

**Clinical trial results:****Enumeration and Functional Evaluation of Regulatory T-cells in Psoriasis Patients Before and After Treatment with: Calcipotriol/Betamethasone, Acitretin, Narrow-Band UVB and Anti-TNF Therapy (Etanercept, Adalimumab and Infliximab)****Summary**

EudraCT number	2010-019129-32
Trial protocol	GB
Global end of trial date	30 October 2013

**Results information**

Result version number	v1 (current)
This version publication date	24 August 2018
First version publication date	24 August 2018
Summary attachment (see zip file)	Publication (T-Cell publication.pdf)

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

Sponsor protocol code	pRGF/009/10
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**Additional study identifiers**

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT01233583
WHO universal trial number (UTN)	-

Notes:

**Sponsors**

Sponsor organisation name	University of Aberdeen
Sponsor organisation address	Research Governance, Foresterhill House Annexe, Aberdeen, United Kingdom,
Public contact	Robert N. Baker, University of Aberdeen, 01224 554362, researchgovernance@abdn.ac.uk
Scientific contact	Robert N. Barker, University of Aberdeen, 01224 554362, researchgovernance@abdn.ac.uk

Notes:

**Paediatric regulatory details**

Is trial part of an agreed paediatric investigation plan (PIP)	No
Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial?	No
Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial?	No

Notes:

## Results analysis stage

Analysis stage	Final
Date of interim/final analysis	30 April 2014
Is this the analysis of the primary completion data?	Yes
Primary completion date	30 October 2013
Global end of trial reached?	Yes
Global end of trial date	30 October 2013
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

- 1) The objective is to test whether patient's response to conventional currently used psoriasis treatment, used in normal clinical practice is determined by regulatory T cells (cells which control the inflammatory response in psoriasis).
- 2) This will be achieved for each of 4 routinely used types of psoriasis therapy (topical calcipotriol/betamethasone combination, oral retinoid, NBUVB and anti-TNF  $\alpha$  therapy) by taking blood tests and a skin sample before treatment and after 6 weeks
- 3) The analysis of samples for Treg and T effector cells.

Protection of trial subjects:

This study was approved by the North of Scotland Research Ethics Committee and the Medicines and Healthcare Products Regulatory Agency according to the Declaration of Helsinki protocols. All participants signed written informed consent.

Background therapy:

The imbalance between CD4+ T effector cells, particularly the T helper (Th) 17 sub-set, and regulatory T cells (Tregs) is key to the development of psoriatic lesions, and therefore a novel therapeutic target.

Evidence for comparator:

This study quantifies in patients the effects of three commonly used psoriasis treatment modalities on the TH1, Th2, Th17 and Treg subsets, and tests whether any changes correlate with clinical response.

Actual start date of recruitment	24 June 2010
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

## Population of trial subjects

### Subjects enrolled per country

Country: Number of subjects enrolled	United Kingdom: 34
Worldwide total number of subjects	34
EEA total number of subjects	34

Notes:

### Subjects enrolled per age group

In utero	0
Preterm newborn - gestational age < 37 wk	0
Newborns (0-27 days)	0
Infants and toddlers (28 days-23	0

months)	
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	34
From 65 to 84 years	0
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

Patients will be identified and recruited from the department of Dermatology by clinical members of the study team. Posters will be displayed in GP surgeries, the dermatology clinic, on television screens in medical sciences building on the Foresterhill site to speed up the rate of recruitment in Dovobet arm.

### Pre-assignment

Screening details:

Participants who response to the poster and are identified as suitable and interested in taking part will receive the patient information sheet and be notified to the study team who will arrange for the consent to be taken. Patients will receive treatments as part of their routine clinical care.

### Period 1

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

Blinding implementation details:

Standard routine care

### Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Dovobet

Arm description:

One gram of ointment contains 50 micrograms of calcipotriol (as monohydrate) and 0.5 mg of betamethasone (as dipropionate).

Arm type	Standard Clinical Treatment
Investigational medicinal product name	Calcipotriol/betamethasone
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Ointment
Routes of administration	Topical use

Dosage and administration details:

Dovobet ointment should be applied to the affected area once daily.

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

Adalimumab is a recombinant human monoclonal antibody produced in Chinese Hamster Ovary cells.

Arm type	Standard Clinical Treatment
Investigational medicinal product name	Humira
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection/infusion
Routes of administration	Subcutaneous use

Dosage and administration details:

20mg solution for injection is pre-filled syringe.

<b>Arm title</b>	NB-UVB
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Arm description:

Narrowband NB-UVB phototherapy

Arm type	Standard Clinical Treatment
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No investigational medicinal product assigned in this arm

<b>Number of subjects in period 1</b>	Dovobet	Adalimumab	NB-UVB
Started	8	11	15
Completed	8	11	15

## Baseline characteristics

### Reporting groups

Reporting group title	Overall trial
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Reporting group description:

A breakdown of the age groups recruited are not available, only the total recruitment figure.

Reporting group values	Overall trial	Total	
Number of subjects	34	34	
Age categorical			
Units: Subjects			
In utero	0	0	
Preterm newborn infants (gestational age < 37 wks)	0	0	
Newborns (0-27 days)	0	0	
Infants and toddlers (28 days-23 months)	0	0	
Children (2-11 years)	0	0	
Adolescents (12-17 years)	0	0	
Adults (18-64 years)	34	34	
From 65-84 years	0	0	
85 years and over	0	0	
Gender categorical			
Units: Subjects			
Female	11	11	
Male	23	23	

## End points

### End points reporting groups

Reporting group title	Dovobet
Reporting group description:	One gram of ointment contains 50 micrograms of calcipotriol (as monohydrate) and 0.5 mg of betamethasone (as dipropionate).
Reporting group title	Adalimumab
Reporting group description:	Adalimumab is a recombinant human monoclonal antibody produced in Chinese Hamster Ovary cells.
Reporting group title	NB-UVB
Reporting group description:	Narrowband NB-UVB phototherapy

### Primary: Clinical-immunological correlation

End point title	Clinical-immunological correlation
End point description:	
End point type	Primary
End point timeframe:	Before and after receiving treatment.

End point values	Dovobet	Adalimumab	NB-UVB	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	8	11	15	
Units: Mann-Whitney U-test	8	11	15	

### Statistical analyses

Statistical analysis title	Two-tailed paired t-test
Statistical analysis description:	Statistical analysis were carried out using Prism GraphPad 5 for windows, V5.02 2008. A two-tailed paired t-test was used to compare proportions of cells in lesional vs nonlesional skin, blood of patients.
Comparison groups	Adalimumab v NB-UVB v Dovobet
Number of subjects included in analysis	34
Analysis specification	Pre-specified
Analysis type	other <sup>[1]</sup>
P-value	≤ 0.05
Method	Wilcoxon (Mann-Whitney)
Parameter estimate	Spearman correlation

Notes:

[1] - The Mann-Whitney U-test was used to compare the proportions of cells between blood and skin of patients and healthy controls.

## Adverse events

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### Adverse events information<sup>[1]</sup>

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Timeframe for reporting adverse events:

Once the investigator becomes aware that a SAE has occurred in a study participant, they will report it via Yellow Card Scheme to, REC, R&D and to the sponsor as per the University of Aberdeen SOP.

Assessment type	Systematic
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### Dictionary used

Dictionary name	N/A
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Dictionary version	0
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Frequency threshold for reporting non-serious adverse events: 5 %

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Notes:

[1] - There are no non-serious adverse events recorded for these results. It is expected that there will be at least one non-serious adverse event reported.

Justification: Not documented in final report.

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
30 March 2012	AM03 – To extend the study end date; increase the number of participants; additional advertising to increase recruitment in the Dovobet arm.

Notes:

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported