A CLINICAL TRIAL TO EVALUATE AN ANTI-AGING REGIMEN ON WOMEN WITH MILD TO MODERATE PHOTODAMAGED SKIN USING A NOVEL APPROACH: PHOTOAGING INDEX (PAI)

INTRODUCTION

Photodamage accounts for most of the aging symptoms observed on habitually sun-exposed skin. The purpose of this study was to evaluate an anti-aging regimen comprised of a cream containing 10.5% Vitamin C, a SPF 50 Sunscreen and a PM cream containing botanical oil blends. The Photoaging Index (PAI) and the subgroup of 3 indexes (texture, color, and facial definition) were developed by taking composite scores and using them to assess the severity of photodamage on the face.

METHODS

- This 12-week clinical study included 57 women, aged 30 to 55 years (mean age 45.5) with photodamaged facial skin.
- Efficacy was assessed using clinical grading of photo-aging parameters including fine lines, wrinkles, skin tone evenness, texture/smoothness, hyperpigmentation, radiance, firmness, elasticity, and overall appearance at baseline, weeks 2, 4, 8 and 12.
- Tolerability was also evaluated by clinical assessment of irritation parameters.
- Included in the study was VISIA CR imaging, image analysis of UV spots and self-assessment questionnaires.
- The PAI was developed and validated as a composite score, a linear function of 7 attributes, which assesses the severity of photo-damage on the face. It combines the extent of photoaging in the texture, color, and facial definition of the skin into a value of 0–9 scale (Table 1).

RESULTS

- The results from this clinical study indicate that this anti-aging regimen was effective in improving fine lines, wrinkles, skin tone evenness, texture/smoothness, hyperpigmentation, radiance, firmness, elasticity, and overall appearance after 12 weeks (Graph 1).
- Furthermore, use of this regimen produced a statistically significant improvement in the PAI, texture index, color index, and facial definition index after 12 weeks (Graph 2).
- The self-assessment questionnaires indicated positive test product performance over the course of the study as indicated by the “performing favorably” designation for all assessed attributes and time points.

CONCLUSION

A statistically significant improvement was found in fine lines, wrinkles, skin tone evenness, texture/smoothness, hyperpigmentation, radiance, firmness, elasticity, and overall appearance after 12 weeks of this regimen use.

A significant improvement in the Photoaging Index (Figure 1), texture index, color index, and facial definition index (Figure 3) was observed after 12 weeks.

UV Spot image analysis showed statistically significant improvement for Total Area and Intensity at Week 12 (Graph 3) (Figure 2).

Results from the self-assessment questionnaire analysis indicated the regimen was well-perceived by subjects.

At week 12, 83% of subjects felt their visible signs of aging skin appear corrected, 93% of subjects felt their overall appearance and quality of skin is improved and 91% of subjects were overall satisfied with the test product.

This regimen was tolerated well by the study panel throughout the twelve week study period.

Table 1: Photoaging Index (PAI) as a linear function of 7 attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Week 8</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Appearance</td>
<td>11%</td>
<td>14%</td>
</tr>
<tr>
<td>Fine lines</td>
<td>16%</td>
<td>18%</td>
</tr>
<tr>
<td>Hyperpigmentation</td>
<td>17%</td>
<td>19%</td>
</tr>
<tr>
<td>Texture/Smoothness</td>
<td>15%</td>
<td>16%</td>
</tr>
<tr>
<td>Skin tone evenness</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>Elasticity</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>Firmness</td>
<td>11%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Graph 1: Statistically Significant Improvement of Photoaging Index (PAI) attributes vs Overall Appearance when compared to baseline

Graph 2: Statistically Significant Improvement in index calculations when compared to baseline

Graph 3: Statistical Improvement of the Visia UV Spot Total Area and Intensity using Image Analysis

« The authors declare no conflict of interest »

Susana Raab1, Margarita Yatskayer1, Valerie Robert1, Lily Jiang2, Yan Liu2, Christian Oresajo1

L’Oréal Research and Innovation, Clark, NJ USA 1
Stephens and Associates, Inc., Richardson, TX USA 2

References