HI-Light
Vitiligo Trial

Home Interventions and Light therapy for the treatment of vitiligo

Results of the UK DCTN HI-Light Vitiligo Trial

This newsletter gives a brief overview of the trial and its results, as well as details on how the findings may translate into clinical practice. It also provides us with the opportunity to thank everyone who was involved in recruiting patients - it is testament to all your hard work that the trial has been a success.

BACKGROUND OF THE TRIAL

Vitiligo can have a major impact on quality of life, particularly when it occurs on highly visible sites such as the face and hands.

Guidelines typically recommend the use of topical corticosteroid (TCS) and narrowband ultraviolet-B light (NB-UVB), either alone or in combination. Whilst clinical studies suggest that treating vitiligo in its initial stages may yield better responses, in the UK NB-UVB treatment is usually reserved for those with extensive, established vitiligo, and is delivered using whole-body phototherapy units in a secondary care setting. Hand-held units provide an opportunity to deliver this treatment at home for early and limited vitiligo.

Although hand-held NB-UVB units are available on the open market for private purchase, studies to date have been retrospective, or too small to inform their use in clinical practice.

The HI-light vitiligo trial was developed in response to a commissioned call by the NIHR HTA following the Vitiligo Priority Setting Partnership.

AIM

To evaluate the comparative safety and effectiveness of home-based interventions (potent TCS and hand-held NB-UVB light) for the management of early and limited vitiligo in adults and children.

OBJECTIVES

Primary Objective

To assess the comparative safety and effectiveness of:

- NB-UVB light compared to potent TCS
- NB-UVB light and potent TCS compared to potent TCS alone

Secondary Objectives

- To assess duration of response post-treatment
- To compare the cost-effectiveness of the treatment
- To understand barriers and facilitate adoption within the NHS

TREATMENT GROUPS

Participants were randomised to one of three intervention groups:

Corticosteroid only: Potent TCS (mometasone furoate 0.1% ointment) & dummy NB-UVB light

Light therapy only: Vehicle ointment & NB-UVB light

Combination therapy: Potent TCS (mometasone furoate 0.1% ointment) & NB-UVB light

Treatments were used for 9 months, with a 12 month follow-up period.

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NOTTINGHAM CLINICAL TRIAL UNIT

PATIENT INVOLVEMENT

- People with vitiligo helped to prioritise the research questions being addressed by this trial through a James Lind Alliance Priority Setting Partnership (Br J Dermatol. 164: 530–536. doi: 10.1111/j.1365-2133.2010.10160.x)
- A patient representative was a member of the Trial Development Group, a co-app on the funding award and has contributed to the design and conduct of the trial throughout, including oversight of the pilot trial, and development of the training videos.

HI-light results reveal meeting

- Patients contributed to the choice of outcome measures, through involvement in development of the core outcome set for vitiligo and in development and validation of the primary outcome scale (VNS). A panel of three people with vitiligo assessed the digital images to provide blinded assessment of the primary outcome.
- Patient partners attended the results reveal meeting to help inform the interpretation of the trial.
- The trial was supported by the Vitiligo Society and Vitiligo Support UK.

PRIMARY OUTCOME MEASURE

Whilst vitiligo trials have traditionally measured percentage repigmentation, this approach has been criticised for not taking into account the visual appearance of the skin and might not be a good representation of what people with vitiligo actually want as a treatment outcome. The Vitiligo Noticeability Scale (VNS) assesses treatment response from the patient perspective by asking about the noticeability of the vitiligo.

In the HI-Light Trial we used the VNS as the primary outcome measure, and defined treatment success as a score of 4 or 5 at the 'target patch' (a patch that had changed in the last 12 months and that the participant would most like to see an improvement in).

Vitiligo Noticeability Scale (VNS)

Compared to before treatment, how noticeable is the vitiligo now?

1 More noticeable
2 As noticeable
3 Slightly less noticeable
4 A lot less noticeable
5 No longer noticeable

Scoring
1-2 = treatment not successful
3 = treatment partially successful
4-5 = treatment successful

Further details: nottingham.ac.uk/research/groups/cebd/projects/2vitiligo/vitiligo-outcome-measures.aspx

RECRUITMENT

The minimum clinically important difference between the groups was informed by a survey of the clinical membership of the UK DCTN. Based on the assumption that 15% of participants in the TCS group would achieve treatment success, and allowing for ≤15% missing primary outcome data, the trial was powered to detect a clinically significant absolute difference between groups of 20%, with 2.5% two-sided alpha and 90% power.

location of HI-light recruiting centre

Recruitment took place between May 2016 and September 2017. The trial recruited a total of 517 participants (398 adults and 119 children) across 16 sites in England, Scotland and Wales.

A big THANK YOU to all the staff at the recruiting sites who were involved in identifying, screening and recruiting participants and collecting their data. Without your help, we wouldn't have been able to answer these important clinical questions.

RESULTS

Baseline characteristics were well balanced across treatment groups. The target patch was located on the head and neck in 31% of participants, hands and feet in 32% and the rest of the body in 37%.

Primary outcome: Proportions of participants who reported a treatment success for the target patch at 9 months was 20/119 (17%) for the TCS only group, 27/123 (22%) for NB-UVB only group and 34/128 (27%) for the combination therapy group (Table 1).

Table 1: Primary outcome - VNS at end of treatment (9 months)

	TCS only (n=173)	NB-UVB only (n=169)	Combination (n = 175)
Participants with primary outcome at 9 months	**119 (69%)**	**123 (73%)**	**128 (73%)**
Patient response to VNS scale at 9 months			
More noticeable	18(15%)	27(22%)	17(13%)
As noticeable	53(45%)	33(27%)	32(25%)
Slightly less noticeable	28(24%)	36(29%)	45(35%)
A lot less noticeable	15(13%)	25(20%)	27(21%)
No longer noticeable	5(4%)	2(2%)	7(5%)
Patient reported treatment success* using VNS scale at 9 months	**20(17%)**	**27(22%)**	**34 (27%)**

Using intention-to-treat (ITT) analysis for the primary outcome, combination therapy was significantly better than potent TCS only (adjusted odds ratio 1.93 (95% CI 1.02, 3.68; p= 0.032)). The absolute risk difference in treatment success of 10.9% (Figure 1)was smaller than the 20% difference that the trial was originally powered to detect.

NB-UVB alone was not significantly better than potent TCS alone (adjusted odds ratio 1.44 (95% CI 0.77, 2.70; p= 0.290)). Subgroup analysis found no differential treatment effects for adults/children, body region of the vitiligo, duration of vitiligo or hypomelanotic patches (as opposed to amelanotic patches).

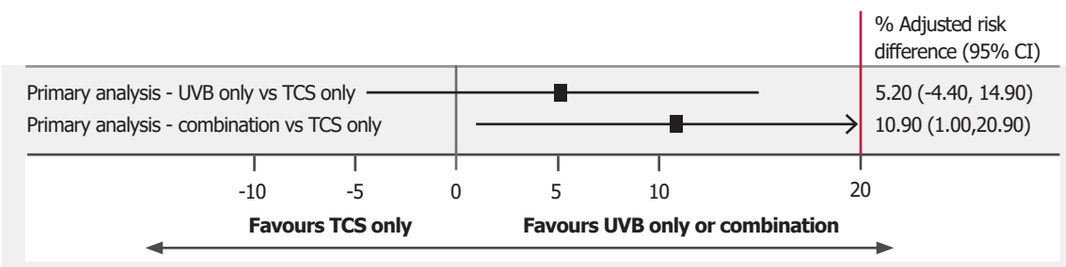
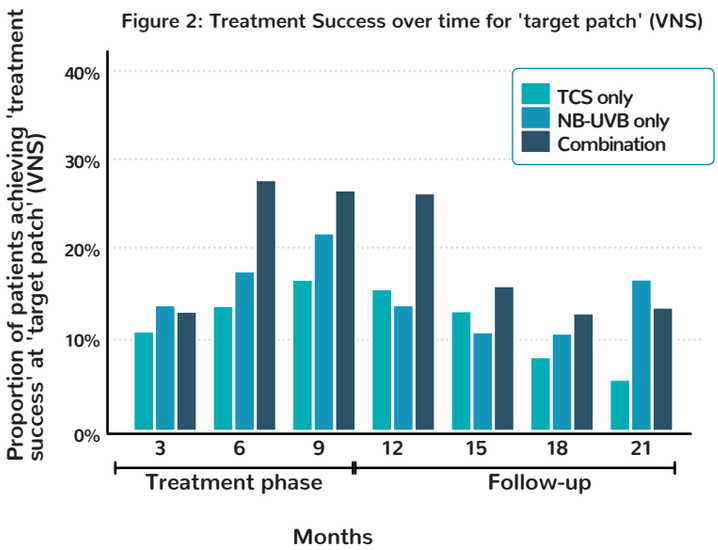


Figure 1: Primary Outcome analysis (using VNS)

For percentage re-pigmentation, the results were consistent with the primary outcome (VNS success), but overall rates of treatment success were lower: 10 (9%) for the TCS only group, 11 (10%) for NB-UVB only group and 21 (18%) for the combination group. Adjusted odds ratio 2.19 (95% CI 1.15, 4.15) for combination compared with TCS only, and 1.11 (95% CI 0.54, 2.32) for UVB only compared with TCS only.

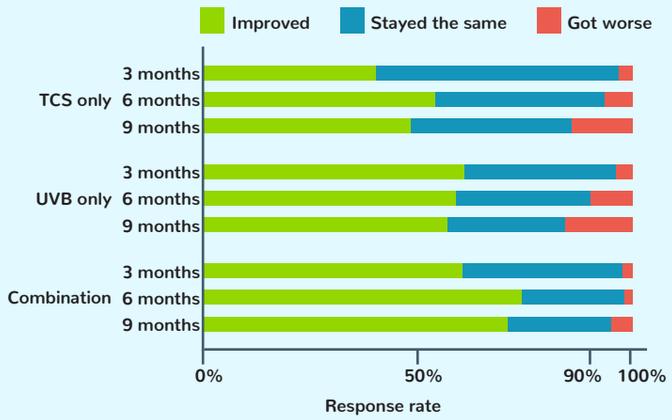
Figure 2: Treatment Success over time for 'target patch' (VNS)



Participants who adhered to treatment interventions by ≥75% of expected treatments were more likely to achieve a treatment success. Adjusted odds ratio 2.73 (95% CI 1.24, 6.02) for combination compared with TCS only, and 1.52 (95% CI 0.56, 4.11) for UVB only compared with TCS only.

Assessment of the VNS scores at 9 months by blinded patient assessors using digital images of the target patch supported the primary outcome as did blinded assessment by a dermatologist for percentage repigmentation.

Figure 3: Nurse assessed onset of treatment response



Onset of treatment response (stopped spreading or improved) was achieved by almost all participants after 3 months of treatment, regardless of treatment group (Figure 3).

In the long-term follow-up phase of the trial, just over 40% of participants reported a worsening of their vitiligo after 12 months relative to end of treatment, suggesting that maintenance treatment may be required (Figure 2).

TREATMENT SAFETY

A total of 124 (25%) participants reported 206 related-adverse events: 33 events from 24 participants (14%) in the TCS only group; 69 events from 48 participants (28%) in the NB-UVB only group and 104 events from 52 participants (30%) in the combination group. Grade 3 or 4 erythema was experienced by 62 (12%) participants. Transient skin thinning was observed in 13 (2.5%) participants. No serious adverse treatment effects were observed.

INTERPRETATION

- Combination treatment with both NB-UVB and potent TCS is superior to potent TCS alone. Overall, 62% of participants receiving combination therapy achieved at least partial treatment response by 9 months (27% treatment success, 35% partial treatment response), but the value of 'partial treatment response' to people with vitiligo is unclear.
- Home use of hand-held NB-UVB is relatively safe and acceptable to patients but requires training and support from healthcare professionals.
- First line treatment with potent TCS (used one week on, one week off) is safe to use and appropriate as first-line treatment in both adults and children, including sensitive sites, such as around the eyes.
- 3 months appears to be an appropriate time-point to assess whether or not a treatment is working – if there is no response after 3 months of treatment then it is unlikely that prolonged treatment will be effective.
- Maintenance treatment is likely to be needed to retain pigmentation gained. Further research is needed to establish the most effective maintenance regimens.
- Hand-held NB-UVB units are not currenlty available in most NHS hospitals in the UK. Further work is required to establish the most appropriate delivery model for use of home light therapy within dermatology services.

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For more information visit:
vitiligostudy.org.uk

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