

# A comparison of the clinical efficacies of Intense Pulsed Light (IPL), PhotoDynamic Therapy (PDT) and adapalene in the treatment of mild to moderate acne vulgaris

<b>Submission date</b> 07/04/2008	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered
<b>Registration date</b> 30/05/2008	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 19/05/2022	<b>Condition category</b> Skin and Connective Tissue Diseases	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

**Plain English summary of protocol**  
Not provided at time of registration

## Contact information

**Type(s)**  
Scientific

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## Additional identifiers

**Clinical Trials Information System (CTIS)**  
2008-000475-25

**Protocol serial number**

## Study information

### Scientific Title

Randomised, controlled, double-blind, parallel group clinical trial evaluating the efficacies and safety of methyl-aminolevulinate photodynamic therapy (PDT-MAL) and intense pulsed light, administered as placebo-photodynamic therapy (PDT-placebo), compared with the efficacy of adapalene 0.1% gel in the treatment of adults with mild to moderate acne vulgaris

### Study objectives

Placebo photodynamic therapy (PDT) is at least as efficacious as adapalene 0.1% gel, and methyl-aminolevulinate (MAL)-PDT is more efficacious than either modality. MAL-PDT may also have a longer treatment-free period of acne remission.

On 11/02/2009 this record was updated to include amended trial dates. The initial trial dates at the time of registration were:

Initial anticipated start date: 01/06/2008

Initial anticipated end date: 01/06/2012

On 04/11/2009 this record was extensively updated. All updates can be found under the relevant field with the above update date. Please also note that the application regimen of MAL /placebo has been changed from 30 minutes without occlusion to 60 minutes with occlusion.

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Submitted to the South Wales Research Ethics Committee approval pending as of 11/02/2009

### Study design

Double-blind parallel assignment randomised active controlled efficacy/safety study

### Primary study design

Interventional

### Study type(s)

Treatment

### Health condition(s) or problem(s) studied

Acne

### Interventions

Treatment schedule:

PDT-MAL arm: Full-face treatments every 2 weeks x 4

PDT-Placebo arm: Full-face treatments every 2 weeks x 4

Adapalene group: Participants instructed to use adapalene as monotherapy nightly

MAL cream (Metvix®):

For this research, we would like to achieve a good balance between efficacy, short treatment

times and very minimal side-effects. Hence, short-contact (60 minutes) MAL cream will be used as the photosensitiser in this study.

Metvix® will be applied as a 1-mm film to the face, with occlusion, avoiding the areas immediately around the eyes, nose and lips. Patients will sit for 60 minutes in a darkened room. Prior to illumination, subjects will be asked to wash their faces using a gentle cleanser.

Placebo cream (Unguentum M®):

Unguentum M® is a cream containing liquid paraffin, white soft paraffin and saturated neutral oil. It also contains cetostearyl alcohol and glyceryl monostearate. Unguentum M® contains many of the excipients in Metvix®. 50 g tubes will be dispensed by the Pharmacy Department, University Hospital of Wales for patients within the placebo group at each visit. It will not be re-packaged. Application to the subject's face will be identical to MAL.

IPL Device Parameters:

Variable Pulsed Light is an IPL system that allows the operator to change the width, delay and number of the micropulses. The Energist ULTRA VPL System (Energist Ltd., UK) will be used for this study.

Device Settings: 530-950 nm cut-off filter; Double passes of: 20-40 J/cm<sup>2</sup>, 15 pulses, 5 ms duration, 20 ms delay (20 J/cm<sup>2</sup>, 15 x 5 x 20).

Adapalene gel (Differin® Gel 0.1% w/w):

Patients will be instructed to apply a thin film of adapalene gel to their faces, after washing it, nightly, avoiding the areas just around the eyes, nostrils and mouth. They will also be told and given written information about the possible side-effects in their patient information leaflets.

Added 04/11/09:

The number of visits will depend upon which arm of the research project the patient is involved in: the PDT group will make eight visits over 16 weeks and the adapalene group will make five visits over 16 weeks.

Treatment compliance:

Patients using adapalene will be reminded to apply their medication by methods such as weekly emails. On the assessment days, patients will be asked to bring their adapalene tubes, which will be weighed. The other treatments will be directly administered by the physician.

Concomitant treatment:

Sunblock lotion (SPF 30; Delph Lotion) will be provided by the department and should be used daily all over the face for the entire duration of the study.

An emollient (to be applied twice a day for a total of 5 days) will be given to all patients in the IPL groups post treatment.

Patients in the PDT-MAL and the PDT-placebo groups will also be asked to keep daily diary cards for the 44 weeks after the 4-month study period to document the time and severity of relapse and treatments used.

The follow-up period is 44 weeks beyond the end of the 16-week treatment period. The two follow-up appointments are at week 38 and 60

Project coordinator details

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### **Intervention Type**

Drug

### **Phase**

Not Applicable

### **Drug/device/biological/vaccine name(s)**

Adapalene

### **Primary outcome(s)**

Current information as of 04/11/2009:

Lesion counts. The face will be divided into five areas. The types of lesions are classified as macules, comedones, papules, pustules, nodules and cysts. These will be counted in at least one of five possible facial cosmetic units before treatment. Subsequent lesion counts will be repeated in the chosen quadrant.

Outcomes will be measured at baseline, weeks 8, 11 and 16 in phase 1 (treatment phase) and weeks 38 and 60 for phase 2 (follow-up phase, PDT arms only).

Initial information at time of registration:

Lesion counts at baseline, Week 12 and 16, Month 7\*, 10\*, 13\* and 16\*.

\*Follow-up for Months 7 to 16 applies only to the PDT arms.

### **Key secondary outcome(s)**

Current information as of 04/11/2009:

1. Leeds Revised Acne Grading System scores measured at baseline, week 8, 11, 16, 38 and 60
2. Seborrhoea measured using SM-815 sebumeter measured at baseline, week 8, 11, 16, 38 and 60
3. P. acnes counts and culture measured at baseline, week 8, 11, 16 and 60
4. P. acnes fluorescence photography measured at baseline, week 8, 11, 16 and 60
5. Acne-specific Quality of Life Assessments (Acne QoL) measured at baseline, week 8, 11, 16 and 60
6. Dermatology Life Quality Index (DLQI) measured at baseline, week 8, 11, 16 and 60

7. The Family Dermatology Life Quality index (FDLQI) measured at baseline, week 16 and 60
8. Pain scores measured at day 1, week 3, 5, and 7
9. Subjective global assessment of acne improvement measured at baseline, week 8, 11 and 16

Initial information at time of registration:

1. Leeds Revised Acne Grading System scores at baseline, Week 12 and 16, Month 7\*, 10\*, 13\* and 16\*
2. Seborrhoea at baseline, Week 12 and 16, Month 7\*, 10\*, 13\* and 16\*
3. P. acnes counts at baseline and Week 7
4. P. acnes fluorescence photography. For all arms, this will be carried out at baseline, Weeks 7, 12 and 16, Months 7\*, 10\*, 13\* and 16\*
5. Dermatology Life Quality Index (DLQI) and/or Acne Quality of Life scale at baseline, Week 12 and 16
6. Pain scores (only in PDT-MAL and PDT-Placebo arms), assessed by a visual analogue scale (VAS) at Day 1 (Week 1), Week 3, 5 and 7
7. Subjective global assessment of acne improvement at baseline, Weeks 12 and 16

\*Follow-up for Months 7 to 16 applies only to the PDT arms.

## **Completion date**

13/08/2012

## **Eligibility**

### **Key inclusion criteria**

Current information as of 04/11/2009:

1. Aged 18 - 50 years, both males and females
2. Mild to moderate facial (face = area from hair line to jaw line) acne vulgaris with at least 15 inflammatory lesions and/or non-inflammatory lesions, but no more than three nodulocystic lesions. Thus, not exceeding Leeds grade 7.
3. Patients willing to have only their face treated
4. Skin phototypes III
5. Patients who are willing and able to provide written informed consent
6. Patients who agree to not use sun-beds or undergo any UV light treatment for 4 weeks prior to entering the study and are willing to minimise the amount of exposure to direct sunlight for the duration of the study
7. Patients who have access to email accounts and are willing to reveal their email addresses to the study team

Initial information at time of registration

1. Aged 18 - 50 years, both males and females
2. Mild to moderate facial (face = area from hair line to jaw line) acne vulgaris with at least 15 inflammatory lesions and/or non-inflammatory lesions, but no more than three nodulocystic lesions. Thus, not exceeding Leeds grade 7.
3. Patients willing to have only their face treated
4. Skin phototypes III
5. Patients who are willing and able to provide written informed consent
6. Patients who agree to not use sun-beds or undergo any UV light treatment for 4 weeks prior to entering the study and are willing to minimise the amount of exposure to direct sunlight for

the duration of the study

7. Patients who own a mobile phone and are willing to reveal their number to and receive text messages from the study team

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Upper age limit**

50 years

**Sex**

All

**Total final enrolment**

37

**Key exclusion criteria**

Current information as of 04/11/2009:

1. Severe acne (>3 nodules and/or cysts present) or presence of scarring
2. Pregnancy and women contemplating pregnancy
3. Lactating females
4. Use of anti-androgen containing contraceptives
5. Mental incompetence
6. History of hypersensitivity to any of the study drugs or their excipients. i.e. adapalene, Metvix™ (e.g. peanut oil, soya), Unguentum M®.
7. Keloids or tendency to heal with keloids
8. Cosmetic treatment:
  - 8.1. In the previous year with collagen, dermabrasion and laser resurfacing.
  - 8.2. Alpha hydroxyl acids within 3 months
  - 8.3. Microdermabrasion within 3 months
9. Photosensitivity disorders e.g. solar urticaria
  - 9.1. Porphyrins or allergy to porphyrins
  - 9.2. Epilepsy
10. Systemic retinoid use in the past 12 months
11. Use of Vitamin A supplements > 2000 IU /day
12. Oral antibiotics and topical retinoids for preceding 4 weeks
13. Systemic medications such as: steroids, immunosuppressant, statins and preparations containing St Johns wort
14. Oral photosensitisers within last 4 weeks (see Patient CRF)
15. Previous treatment with IPL or lasers to the areas of interest within the last 12 months
16. Severe systemic diseases such as: impaired renal or liver function; regional enteritis or ulcerative colitis; a history of antibiotic-associated colitis; severe cardiovascular, neurological

- disease, or any other disease that may interfere with the evaluation of the study medications
17. Patients with psoriasis, acne rosacea, allergic rashes, bacterial, viral or fungal infections of the facial skin, or other diseases of the facial skin
  18. Patients with mild to moderate acne who have not tried over the counter treatment
  19. Patients who are unlikely to be available for the duration of the follow-up
  20. Persons involved in another clinical trial for the duration of this study
  21. Persons who have another member of their household taking part in this study

Initial information at time of registration:

1. Severe acne (>2 nodules and/or cysts present) or presence of scarring
2. Pregnancy
3. Use of anti-androgen containing contraceptives
4. Mental incompetence
5. History of hypersensitivity to any of the study drugs or their excipients. i.e. adapalene, Metvix™ (e.g. peanut oil, soya), Unguentum M®
6. Keloids or tendency to heal with keloids
7. Cosmetic treatment:
  - 7.1. In the previous year with collagen, dermabrasion and laser resurfacing
  - 7.2. Alpha hydroxyl acids within the last month
  - 7.3. Microdermabrasion within the last 3 months
8. Photosensitivity disorders e.g. solar urticaria
  - 8.1. Porphyrins or allergy to porphyrins
  - 8.2. Epilepsy
9. Systemic retinoid use in the past 12 months
10. Use of Vitamin A supplements >2000 IU /day
11. Oral antibiotics and topical retinoids for preceding 4 weeks
12. Systemic medications such as: steroids, immunosuppressant, statins and preparations containing St. John's wort
13. Oral photosensitisers within last 4 weeks
14. Previous treatment with intense pulsed light (IPL) or lasers to the areas of interest within the last 12 months
15. Severe systemic diseases such as: impaired renal or liver function; regional enteritis or ulcerative colitis; a history of antibiotic-associated colitis; severe cardiovascular, neurological disease, or any other disease that may interfere with the evaluation of the study medications
16. Patients with psoriasis, acne rosacea, allergic rashes, bacterial, viral or fungal infections of the facial skin, or other diseases of the facial skin
17. Patients who are unlikely to be available for the duration of the follow-up
18. Persons involved in another clinical trial for the duration of this study
19. Persons who have another member of their household taking part in this study

**Date of first enrolment**

01/01/2010

**Date of final enrolment**

01/06/2011

## **Locations**

**Countries of recruitment**

United Kingdom

Wales

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## Sponsor information

**Organisation**  
Cardiff University (UK)

**ROR**  
<https://ror.org/03kk7td41>

## Funder(s)

**Funder type**  
University/education

**Funder Name**  
Cardiff University (UK) - Department of Dermatology

## Results and Publications

**Individual participant data (IPD) sharing plan**  
Not provided at time of registration

**IPD sharing plan summary**  
Not provided at time of registration

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Basic results</a>		15/06/2019	19/05/2022	No	No