Comparison of intense pulsed light and laser treatment of telangiectases in systemic sclerosis

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Background
• Cutaneous telangiectases are one of the more visible manifestations of the microvascular abnormalities of systemic sclerosis (SSc).
• These occur most commonly on the face, neck and upper limbs.
• Telangiectases are distressing for patients and are associated with body image dissatisfaction [1].
• Current treatments include pulsed dye laser (PDL) therapy which can be painful and does not prevent recurrences. Side effects can include transient bruising and hypopigmentation.
• An alternative is intense pulsed light (IPL) therapy, as suggested by pilot study [2].

Aim
• To carry out an intra-patient comparison of PDL and IPL treatment of SSc-related telangiectases to determine relative efficacy and tolerability.

Patients
• 20 patients (mean 59 (range 49–72) years; 16 male) with SSc and approximately bilaterally-symmetric areas (face or upper limb) of telangiectases. One patient withdrew after baseline.

Methods
• Participants were randomised to receive IPL to one side of the face or body, PDL to the other.
• Participants attended according to the visit schedule shown in Figure 1.

Outcome measures
• At each visit, excluding the initial patch test, and prior to treatment the following were performed:
  • Clinical photographs including close-ups and wide area shots (see Figure 2).
  • Dermoscopy (×10 magnification photographs) of 3 lesions per side per patient (see Figure 3).
• Dual-wavelength laser Doppler imaging to map blood perfusion in the treated areas.

Analysis
• Two scorers independently rated the relative appearance of telangiectases (photographs and dermoscopy) using the Likert scale shown in Figure 4.
• Photographs and dermoscopy images assessed by comparison with earlier time points.

Results
Photographs & dermoscopy
• Mean scores and 95% confidence intervals for images relating to IPL and PDL treated regions are shown in Table 1.
• Positive scores suggest improvement in appearance at almost all time points, for both PDL and IPL.

Laser Doppler imaging
• When comparing baseline (week 0) perfusion with that at week 16 for the 2 treatments, significant differences were found for PDL (p=0.009) but not for IPL (p=0.053).
• ANOVA showed no significant difference between PDL and IPL treatment response at any time point (data not shown).

Side effects
• No reported side effects from IPL treatment; PDL treatment caused transient bruising in most cases.

Conclusions
• IPL and PDL are both effective treatments for SSc-related telangiectases, as assessed in this intra-patient study by photographs, dermoscopy and laser Doppler imaging.
• PDL therapy has marginally better outcomes in terms of appearance than IPL treatment.
• Both treatments were well tolerated.
• Side effects and patient preference have a role in determining if IPL is a viable, routine alternative to PDL treatment.

Acknowledgements
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References

Table 1: Mean scores (95% confidence intervals) from comparison of photographs or dermoscopy images of telangiectases at two time points.

<table>
<thead>
<tr>
<th>Comparison</th>
<th>IPL</th>
<th>PDL</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 16 vs baseline (n=16)</td>
<td>1.2 (0.9, 1.6)</td>
<td>1.0 (0.6, 1.4)</td>
<td>0.06</td>
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<tr>
<td>Week 14 vs baseline (n=16)</td>
<td>1.4 (1.1, 1.8)</td>
<td>1.2 (0.8, 1.6)</td>
<td>0.42</td>
</tr>
</tbody>
</table>

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Figure 1: Participant visit schedule

Figure 2: Photographs of treated areas of telangiectases. Top row: IPL treatment; (Left) week 0, (Right) week 16. Bottom row: PDL treatment; (Left) week 0, (Right) week 16.

Figure 3: Dermoscopy images of a single telangiectasis. (Left) week 0, (Right) week 16.

Figure 4: Likert scale for comparing photographs or dermoscopy images of telangiectases at two time points.

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0 No change
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