method	One sample t-test
Notes:	
[30] - Non significant.	

<b>Statistical analysis title</b>	One sample t-test HERV_W_f
Statistical analysis description:	
One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.632 <sup>[31]</sup>
Method	One sample t-test
Notes:	
[31] - Non significant.	

<b>Statistical analysis title</b>	One sample t-test PROP_B_g
Statistical analysis description:	
One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.148 <sup>[32]</sup>
Method	One sample t-test

Notes:

[32] - Non significant.

<b>Statistical analysis title</b>	One sample t-test PROP_mon_h
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.053
Method	One sample t-test

<b>Statistical analysis title</b>	One sample t-test HERV_W_i
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.561 [33]
Method	One sample t-test

Notes:

[33] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_H_j
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.029 [34]
Method	One sample t-test

Notes:

[34] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_H_k
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT

Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.266 <sup>[35]</sup>
Method	One sample t-test

Notes:

[35] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_H_I
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.522 <sup>[36]</sup>
Method	One sample t-test

Notes:

[36] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_W_m
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.035 <sup>[37]</sup>
Method	One sample t-test

Notes:

[37] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HERV_W_n
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.158 <sup>[38]</sup>
Method	One sample t-test

Notes:

[38] - Non significant.

<b>Statistical analysis title</b>	Mixed model MSRV_a
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear

mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.364 [39]
Method	Mixed models analysis

Notes:

[39] - Non significant.

<b>Statistical analysis title</b>	Mixed model MSRV_b
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.433 [40]
Method	Mixed models analysis

Notes:

[40] - Non significant.

<b>Statistical analysis title</b>	Mixed model HERV_c
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.775 [41]
Method	Mixed models analysis

Notes:

[41] - Non significant.

<b>Statistical analysis title</b>	Mixed model HERV_d
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.609 [42]
Method	Mixed models analysis

Notes:

[42] - Non significant.

<b>Statistical analysis title</b>	Mixed model HERV_e
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.781 [43]
Method	Mixed models analysis

Notes:

[43] - Non significant.

<b>Statistical analysis title</b>	Mixed model HERV_f
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.324 [44]
Method	Mixed models analysis

Notes:

[44] - Non significant.

<b>Statistical analysis title</b>	Mixed model HERV_W_a
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.008
Method	Mixed models analysis

<b>Statistical analysis title</b>	Mixed model HERV_H_b
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.307 [45]
Method	Mixed models analysis

Notes:

[45] - Non significant.

<b>Statistical analysis title</b>	Mixed model HERV_H_c
Statistical analysis description:	
Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.212 <sup>[46]</sup>
Method	Mixed models analysis
Notes:	
[46] - Non significant.	

<b>Statistical analysis title</b>	Mixed model HERV_H_d
Statistical analysis description:	
Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.203 <sup>[47]</sup>
Method	Mixed models analysis
Notes:	
[47] - Non significant.	

<b>Statistical analysis title</b>	Mixed model HERV_W_e
Statistical analysis description:	
Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.235 <sup>[48]</sup>
Method	Change in gradient
Notes:	
[48] - Non significant.	

<b>Statistical analysis title</b>	Mixed model HERV_W_f
Statistical analysis description:	
Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.627 <sup>[49]</sup>
Method	Mixed models analysis

Notes:

[49] - Non significant.

<b>Statistical analysis title</b>	Mixed model PROP_B_g
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.298 <sup>[50]</sup>
Method	Mixed models analysis

Notes:

[50] - Non significant.

<b>Statistical analysis title</b>	Mixed model PROP_mon_h
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.16 <sup>[51]</sup>
Method	Mixed models analysis

Notes:

[51] - Non significant.

<b>Statistical analysis title</b>	Mixed model HERV_W_i
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.93 <sup>[52]</sup>
Method	Mixed models analysis

Notes:

[52] - Non significant.

<b>Statistical analysis title</b>	Mixed model HERV_H_j
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT

Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.008
Method	Mixed models analysis

<b>Statistical analysis title</b>	Mixed model HERV_H_k
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.642
Method	Mixed models analysis

<b>Statistical analysis title</b>	Mixed model HERV_H_l
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.807
Method	Mixed models analysis

<b>Statistical analysis title</b>	Mixed model HERV_W_m
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.005
Method	Mixed models analysis

<b>Statistical analysis title</b>	Mixed model HERV_W_n
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear

mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.259 [53]
Method	Mixed models analysis

Notes:

[53] - Non significant.

<b>Statistical analysis title</b>	Change in gradient MSRV_a
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.488 [54]
Method	Change in gradient

Notes:

[54] - Non significant.

<b>Statistical analysis title</b>	Change in gradient MSRV_b
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.691 [55]
Method	Change in gradient

Notes:

[55] - Non significant.

<b>Statistical analysis title</b>	Change in gradient HERV_c
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.172 <sup>[56]</sup>
Method	Mixed models analysis

Notes:

[56] - Non significant.

<b>Statistical analysis title</b>	Change in gradient HERV_d
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.802 <sup>[57]</sup>
Method	Change in gradient

Notes:

[57] - Non significant.

<b>Statistical analysis title</b>	Change in gradient HERV_e
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.621 <sup>[58]</sup>
Method	Change in gradient

Notes:

[58] - Non significant.

<b>Statistical analysis title</b>	Change in gradient HERV_f
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.533 <sup>[59]</sup>
Method	Change in gradient

Notes:

[59] - Non significant.

<b>Statistical analysis title</b>	Change in gradient HERV_W_a
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.438 <sup>[60]</sup>
Method	Change in gradient

Notes:

[60] - Non significant.

<b>Statistical analysis title</b>	Change in gradient HERV_H_b
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.012 <sup>[61]</sup>
Method	Mixed models analysis

Notes:

[61] - Gradient change significant P=0.012. Gradient before borderline significantly negative. After is significantly positive. Decline in values in period before intervention appears to change significantly after v 5 into an increase in values over time.

<b>Statistical analysis title</b>	Change in gradient HERV_H_c
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.197 <sup>[62]</sup>
Method	Mixed models analysis

Notes:

[62] - Non significant.

<b>Statistical analysis title</b>	Change in gradient HERV_H_d
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over

the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.01 <sup>[63]</sup>
Method	Mixed models analysis

Notes:

[63] - Borderline significant negative gradient before changes to significant positive after v 5. Decline in values appears to change significantly after intervention into increase in values over time.

<b>Statistical analysis title</b>	Change in gradient HERV_W_e
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.008 <sup>[64]</sup>
Method	Change in gradient

Notes:

[64] - Significantly negative decline before visit 5 changes to a non-significant positive gradient after; the change in gradients is significant P=0.008.

<b>Statistical analysis title</b>	Change in gradient HERV_W_f
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.195 <sup>[65]</sup>
Method	Change in gradient

Notes:

[65] - Non significant.

<b>Statistical analysis title</b>	Change in gradient PROP_B_g
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.405 <sup>[66]</sup>
Method	Change in gradient

Notes:

[66] - Non significant.

<b>Statistical analysis title</b>	Change in gradient PROP_mon_h
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.072 <sup>[67]</sup>
Method	Change in gradient

Notes:

[67] - Non-significant positive gradient changes to borderline significant negative gradient; change in gradient borderline significant consistent with intervention effect. Interpretation dependent on biological plausibility due to possibility Type 1 error

<b>Statistical analysis title</b>	Change in gradient HERV_W_i
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.552 <sup>[68]</sup>
Method	Change in gradient

Notes:

[68] - Non-significant.

<b>Statistical analysis title</b>	Change in gradient HERV_H_i
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.054 <sup>[69]</sup>
Method	Change in gradient

Notes:

[69] - A non-significant negative gradient before intervention changes to a significantly positive gradient after; the change is borderline significant  $P=0.054$ .

<b>Statistical analysis title</b>	Change in gradient HERV_H_k
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.802 [70]
Method	Change in gradient

Notes:

[70] - Non-significant.

<b>Statistical analysis title</b>	Change in gradient HERV_H_l
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.314 [71]
Method	Change in gradient

Notes:

[71] - Non-significant.

<b>Statistical analysis title</b>	Change in gradient HERV_W_m
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.178 [72]
Method	Change in gradient

Notes:

[72] - Non-significant.

<b>Statistical analysis title</b>	Change in gradient HERV_W_n
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient

of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.047 <sup>[73]</sup>
Method	Change in gradient

Notes:

[73] - Non-significant decline before visit 5 becomes a borderline significant increase after; the change in gradient is significant. Biological plausibility important, both for change displayed and for negative correlation with Gd T1 lesions.

### Secondary: EDSS Clinical responses (disability data)

End point title	EDSS Clinical responses (disability data)
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End point description:

Expanded Disability Status Scale score at screening between 0-6.0 inclusive for trial eligibility. Disability measures summaries at baseline, before and after.

End point type	Secondary
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End point timeframe:

EDSS performed at visits 1, 2, 4, 6 and 8. Summaries of disability measured at baseline, before and after.

End point values	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	20		
Units: Within patient change in means arithmetic mean (standard deviation)				
EDSS	0.14 (± 0.45)	0.14 (± 0.45)		

### Statistical analyses

<b>Statistical analysis title</b>	One-sample t-test
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other <sup>[74]</sup>
P-value	= 0.179
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[74] - One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

<b>Statistical analysis title</b>	Mixed model
Comparison groups	Treatment v ITT

Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other <sup>[75]</sup>
P-value	= 0.13
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[75] - Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

### Secondary: MSFC Clinical responses (disability data)

End point title	MSFC Clinical responses (disability data)
End point description: MSFC (the standardly derived composite score from 9-hole peg test (9HPT), timed walk and PASAT scores); higher scores indicate less disability	
End point type	Secondary
End point timeframe: Changes in mean after - before (treatment)	

End point values	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	20		
Units: Changes in mean after - before arithmetic mean (standard deviation)				
MSFC	0.23 (± 0.28)	0.23 (± 0.28)		

### Statistical analyses

<b>Statistical analysis title</b>	One-sample t-test
Statistical analysis description: One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.002 <sup>[76]</sup>
Method	One sample t-test

Notes:

[76] - Both change and change in gradient significant.

<b>Statistical analysis title</b>	Mixed model
Statistical analysis description: Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT

Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	< 0.001 [77]
Method	Mixed models analysis

Notes:

[77] - Both change and change in gradient significant.

### Secondary: 9HPT speed Clinical responses (disability data)

End point title	9HPT speed Clinical responses (disability data)
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End point description:

End point type	Secondary
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End point timeframe:

Changes in mean after - before

End point values	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	20		
Units: Changes in mean after - before arithmetic mean (standard deviation)				
9HPT	0.003 (± 0.003)	0.003 (± 0.003)		

### Statistical analyses

Statistical analysis title	One sample t-test
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Statistical analysis description:

One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	< 0.001 [78]
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[78] - Highly significant improvement.

There are statistically significant improvements in the 9HPT, but the rate of improvement slowed after intervention. This is not consistent with an effect of intervention.

Statistical analysis title	Mixed model
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	< 0.001 [79]
Method	Mixed models analysis

Notes:

[79] - There are statistically significant improvements in the 9HPT, but the rate of improvement slowed after intervention. This is not consistent with an effect of intervention.

<b>Statistical analysis title</b>	Change in gradient
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.217 [80]
Method	Mixed models analysis

Notes:

[80] - No significant gradient change. Rate of improvement substantially greater before than after intervention

### Secondary: 25 foot walk speed Clinical responses (disability data)

End point title	25 foot walk speed Clinical responses (disability data)
End point description:	
End point type	Secondary
End point timeframe:	
Changes in mean after - before	

End point values	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	20		
Units: Changes in mean after - before				
arithmetic mean (standard deviation)				
25' walk speed	-0.04 (± 0.47)	-0.04 (± 0.47)		

### Statistical analyses

<b>Statistical analysis title</b>	One sample t-test
Statistical analysis description:	
One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT

Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.738 <sup>[81]</sup>
Method	One sample t-test

Notes:

[81] - Non significant.

<b>Statistical analysis title</b>	Mixed model analysis
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.669 <sup>[82]</sup>
Method	Mixed models analysis

Notes:

[82] - Non significant.

<b>Statistical analysis title</b>	Change in gradient
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Statistical analysis description:

Change in gradient': this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.908 <sup>[83]</sup>
Method	change in gradient

Notes:

[83] - Non significant

### **Secondary: PASAT Clinical responses (disability data)**

End point title	PASAT Clinical responses (disability data)
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End point description:

End point type	Secondary
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End point timeframe:

Changes in mean after - before

<b>End point values</b>	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	20		
Units: Changes in mean after - before arithmetic mean (standard deviation)				
PASAT	4.66 (± 5.21)	4.66 (± 5.21)		

## Statistical analyses

<b>Statistical analysis title</b>	One sample t-test
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Statistical analysis description:

One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.001 [84]
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[84] - Highly significant improvement, but rate of improvement substantially greater before than after intervention

<b>Statistical analysis title</b>	Mixed model
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	< 0.001 [85]
Method	Mixed models analysis

Notes:

[85] - Highly significant improvement, but rate of improvement substantially greater before than after intervention.

<b>Statistical analysis title</b>	Change in gradient
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Statistical analysis description:

Change in gradient': this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.004 <sup>[86]</sup>
Method	Change in gradient
Parameter estimate	Slope
Confidence interval	
sides	2-sided

Notes:

[86] - There is a significant gradient change, but rate of improvement substantially greater before than after intervention

## Secondary: Quality of life measures

End point title	Quality of life measures
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End point description:

Quality of life measures: patient reported outcomes (PROs) including 3 questionnaires: Health Status Questionnaire (SF-36), Multiple Sclerosis Impact Scale (MSIS-29), Multiple Sclerosis Walking Scale (MSWS-12) and 2 Visual Analogue Scales (VAS): Patient Fatigue Assessment (PFA) and Patient Pain Assessment (PPA). The SF-36 generates 8 subscale scores for Physical Functional Scale (PF), Role-Physical Scale (RP), Bodily Pain Scale (BP), General Health scale (GH), Vitality Scale (VT), Social Functioning Scale (SF), Role Emotional Scale (RE) and Mental Health Scale (MH). Higher scores indicate better health/quality of life on all eight SF-36 measures, and worse health/quality of life on the last four measures.

End point type	Secondary
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End point timeframe:

Quality of life measures baseline, before and after summeries. Patient reported outcomes completed at visits 2 (baseline), 3, 4 and 5 (before) and 6, 7 and 8 (after).

End point values	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	20		
Units: Change after - before				
arithmetic mean (standard deviation)				
SF36 PF Before	72.63 (± 23.37)	72.63 (± 23.37)		
Sf36 PF After	71.71 (± 26.04)	71.71 (± 26.04)		
SF36 RP Before	59.06 (± 39.66)	59.06 (± 39.66)		
Sf36 RP After	49.58 (± 38.47)	49.58 (± 38.47)		
Sf36 BP Before	72.22 (± 19.59)	72.22 (± 19.59)		
SF36 BP After	66.8 (± 22.63)	66.8 (± 22.63)		
SF36 GH Before	50.86 (± 15.02)	50.86 (± 15.02)		
SF36 GH After	46.18 (± 16.86)	46.18 (± 16.86)		
SF36 VT Before	42.98 (± 21.53)	42.98 (± 21.53)		
SF36 VT After	48.04 (± 22.21)	48.04 (± 22.21)		
SF36 Sf After	77.92 (± 16.06)	77.92 (± 16.06)		

SF36 RE Before	71.92 ( $\pm$ 33.39)	71.92 ( $\pm$ 33.39)		
SF36 RE After	63.3 ( $\pm$ 38.35)	63.3 ( $\pm$ 38.35)		
SF36 MH Before	65.85 ( $\pm$ 12.77)	65.85 ( $\pm$ 12.77)		
SF36 MH After	71.57 ( $\pm$ 11.05)	71.57 ( $\pm$ 11.05)		
PFA Before	40.02 ( $\pm$ 24.36)	40.02 ( $\pm$ 24.36)		
PFA After	38.51 ( $\pm$ 26.35)	38.51 ( $\pm$ 26.35)		
PPA Before	22.8 ( $\pm$ 19.46)	22.8 ( $\pm$ 19.46)		
PPA After	27.96 ( $\pm$ 21.46)	27.96 ( $\pm$ 21.46)		
MSIS Before	52.16 ( $\pm$ 17.4)	52.16 ( $\pm$ 17.4)		
MSIS After	50.06 ( $\pm$ 13.95)	50.06 ( $\pm$ 13.95)		
MSWS-12 Before	20.87 ( $\pm$ 9.61)	20.87 ( $\pm$ 9.61)		
MSWS-12 After	20.52 ( $\pm$ 9.76)	20.52 ( $\pm$ 9.76)		

## Statistical analyses

<b>Statistical analysis title</b>	SF36 PF One sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.713 <sup>[87]</sup>
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[87] - Non significant

<b>Statistical analysis title</b>	SF36 PF Mixed model
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.685 <sup>[88]</sup>
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[88] - Non significant

<b>Statistical analysis title</b>	SF36 PF Change in gradient
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.063 [89]
Method	Change in gradient
Parameter estimate	Slope

Notes:

[89] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	SF36 RP One sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.198 [90]
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[90] - Non significant.

<b>Statistical analysis title</b>	SF36 RP Mixed model
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.034 [91]
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[91] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	SF36 RP Change in gradient
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.873 <sup>[92]</sup>
Method	Change in gradient
Parameter estimate	Slope

Notes:

[92] - Non significant.

<b>Statistical analysis title</b>	SF36 BP One sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.14 <sup>[93]</sup>
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[93] - Non significant

<b>Statistical analysis title</b>	SF36 BP Mixed model
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.024 <sup>[94]</sup>
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[94] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	SF36 BP Change in gradient
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.026 <sup>[95]</sup>
Method	Change in gradient
Parameter estimate	Slope

Notes:

[95] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	SF36 GH One sample t-test
Statistical analysis description: One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.019 [96]
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[96] - Significant improvements in well-being/slowing of deterioration after compared to before intervention. Although consistent with effect of raltegravir, this is most credibly attributable to placebo effect of patients receiving unblinded intervention.

<b>Statistical analysis title</b>	SF36 GH Mixed model
Statistical analysis description: Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.001 [97]
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[97] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	SF36 GH Change in gradient
Statistical analysis description: Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.022 [98]
Method	Change in gradient
Parameter estimate	Slope

Notes:

[98] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	SF36 VT One sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.14 [99]
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[99] - Non significant.

<b>Statistical analysis title</b>	SF36 VT Mixed model
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.011 [100]
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[100] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	SF36 VT Change in gradient
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.004 [101]
Method	Change in gradient
Parameter estimate	Slope

Notes:

[101] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	SF36 SF One sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.567 <sup>[102]</sup>
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[102] - Non significant.

<b>Statistical analysis title</b>	SF36 SF Mixed model
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.414 <sup>[103]</sup>
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[103] - Non significant.

<b>Statistical analysis title</b>	SF36 SF Change in gradient
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.039 <sup>[104]</sup>
Method	Change in gradient
Parameter estimate	Slope

Notes:

[104] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	SF36 RE One sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.252 <sup>[105]</sup>
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[105] - Non significant.

<b>Statistical analysis title</b>	SF36 RE Mixed model
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.096 [106]
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[106] - Non significant.

<b>Statistical analysis title</b>	SF36 RE Change in gradient
Statistical analysis description: Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.768 [107]
Method	Change in gradient
Parameter estimate	Slope

Notes:

[107] - Non significant.

<b>Statistical analysis title</b>	PFA One sample t-test
Statistical analysis description: One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.665 [108]
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[108] - Non significant.

<b>Statistical analysis title</b>	PFA Mixed model
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.683 <sup>[109]</sup>
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[109] - Non significant.

<b>Statistical analysis title</b>	PFA Change in gradient
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.057 <sup>[110]</sup>
Method	Change in gradient
Parameter estimate	Slope

Notes:

[110] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	PPA One sample t-test
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Statistical analysis description:

One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.17 <sup>[111]</sup>
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[111] - Non significant.

<b>Statistical analysis title</b>	PPA Mixed model
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.144 <sup>[112]</sup>
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[112] - Non significant.

<b>Statistical analysis title</b>	PPA Change in gradient
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.01 <sup>[113]</sup>
Method	Change in gradient
Parameter estimate	Slope

Notes:

[113] - Statistically significant improvements in the period after compared to before intervention. Although consistent with an effect of raltegravir, this is most credibly attributable to the placebo effect of patients receiving an unblinded intervention.

<b>Statistical analysis title</b>	MSIS One sample t-test
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Statistical analysis description:

One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.477 <sup>[114]</sup>
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[114] - Non significant.

<b>Statistical analysis title</b>	MSIS Mixed model
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Statistical analysis description:

Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.22 <sup>[115]</sup>
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[115] - Non significant.

<b>Statistical analysis title</b>	MSIS Change in gradient
Statistical analysis description: Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.196 [116]
Method	Change in gradient
Parameter estimate	Slope

Notes:

[116] - Non significant.

<b>Statistical analysis title</b>	MSWS One sample t-test
Statistical analysis description: One-sample t-test': this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.817 [117]
Method	One sample t-test
Parameter estimate	Mean difference (net)

Notes:

[117] - Non significant.

<b>Statistical analysis title</b>	MSWS Mixed model
Statistical analysis description: Mixed model': this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.772 [118]
Method	Mixed models analysis
Parameter estimate	Mean difference (net)

Notes:

[118] - Non significant.

<b>Statistical analysis title</b>	MSWS Change in gradient
Statistical analysis description: Change in gradient: this uses the linear mixed model, using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of	

change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.12 <sup>[119]</sup>
Method	Change in gradient
Parameter estimate	Slope

Notes:

[119] - Non significant.

## Secondary: EBV copy number in saliva

End point title	EBV copy number in saliva
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End point description:

Epstein-Barr virus (EBV), also called human herpesvirus 4 (HHV-4), infection is associated with with a higher risk of certain autoimmune diseases, such as Multiple Sclerosis. In particular, people who have had glandular fever, the symptomatic EBV infection, have a higher risk to develop MS.

EBV may be found in the saliva of someone who has had glandular fever for several months after their symptoms pass, and most people may continue to have the virus in their saliva on and off for years. Studies of dynamics of virus shedding in healthy carriers demonstrate that EBV shedding into saliva is constant.

End point type	Secondary
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End point timeframe:

Changes in mean after - before.

End point values	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	13		
Units: Copies/microlitre				
arithmetic mean (standard deviation)				
EBV	-16.3 (± 46.02)	-16.3 (± 46.02)		

## Statistical analyses

Statistical analysis title	EBV one sample t-test
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	33
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.226 <sup>[120]</sup>
Method	One sample t-test

Notes:

[120] - Non significant.

<b>Statistical analysis title</b>	EBV Mixed model
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 2 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	33
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.616 [121]
Method	Mixed models analysis

Notes:

[121] - Non significant.

<b>Statistical analysis title</b>	EBV change in gradient
Comparison groups	Treatment v ITT
Number of subjects included in analysis	33
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.219 [122]
Method	Change in gradient

Notes:

[122] - Non significant.

### Secondary: Laboratory safety data

End point title	Laboratory safety data
End point description: Laboratory safety outcomes. Assessments collected at screening were used to determine study eligibility only. Safety assessments were collected at all visits. Severity of abnormal results was evaluated by the investigator as mild, moderate or severe. Lab findings which the investigator felt were clinically significant based on the Laboratory Guidelines were recorded as adverse events. The relationship of the adverse event to the administration of the study drug was also determined by the investigator.	
End point type	Secondary

End point timeframe:

Changes in after - before (treatment).

End point values	Treatment	ITT		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	20	20		
Units: After - before changes in mean arithmetic mean (standard deviation)				
Adjusted calcium serum	0.02 (± 0.05)	0.02 (± 0.05)		
ALT	1.12 (± 8.75)	1.12 (± 8.75)		
AST	1.24 (± 4.83)	1.24 (± 4.83)		
Basophil count	0 (± 0.02)	0 (± 0.02)		

Chloride serum	-0.75 (± 1.65)	-0.75 (± 1.65)		
Cholesterol HDL ratio serum	0.04 (± 0.21)	0.04 (± 0.21)		
Cholesterol serum	0.28 (± 0.38)	0.28 (± 0.38)		
Creatinine serum	2.08 (± 5.91)	2.08 (± 5.91)		
Eosinophil count	0 (± 0.06)	0 (± 0.06)		
Estimated GFR	-3 (± 9.77)	-3 (± 9.77)		
GGT	-0.5 (± 8.18)	-0.5 (± 8.18)		
Glucose plasma	-0.18 (± 0.47)	-0.18 (± 0.47)		
Haemoglobin	-0.13 (± 0.56)	-0.13 (± 0.56)		
HDL cholesterol serum	0.05 (± 0.16)	0.05 (± 0.16)		
LDL Cholesterol serum	0.17 (± 0.32)	0.17 (± 0.32)		
Lymphocyte count	0.05 (± 0.31)	0.05 (± 0.31)		
Monocyte count	0 (± 0.11)	0 (± 0.11)		
Neutrophil count	0.15 (± 0.61)	0.15 (± 0.61)		
Platelet count	6.86 (± 13.92)	6.86 (± 13.92)		
Potassium serum	0.05 (± 0.15)	0.05 (± 0.15)		
Sodium serum	0.14 (± 1.57)	0.14 (± 1.57)		
Total bilirubin serum	0.18 (± 1.5)	0.18 (± 1.5)		
Triglycerides serum	0.08 (± 0.29)	0.08 (± 0.29)		
Urea serum	0.24 (± 0.78)	0.24 (± 0.78)		
White blood count	0.22 (± 0.71)	0.22 (± 0.71)		

## Statistical analyses

<b>Statistical analysis title</b>	One sample t-test Adjusted Calcium serum
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.025 <sup>[123]</sup>
Method	One sample t-test

Notes:

[123] - There was a significant increase after vs before, 0.02 (P=0.025). However, there was no significant change in gradient P=0.406

<b>Statistical analysis title</b>	One sample t-test ALT
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.575 <sup>[124]</sup>
Method	One sample t-test

Notes:

[124] - Non significant.

<b>Statistical analysis title</b>	One sample t-test AST
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.266 [125]
Method	One sample t-test

Notes:

[125] - Non significant.

<b>Statistical analysis title</b>	One sample t-test basophil count
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.883 [126]
Method	One sample t-test

Notes:

[126] - Non significant.

<b>Statistical analysis title</b>	One sample t-test chloride serum
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.055 [127]
Method	One sample t-test

Notes:

[127] - Borderline significant drop, -0.75 (P=0.055). However, there was no significant change in gradient, P=0.194.

<b>Statistical analysis title</b>	One sample t-test Cholesterol HDL ratio serum
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT

Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.369 <sup>[128]</sup>
Method	One sample t-test

Notes:

[128] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Cholesterol serum
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.004 <sup>[129]</sup>
Method	One sample t-test

Notes:

[129] - There was a significant increase  $P=0.004$ . However, there was no significant change in gradient  $P=0.437$ . Faster increase before than after.

<b>Statistical analysis title</b>	One sample t-test Creatinine serum
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.132 <sup>[130]</sup>
Method	One sample t-test

Notes:

[130] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Eosinophil count
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.855 <sup>[131]</sup>
Method	One sample t-test

Notes:

[131] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Estimated GFR
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing

whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.186 [132]
Method	One sample t-test

Notes:

[132] - Non significant.

<b>Statistical analysis title</b>	One sample t-test GGT
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.789 [133]
Method	One sample t-test

Notes:

[133] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Glucose plasma
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.108 [134]
Method	One sample t-test

Notes:

[134] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Haemoglobin
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.308 [135]
Method	One sample t-test

Notes:

[135] - Non significant.

<b>Statistical analysis title</b>	One sample t-test HDL Cholesterol serum
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.174 <sup>[136]</sup>
Method	One sample t-test

Notes:

[136] - Non significant.

<b>Statistical analysis title</b>	One sample t-test LDL Cholesterol serum
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.027 <sup>[137]</sup>
Method	One sample t-test

Notes:

[137] - There was a significant increase, but no significant change in gradient P=0.432.

<b>Statistical analysis title</b>	One sample t-test Lymphocyte count
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.465 <sup>[138]</sup>
Method	One sample t-test

Notes:

[138] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Monocyte count
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Statistical analysis description:

One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.958 <sup>[139]</sup>
Method	One sample t-test

Notes:

[139] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Neutrophil count
Statistical analysis description:	
One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.291 <sup>[140]</sup>
Method	One sample t-test
Notes:	
[140] - Non significant.	

<b>Statistical analysis title</b>	One sample t-test Platelet count
Statistical analysis description:	
One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.04 <sup>[141]</sup>
Method	One sample t-test
Notes:	
[141] - There was asignificant increase P=0.040. However, there was no significant change in gradient P=0.352.	

<b>Statistical analysis title</b>	One sample t-test Potassium serum
Statistical analysis description:	
One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.161 <sup>[142]</sup>
Method	One sample t-test
Notes:	
[142] - There was asignificant increase P=0.040. However, there was no significant change in gradient P=0.352.	

<b>Statistical analysis title</b>	One sample t-test Sodium serum
Statistical analysis description:	
One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.692 <sup>[143]</sup>
Method	One sample t-test

Notes:

[143] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Total bilirubin serum
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.591 [144]
Method	One sample t-test

Notes:

[144] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Triglicerides serum
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.225 [145]
Method	One sample t-test

Notes:

[145] - Non significant.

<b>Statistical analysis title</b>	One sample t-test Urea serum
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.183 [146]
Method	One sample t-test

Notes:

[146] - Non significant.

<b>Statistical analysis title</b>	One sample t-test White blood count
Statistical analysis description: One-sample t-test: this uses one datapoint per patient, the within-patient change in means, testing whether the mean of these changes is significant.	
Comparison groups	Treatment v ITT

Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.184 [147]
Method	One sample t-test

Notes:

[147] - Non significant.

<b>Statistical analysis title</b>	Mixed model Adjusted calcium serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.027 [148]
Method	Mixed models analysis

Notes:

[148] - There was a significant increase after vs before. However, there was no significant change in gradient.

<b>Statistical analysis title</b>	Mixed model ALT
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.643 [149]
Method	Mixed models analysis

Notes:

[149] - Non significant.

<b>Statistical analysis title</b>	Mixed model AST
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.265 [150]
Method	Mixed models analysis

Notes:

[150] - Non significant.

<b>Statistical analysis title</b>	Mixed model Basophil count
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear

mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.954 [151]
Method	Mixed models analysis

Notes:

[151] - Non significant.

<b>Statistical analysis title</b>	Mixed model Chloride serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.032 [152]
Method	Mixed models analysis

Notes:

[152] - Borderline significant drop. However, there was no significant change in gradient

<b>Statistical analysis title</b>	Mixed model Cholesterol HDL ratio serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.441 [153]
Method	Mixed models analysis

Notes:

[153] - Borderline significant drop.

<b>Statistical analysis title</b>	Mixed model Cholesterol serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0 [154]
Method	Mixed models analysis

Notes:

[154] - There was a significant increase. However, there was no significant change in gradient.

<b>Statistical analysis title</b>	Mixed model Creatinine serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.097 <sup>[155]</sup>
Method	Mixed models analysis

Notes:

[155] - Non significant.

<b>Statistical analysis title</b>	Mixed model Eosinophil count
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.711 <sup>[156]</sup>
Method	Mixed models analysis

Notes:

[156] - Non significant.

<b>Statistical analysis title</b>	Mixed model Estimated GFR
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.153 <sup>[157]</sup>
Method	Mixed models analysis

Notes:

[157] - Non significant.

<b>Statistical analysis title</b>	Mixed model GGT
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.794 <sup>[158]</sup>
Method	Mixed models analysis

Notes:

[158] - Non significant.

<b>Statistical analysis title</b>	Mixed model Glucose Plasma
Statistical analysis description:	
Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.196 <sup>[159]</sup>
Method	Mixed models analysis
Notes:	
[159] - Non significant.	

<b>Statistical analysis title</b>	Mixed model Haemoglobin
Statistical analysis description:	
Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.168 <sup>[160]</sup>
Method	Mixed models analysis
Notes:	
[160] - Non significant.	

<b>Statistical analysis title</b>	Mixed model HDL cholesterol serum
Statistical analysis description:	
Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.101 <sup>[161]</sup>
Method	Mixed models analysis
Notes:	
[161] - Non significant.	

<b>Statistical analysis title</b>	Mixed model LDL cholesterol serum
Statistical analysis description:	
Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.018 <sup>[162]</sup>
Method	Mixed models analysis

Notes:

[162] - There was a significant increase. However, there was no significant change in gradient.

<b>Statistical analysis title</b>	Mixed model Lymphocyte count
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.304 [163]
Method	Mixed models analysis

Notes:

[163] - Non significant.

<b>Statistical analysis title</b>	Mixed model Monocyte count
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.789 [164]
Method	Mixed models analysis

Notes:

[164] - Non significant.

<b>Statistical analysis title</b>	Mixed model Neutrophil count
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.244 [165]
Method	Mixed models analysis

Notes:

[165] - Non significant.

<b>Statistical analysis title</b>	Mixed model Platelet count
Statistical analysis description: Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.	
Comparison groups	Treatment v ITT

Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.013 [166]
Method	Mixed models analysis

Notes:

[166] - There was a significant increase. However, there was no significant change in gradient.

<b>Statistical analysis title</b>	Mixed model Potassium serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.143 [167]
Method	Mixed models analysis

Notes:

[167] - Non significant.

<b>Statistical analysis title</b>	Mixed model Sodium serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.732 [168]
Method	Mixed models analysis

Notes:

[168] - Non significant.

<b>Statistical analysis title</b>	Mixed model Total bilirubin serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.57 [169]
Method	Mixed models analysis

Notes:

[169] - Non significant.

<b>Statistical analysis title</b>	Mixed model Triglycerides serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear

mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.133 <sup>[170]</sup>
Method	Mixed models analysis

Notes:

[170] - Non significant.

<b>Statistical analysis title</b>	Mixed model Urea serum
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.107 <sup>[171]</sup>
Method	Mixed models analysis

Notes:

[171] - Non significant.

<b>Statistical analysis title</b>	Mixed model White blood count
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Statistical analysis description:

Mixed model: this compares the change in means in a potentially more powerful analysis using a linear mixed model which uses all of a patient's values, from visit 1 to visit 8.

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.154 <sup>[172]</sup>
Method	Mixed models analysis

Notes:

[172] - Non significant.

<b>Statistical analysis title</b>	Change in gradient Adjusted calcium serum
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.406 <sup>[173]</sup>
Method	Change in gradient

Notes:

[173] - No significant chnge

	gradient	SE	z	P-value	95% Conf. Int
before	-.0000267	.005385	-0.00	0.996	-.0105811 .0105277

<b>Statistical analysis title</b>	Change in gradient ALT
Statistical analysis description:	
Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.179 <sup>[174]</sup>
Method	Change in gradient

Notes:

[174] - No signif change

	gradient	SE	z	P-value	95% Conf. Int
before	-.0000267	.005385	-0.00	0.996	-.0105811 .0105277
after	.0077586	.0053828	1.44	0.149	-.0027916 0183087

<b>Statistical analysis title</b>	Change in gradient AST
Statistical analysis description:	
Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.385 <sup>[175]</sup>
Method	Change in gradient

Notes:

[175] - Non significant.

<b>Statistical analysis title</b>	Change in gradient Basophil count
Statistical analysis description:	
Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.779 <sup>[176]</sup>
Method	Change in gradient

Notes:

[176] - Non significant.

<b>Statistical analysis title</b>	Change in gradient Chloride serum
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**Statistical analysis description:**

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.194 [177]
Method	Change in gradient

**Notes:**

[177] - No signif change

	gradient	SE	z	P-value	95% Conf. Int
before	.1363255	.2036459	0.67	0.503	-.2628131 .5354641
after	-.3119152	.1915487	-1.63	0.103	-.6873437 .0635134

<b>Statistical analysis title</b>	Change in gradient Cholesterol HDL ratio serum
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**Statistical analysis description:**

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.928 [178]
Method	Change in gradient

**Notes:**

[178] - Non significant.

<b>Statistical analysis title</b>	Change in gradient Cholesterol serum
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**Statistical analysis description:**

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.437 [179]
Method	Change in gradient

**Notes:**

[179] - No signif change

	gradient	SE	z	P-value	95% Conf. Int
before	.0826927	.043773	1.89	0.059	-.0031008 .1684862
after	.0258226	.040227	0.64	0.521	-.0530208 .1046661

<b>Statistical analysis title</b>	Change in gradient Creatinine serum
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**Statistical analysis description:**

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.769 <sup>[180]</sup>
Method	Change in gradient

Notes:

[180] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient Eosinophil count
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.768 <sup>[181]</sup>
Method	Change in gradient

Notes:

[181] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient Estimated GFR
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.874 <sup>[182]</sup>
Method	Change in gradient

Notes:

[182] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient Estimated GGT
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.345 <sup>[183]</sup>
Method	Change in gradient

Notes:

[183] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient Estimated Glucose plasma
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.072 [184]
Method	Change in gradient

Notes:

[184] - There was a borderline significant gradient change P=0.072, from a non-significant increase before to a significant decline after.

<b>Statistical analysis title</b>	Change in gradient Haemoglobin
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.558 [185]
Method	Change in gradient

Notes:

[185] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient HDL Cholesterol serum
Statistical analysis description: Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).	
Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.843 [186]
Method	Change in gradient

Notes:

[186] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient LDL Cholesterol serum
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient

of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.432 <sup>[187]</sup>
Method	Change in gradient

Notes:

[187] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient Lymphocyte count
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.775 <sup>[188]</sup>
Method	Change in gradient

Notes:

[188] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient Monocyte count
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.089 <sup>[189]</sup>
Method	Change in gradient

Notes:

[189] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient Neutrophil count
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.899 [190]
Method	Change in gradient

Notes:

[190] - There was no significant change in gradient.

<b>Statistical analysis title</b>	Change in gradient Platelet count
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.352 [191]
Method	Change in gradient

Notes:

[191] - No signif change

	gradient	SE	z	P-value	95% Conf. Int
before	-.274596	1.820794	-0.15	0.880	-3.843288 3.294096
after	2.592704	1.709353	1.52	0.129	-.7575659 5.942974

<b>Statistical analysis title</b>	Change in gradient Potassium serum
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.221 [192]
Method	Change in gradient

Notes:

[192] - There was no significant change in gradient

<b>Statistical analysis title</b>	Change in gradient Sodium serum
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
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Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.445 [193]
Method	Change in gradient

Notes:

[193] - There was no significant change in gradient

<b>Statistical analysis title</b>	Change in gradient total bilirubin serum
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.123 [194]
Method	Change in gradient

Notes:

[194] - There was no significant change in gradient

<b>Statistical analysis title</b>	Change in gradient Triglicerides serum
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.767 [195]
Method	Change in gradient

Notes:

[195] - There was no significant change in gradient

<b>Statistical analysis title</b>	Change in gradient Urea serum
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.197 [196]
Method	Change in gradient

Notes:

[196] - There was no significant change in gradient

<b>Statistical analysis title</b>	Change in gradient White blood count
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Statistical analysis description:

Change in gradient: this uses the linear mixed model, again using all of a patient's measurements over the seven visits, to determine if the gradient of change after is significantly different from the gradient of change before. Note that the p-value refers to the change in gradients, not to either of the two gradients, which may or may not be significant (ie significantly different from zero).

Comparison groups	Treatment v ITT
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.674 [197]
Method	Change in gradient

Notes:

[197] - There was no significant change in gradient

### Secondary: Adverse events

End point title	Adverse events
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End point description:

End point type	Secondary
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End point timeframe:

After - before (treatment) changes

End point values	Treatment	Per protocol	ITT	
Subject group type	Reporting group	Subject analysis set	Subject analysis set	
Number of subjects analysed	20	16	20	
Units: Number of visits with adverse events				
arithmetic mean (standard deviation)				
Number of visits with AEs before intervention	2.35 (± 0.75)	2.31 (± 0.79)	2.35 (± 0.75)	
Number of visits with AEs after intervention	2.3 (± 0.73)	2.31 (± 0.79)	2.3 (± 0.73)	
Adverse events	-0.05 (± 1.28)	0 (± 1.37)	-0.05 (± 1.28)	

### Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Reporting of adverse events from screening

Adverse event reporting additional description:

Adverse events were recorded for all subjects screened (n=31) and include events for patients who did not receive IMP.

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	19.0
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### Reporting groups

Reporting group title	Non-serious adverse events
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Reporting group description:

Adverse events were recorded from screening (n=31) and include subjects who did not receive IMP.

<b>Serious adverse events</b>	Non-serious adverse events		
Total subjects affected by serious adverse events			
subjects affected / exposed	1 / 20 (5.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		
Nervous system disorders			
MS relapse	Additional description: MS relapse which required hospitalisation for administration of IV methylprednisolone. Normal practise would not have been to admit to hospital. However the patient had no care at home and could not care for self at home.		
alternative assessment type: Non-systematic			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		

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

<b>Non-serious adverse events</b>	Non-serious adverse events		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	20 / 20 (100.00%)		
General disorders and administration site conditions			
Headache			

subjects affected / exposed	10 / 20 (50.00%)		
occurrences (all)	12		
Liver function test abnormal			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Liver function test increased			
subjects affected / exposed	2 / 20 (10.00%)		
occurrences (all)	2		
Dizziness			
subjects affected / exposed	3 / 20 (15.00%)		
occurrences (all)	3		
Fall			
subjects affected / exposed	5 / 20 (25.00%)		
occurrences (all)	5		
Insomnia			
subjects affected / exposed	2 / 20 (10.00%)		
occurrences (all)	2		
poor sleep			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Nausea			
subjects affected / exposed	2 / 20 (10.00%)		
occurrences (all)	2		
Swelling in left arm			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Stomach pain			
subjects affected / exposed	2 / 20 (10.00%)		
occurrences (all)	2		
Loss of libido			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Pyrexia			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Dysphonia			

subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Problems concentrating			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Stiff neck			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Fainting			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Vivid dreams			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Tiredness			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Night sweats			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Dry mouth			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Weight loss diet			
subjects affected / exposed	2 / 20 (10.00%)		
occurrences (all)	2		
Lack of motivation			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Low blood pressure asymptomatic			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Chest pain			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Choking on liquids			

subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Flushing to face subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Strange sensation when swallowing subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Swelling in fingers subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Swelling feeling in fingers subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Immune system disorders			
Adenopathies subjects affected / exposed occurrences (all)	2 / 20 (10.00%) 2		
Itchy eyes subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Allergic skin rash worsening subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Hayfever congestion subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Hayfever worsening subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Reproductive system and breast disorders			
Menopause onset subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Erectile dysfunction			

<p>subjects affected / exposed occurrences (all)</p> <p>Pelvic mass subjects affected / exposed occurrences (all)</p>	<p>1 / 20 (5.00%) 1</p> <p>1 / 20 (5.00%) 1</p>		
<p>Respiratory, thoracic and mediastinal disorders</p> <p>Wheeze subjects affected / exposed occurrences (all)</p>	<p>1 / 20 (5.00%) 1</p>		
<p>Psychiatric disorders</p> <p>Depression subjects affected / exposed occurrences (all)</p> <p>Depression worsening subjects affected / exposed occurrences (all)</p> <p>Low mood subjects affected / exposed occurrences (all)</p> <p>Anxiety subjects affected / exposed occurrences (all)</p> <p>Panic attack increased subjects affected / exposed occurrences (all)</p> <p>Emotional instability subjects affected / exposed occurrences (all)</p>	<p>4 / 20 (20.00%) 4</p> <p>1 / 20 (5.00%) 1</p>		
<p>Injury, poisoning and procedural complications</p> <p>Haematoma subjects affected / exposed occurrences (all)</p> <p>Bruised knee (due to fall) subjects affected / exposed occurrences (all)</p> <p>Broken toenail</p>	<p>2 / 20 (10.00%) 2</p> <p>1 / 20 (5.00%) 1</p>		

<p>subjects affected / exposed occurrences (all)</p> <p>Cut knee subjects affected / exposed occurrences (all)</p> <p>Twisted knee subjects affected / exposed occurrences (all)</p> <p>Hurt wrist subjects affected / exposed occurrences (all)</p>	<p>1 / 20 (5.00%) 1</p> <p>1 / 20 (5.00%) 1</p> <p>1 / 20 (5.00%) 1</p> <p>1 / 20 (5.00%) 1</p>		
<p>Cardiac disorders</p> <p>Hypertension subjects affected / exposed occurrences (all)</p> <p>Tachycardia subjects affected / exposed occurrences (all)</p> <p>Hypertension worsening subjects affected / exposed occurrences (all)</p> <p>Arrhythmia subjects affected / exposed occurrences (all)</p>	<p>4 / 20 (20.00%) 7</p> <p>1 / 20 (5.00%) 2</p> <p>1 / 20 (5.00%) 1</p> <p>1 / 20 (5.00%) 1</p>		
<p>Nervous system disorders</p> <p>Multiple sclerosis relapse alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)</p> <p>Multiple sclerosis sensory relapse alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)</p> <p>Sensory disturbance subjects affected / exposed occurrences (all)</p>	<p>9 / 20 (45.00%) 9</p> <p>5 / 20 (25.00%) 6</p> <p>2 / 20 (10.00%) 2</p>		

Fatigue			
subjects affected / exposed	4 / 20 (20.00%)		
occurrences (all)	4		
Fatigue increased			
subjects affected / exposed	4 / 20 (20.00%)		
occurrences (all)	4		
Migraine			
subjects affected / exposed	4 / 20 (20.00%)		
occurrences (all)	4		
Dysaesthesia worsening			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Nystagmus			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Neuropathic pain			
subjects affected / exposed	2 / 20 (10.00%)		
occurrences (all)	2		
Tremor in hands			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Numbness - loss of sensation			
subjects affected / exposed	3 / 20 (15.00%)		
occurrences (all)	3		
Tremor in arm worsened			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Subjective worsening of leg weakness			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Neurological signs worsening			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Back pain (burning sensation)			

subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Blood and lymphatic system disorders Dyslipidemia subjects affected / exposed occurrences (all)	10 / 20 (50.00%) 17		
Mycrocytic Anemia subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Hypoglycaemia subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Normocytic anaemia subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Eye disorders Visual fatigue subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Decreased vision subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Stye subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Gastrointestinal disorders Gastroenteritis subjects affected / exposed occurrences (all)	2 / 20 (10.00%) 2		
Defective gastro-ileal valve subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Bloated abdomen (during antibiotics) subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Skin and subcutaneous tissue disorders			

Itching			
subjects affected / exposed	2 / 20 (10.00%)		
occurrences (all)	3		
Eczema			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Fungal infection			
subjects affected / exposed	3 / 20 (15.00%)		
occurrences (all)	3		
Fungal infection worsening			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Dry skin			
subjects affected / exposed	2 / 20 (10.00%)		
occurrences (all)	2		
Petechial purpura			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Naevus			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Scar from mole removal			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Rash on face			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Mole on toe			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Allergic rash worsening			
subjects affected / exposed	1 / 20 (5.00%)		
occurrences (all)	1		
Renal and urinary disorders			
Bladder dysfunction			

<p>subjects affected / exposed occurrences (all)</p> <p>Dysuria subjects affected / exposed occurrences (all)</p> <p>Bladder problems worsening subjects affected / exposed occurrences (all)</p>	<p>3 / 20 (15.00%) 4</p> <p>1 / 20 (5.00%) 1</p> <p>3 / 20 (15.00%) 3</p>		
<p>Musculoskeletal and connective tissue disorders</p> <p>Pain subjects affected / exposed occurrences (all)</p> <p>Pain worsening subjects affected / exposed occurrences (all)</p> <p>Carpal tunnel syndrome subjects affected / exposed occurrences (all)</p> <p>Cramps in legs subjects affected / exposed occurrences (all)</p>	<p>14 / 20 (70.00%) 17</p> <p>2 / 20 (10.00%) 2</p> <p>1 / 20 (5.00%) 1</p> <p>1 / 20 (5.00%) 1</p>		
<p>Infections and infestations</p> <p>Common cold subjects affected / exposed occurrences (all)</p> <p>Urinary tract infection subjects affected / exposed occurrences (all)</p> <p>Sore throat subjects affected / exposed occurrences (all)</p> <p>Cough subjects affected / exposed occurrences (all)</p> <p>Sinusitis</p>	<p>14 / 20 (70.00%) 21</p> <p>6 / 20 (30.00%) 8</p> <p>5 / 20 (25.00%) 5</p> <p>2 / 20 (10.00%) 2</p>		

subjects affected / exposed occurrences (all)	3 / 20 (15.00%) 3		
Tooth infection subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Chest infection subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		
Upper respiratory tract infection subjects affected / exposed occurrences (all)	1 / 20 (5.00%) 1		

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
23 May 2013	<p>Approved documents:</p> <ul style="list-style-type: none"> <li>• Protocol Version 5.0</li> <li>• PIS/ICF Version 6.0</li> <li>• Questionnaires Version 2.0</li> <li>• Website Advertising Text Version 1.0</li> <li>• Additional IMP Label</li> </ul> <p>1. Updates to Patient Questionnaires The following questionnaires remain in the study and patients will be asked to complete these at visits 2-8.</p> <ol style="list-style-type: none"> <li>1. Health Status Questionnaire (SF-36)</li> <li>2. Multiple Sclerosis Impact Scale (MSIS-29)</li> <li>3. Multiple Sclerosis Walking Scale (MSWS-12v2)</li> </ol> <p>The following assessments replace patient assessments of pain and fatigue.</p> <ol style="list-style-type: none"> <li>1. Patient Fatigue Assessment – Visual Analogue Scale</li> <li>2. Patient Pain Assessment – Visual Analogue Scale</li> </ol> <p>2. Reduction of EDSS Frequency Frequency of EDSS assessments was reduced (every 2 months) as it was deemed unnecessary by the Chief Investigator to have this number of EDSS in the study.</p> <p>3. Use of an Additional Pharmacy Label Additional IMP label to be attached to the study IMP.</p> <p>4. Pregnancy Tests before MRI Clarification on pregnancy tests to be performed prior to MRI scans (standard of care but this information was not clearly outlined in the Protocol and Patient Information Sheet).</p> <p>5. Advertising Materials In order to advertise the study on the websites of patient support groups such as the MS Society and Shift MS to aid recruitment.</p>
11 November 2014	<p>Approved document: Protocol Version 6.0</p> <p>Summary of changes made to the protocol:</p> <ol style="list-style-type: none"> <li>1. End of Trial Definition The end of study definition was revised from 'Last Patient Last Visit' to 'Last Patient Last Visit plus six months'.</li> <li>2. Criteria for Premature Withdrawal Both protocol sections 3.4 and sections 5.8 of the protocol indicated the reasons for premature withdrawal from this study. However, section 3.4 did not include all reasons as given in protocol section 5.8. Section 3.4 was updated with the reason, which was previously present in protocol section 5.8 but missing in protocol section 3.4 : Severe or disabling MS relapse needing IVMP and admission to hospital during the 3 months on treatment phase of the study.</li> </ol>

13 April 2015	Clarifications were made to the following sections of the protocol post last patient last visit: <ol style="list-style-type: none"><li>1. Inclusion/Exclusion criteria section 3.3</li><li>2. Criteria for Premature Withdrawal section 3.4</li><li>3. Prior and concomitant therapies section 4.8</li></ol> The amendment was approved by the MHRA but rejected by the ethics committee. Therefore it was felt appropriate to withdraw the amendment. MHRA were notified of this on 08/06/15.
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Notes:

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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.

None
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Notes: