

EVALUATION OF IMAGE BLANC COMPLEXION LIGHTNER AND IMAGE BLANC SPOT LIGHTNER FOR HYPERPIGMENTATION IN FACE AND NECK

ARSIWALA S, TAHILIANI S, JERAJANI H, CHANDRASHEKHAR BS, AURANGABADKAR S, KOHLI M, SAVARDEKAR P, SARANGI K, KHARKAR RD AND SHAH F

Received: 21 February 2013, Revised and Accepted: 21 March 2013

ABSTRACT

Facial hyperpigmentation is a common, but challenging cosmetic condition to treat in skin of color. Image Blanc is a serum containing a core anti-ageing technology (Regen 16) that address all known major mechanisms involved in skin pigmentation. 'Image Blanc Complexion Lightner', is a corrective anti-ageing serum with complexion lightner actives & 'Image Blanc Spot Lightner', is an anti-spots concentrate for targeted application. An open labelled, prospective, multi-centric clinical study was conducted to determine the efficacy and safety of Image Blanc 'Complexion Lightner' and 'Spot Lightner' in the treatment of hyperpigmentation on face and neck twice daily for 12 weeks with 12 patients in each arm. The patients were assessed for Melasma Area and Severity Index (MASI) score for darkness, Physicians and Patient Global Assessment Grade for improvement in complexion or dark spots, improvement in 'Quality of Life', Patient Satisfaction Questionnaire and photographic assessment of the affected facial region at baseline, 6 weeks and 12 weeks. After 12 weeks of treatment by Image Blanc *Complexion Lightner*, the average MASI score at baseline was reduced to 1.4 from 2.4 at baseline, average grade for Physician's global assessment improved from 1 at baseline to 2.4 and with treatment of Image Blanc *Spot Lightner* it was reduced to 1.4 from 2.6 at baseline, average grade for Physician's global assessment improved from 1 at baseline to 2.8. Patient's global assessment also showed similar grades of improvement with Image Blanc *Complexion Lightner* and Image Blanc *Spot Lightner*. An overall improvement in 'Quality of Life' in terms of improvement in the complexion and luminance at the end of 12 weeks (Grade 3.3, 3.2) was noted by Image Blanc *Complexion Lightner* and Image Blanc *Spot Lightner* respectively. The overall 'Patient Satisfaction' was found to be good at the end of 12 weeks of treatment (Grade 2.6, 2.4) at the end of treatment with Image Blanc *Complexion Lightner* and Image Blanc *Spot Lightner* respectively. One patient on Image Blanc 'Spot Lightner' showed acneform eruptions and darkening. The results of this study show that Image Blanc Complexion Lightner and Image Blanc Spot Lightner have a good potential for the management of hyperpigmentation disorders.

Keywords: Hyperpigmentation, Image Blanc Complexion Lightner, Image Blanc Spot Lightner, Melasma Area and Severity Index (MASI) score

INTRODUCTION

The quest for a whiter shade of pale dates back to ancient civilisations, when a pale complexion was associated with aristocratic lineage. During the Tang dynasty (618-907), Chinese women used ground pearl powder as whitening make-up. In ancient Persia, field workers bleached their skin with pure natural hydroquinone to keep it from darkening under the sun. In Europe, during the Renaissance, lead and mercury compounds applied to the face, neck, and chest, became popular as peel-off skin Lightners. Unknown at the time, many of the earlier lightening ingredients were in fact toxic and this led to their ban for cosmetic use.[1]

However, even nowadays, skin lightening remains popular goal in skin care. A fair skin tone is increasingly associated with a healthy skin and youthful appearance. The field of potential applications for lightening products has grown accordingly to include more specific pigmentation concerns, such as lentigines (*dark spots appearing, with older age, on sun exposed skin*), freckles (*irregular grouping of pigment containing cells or melanocytes*), melasma (*hormonal hyperpigmentation*), and inflammation-related to hyperpigmentation. Skin Lightners are now perceived as multi-usage cosmetic products although with some geographical and cultural differences, Westerners seek them essentially for their anti-ageing benefits, while Asian people rather use them for general lightening of their skin.

With advancement of science over recent decades, our knowledge of the physiology of skin pigmentation has improved drastically. As we better understand the complex regulation of this physiological process, it is becoming clear that the future of lightening skin care lies in the combination of several actives addressing simultaneously and complementarily the various facets of skin pigmentation. In fact, the trend worldwide is now to offer skin care that combines multiple modulators of pigmentation with anti-ageing actives. This makes sense. After all factors contributing to skin ageing, such as UV exposure (1) hormones (2) oxidation and inflammatory reactions

also affect skin pigmentation, and irregular skin pigmentation, and irregular skin pigmentation is seen increasingly with age. (3) Oxidative stress and inflammation in the skin can result from both normal and pathological reactions and whatever the cause, both the processes have a big influence on skin pigmentation and on skin ageing. Although the fundamental mechanisms are still poorly understood, a growing body of evidence points toward reactive oxygen species (ROS) as one of the primary determinants of aging.(4) There are effective ways of modulating these mechanisms with a combination of selected commercially available actives formulated in a serum (Image Blanc). The cosmetic active molecules are derived from vegetable, marine, peptides, and biotechnological sources with complementary biological properties for optimum effectiveness.

In Photoaging process, the equilibrium between the downregulation and the upregulation of 16 certain mechanisms is lost, and that causes the physical signs of aging. This serum (Image Blanc) contains a core anti-ageing technology (Regen 16) that address all known major mechanisms involved in skin pigmentation. Regen-16 is a patented technology and combines major active ingredients as a base for fighting the signs of skin aging. This includes (1) Abyssine, (2) Hyaluronic Acid, (3) Bisabolol, (4) Créatine, (5) Euk-134, (6) Flavagrum, (7) Glycerin, (8) LNST, (9) Moist 24, (10) MRT EX, (11) Net DG, (12) 330 Regederme, (13) Sepilift, (14) Squalene, (15) Tyrostat, and (16) Vitamin E. ⁵

'Image Blanc *Complexion Lightner*', is a corrective anti-ageing serum with complexion lightner actives (Adenosphere, Actiwhite, alpha-lipoic acid, B-white, Chronoline, PhytoCell Tec ALP, Whitenessence), targeting all the mechanisms responsible for skin pigmentation, while simultaneously preventing premature aging with the Regen-16 technology.

'Image Blanc *Spot Lightner*', is an anti-spots concentrate for targeted application, consists of concentrate of cosmetic active ingredients

(Biobenefit, Exossine T, HerbEX Licorice, Neutrazen, Wonderlight) targeting dark spots, while simultaneously preventing premature aging with the Regen-16 technology.

This integrated approach to skin pigmentation was tested in Indian patients by conducting a clinical study to determine the efficacy and safety of Image Blanc 'Complexion Lightner' and 'Spot Lightner' in the treatment of hyperpigmentation disorders. The aim of the study was to assess the efficacy, safety and quality of life parameters after treatment with Image Blanc as Complexion Lightner and Spot Lightner in patients with hyperpigmentation on face and neck.

Study Design

This was an open labelled, prospective, multi-centric study conducted in patients with hyperpigmentation on face and neck. This was conducted in accordance to the ICH-GCP guidelines with approval from Independent Ethics Committee. Written Informed consent was obtained from these patients after a thorough explanation of the study.

Patients with hyper pigmentation or dark spots of the face and neck focal or global were included in the study. These patients agreed to restrain from prolonged exposure to the sun for the length of the study. Patients were excluded from the study if they had any history of hypersensitivity to any ingredients, were pregnant or lactating women, already applying anti-aging, skin lightening or Alpha hydroxy acids (AHA) based or retinol based cosmetics in the last 3 months, having any dermatological disorder of face or have planned for any surgical treatment of the face.

Study Drug and Treatment

Patients with hyperpigmentation were provided with Image Blanc *Complexion Lightner* or Image Blanc *Spot Lightner* and were instructed to apply the formulation twice a day after the use of a cleanser for a period of 12 weeks. Patients enrolled in the Image Blanc *Spot Lightner* group were instructed to apply the formulation only on the affected area on the face and neck with dark spots.

All patients were instructed to apply Hydra-Seal SPF 25 (Moisturizer with Sunscreen) liberally enough to all sun-exposed areas that it forms a film when initially applied. It should be applied at least a half an hour before going out in the sun since it takes 20-30 minutes for sunscreen to be absorbed by the skin.

Study Methodology

After confirming eligibility, each of the patients was provided with Pearl Cleanser, Image Blanc *Complexion Lightner* or Image Blanc *Spot Lightner* and Hydra-Seal SPF 25. The regimen of 'cleansing' with Peal Cleanser, 'application' with Image Blanc *Complexion Lightner/Spot Lightner* and 'sealing' with Hydra-Seal SPF 25 was to be followed in each of the patient for study duration of 12 weeks.

Patient assessment was done at Baseline, end of 6 weeks and 12 weeks of treatment period. At the first visit (Baseline) a detailed history was taken, examination was done and photograph of the affected facial region was taken. During the 2nd visit (end of 6 weeks) and 3rd visit (end of 12 weeks), the assessment for efficacy and safety was done.

For assessment for efficacy, Melasma Area and Severity Index (MASI) were evaluated. In this, the darkness (D) of the melasma is compared to the normal skin and graded on a scale of 0 to 4 as follows: 0= normal skin color without evidence of hyperpigmentation; 1= barely visible hyperpigmentation; 2= mild hyperpigmentation; 3= moderate hyperpigmentation; 4= severe hyperpigmentation. During the 2nd visit (end of 6 weeks) and 3rd visit (end of 12 weeks), the assessment for efficacy was done by comparing with the baseline photograph.

The improvement in 'Quality of Life' was assessed through a questionnaire namely, did you notice any improvement in complexion/dark spots on face and neck during the period of application of product?; Does your face show superior luminance now than before you started using the product?; How family, friends and people at work evaluated results?; Would you like to continue

the treatment?; Would you recommend the treatment to others? was subjectively assessed by the Physician at Visit 2 and 3 and graded accordingly as Grade 1: Very Unsatisfied; Grade 2: Unsatisfied; Grade 3: Satisfied; and Grade 4: Very satisfied.

Similarly the patient rated the response through 'patient satisfaction questionnaire' namely, overall satisfaction, improvement in skin tone and complexion / dark spots on the face and neck, improvement in luminance and skin tone, improvement in firmness of the skin, moisturizing effect, pleasant to use and rating as compared to previously used products, as Average (Grade 1),

Good (Grade 2),

Very Good (Grade 3) and

Excellent (Grade 4) on Visit 2 and 3.

Physicians and Patient Global Assessment Grade for improvement in complexion or dark spots on the face and neck were graded as Grade 0: Worse; Grade 1: No Change; Grade 2: Slightly Improved; Grade 3: Improved; Grade 4: Much Improved.

RESULTS

Twenty four patients with hyperpigmentation were included in the study with 12 patients each on Image Blanc *Complexion Lightner* or Image Blanc *Spot Lightner*, who completed 12 weeks of therapy. One patient in Image Blanc *Spot Lightner* group was lost in follow-up.

Results: Image Blanc Complexion Lightner

The average MASI score at baseline (*visit 1*) was 2.4 which was reduced to 1.8 after 6 weeks of treatment (*visit 2*) and further reduced to 1.4 after 12 weeks of treatment (*visit 3*), as shown in *figure 1*. At the end of study, all the patients in the group responded to the treatment and the average MASI score decreased by about 50% with 12 weeks of treatment.

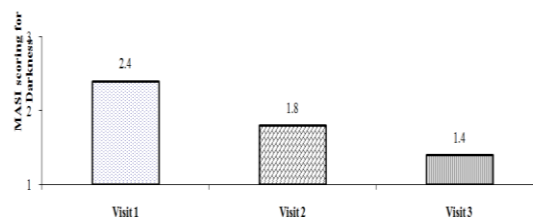


Figure 1: Average MASI score at Visit 1(Basal), Visit 2 and Visit 3

The Physician's and Patient's global assessment showed improvement in complexion at visit 2 and visit 3, as shown in *figure 2*. Average grade for Physician's global assessment improved from 1 at baseline to 2.4 at the end of 12 weeks treatment. Patient's global assessment also showed similar grades of improved from 1 at baseline to 2.3 at the end of treatment.

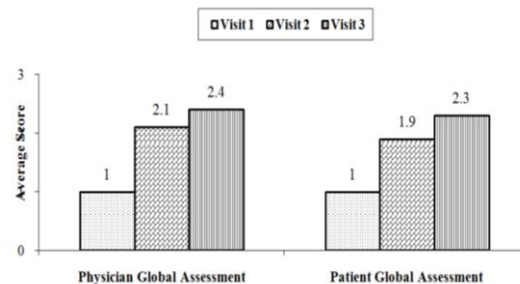


Figure 2: Physician and Patient global assessment at each visit

There was an overall improvement in 'Quality of Life' in terms of improvement in the complexion and luminance at the end of 6 weeks (*Grade 2.9*) and 12 weeks (*Grade 3.3*), as shown in *figure 3*.

All the patients responded that they would like to continue the treatment and would recommend the treatment to others. The overall 'Patient Satisfaction' was found to be good at the end of 6 weeks (Grade 2.1) and 12 weeks of treatment (Grade 2.6), (as shown in figure 3).

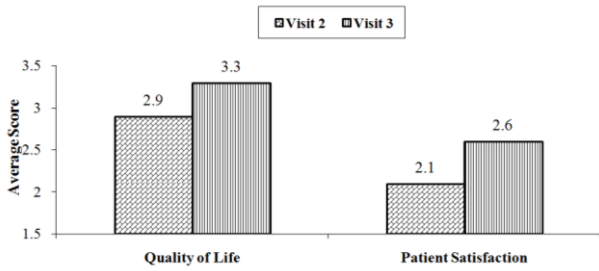


Figure 3: Quality of Life & Patient Satisfaction Questionnaire at Visit 2 and Visit 3



Figure 4: Photographic assessment for Complexion Lightner at Visit 1, Visit 2 and Visit 3

Results - Image Blanc 'Spot Lightner'

The average MASI score at baseline (visit 1) was 2.6 which was reduced to 1.9 after 6 weeks of treatment (visit 2) and further reduced to 1.4 after 12 weeks of treatment (visit 3), (as shown in figure 5). Overall, 7 patients showed a 50% improvement in MASI score at end of 12 weeks of treatment.

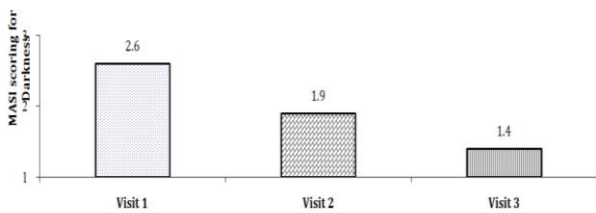


Figure 5: Average MASI score at Visit 1(Basal), Visit 2 and Visit 3

The Physician's and Patient's global assessment showed improvement in spot correction at visit 2 and visit 3, as shown in figure 6. Average grade for Physician's global assessment improved from 1 at baseline to 2.8 at the end of 12 weeks treatment whereas Patient's global assessment improved from 1 at baseline to 2.4 at the end of treatment.

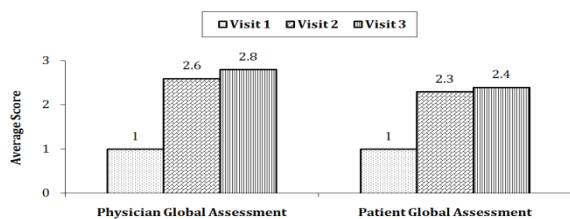


Figure 6: Physician and Patient global assessment at each visit

There was an overall improvement in 'Quality of Life' at the end of 6 weeks (Grade 2.8) and 12 weeks (Grade 3.2), (as shown in figure 7). As above all the patients showed willingness to continue the treatment and also were satisfied enough to recommend the treatment to others. The overall 'Patient Satisfaction' was found to be increase from 6 weeks (Grade 2) to 12 weeks of treatment (Grade 2.4), (as shown in figure 7).

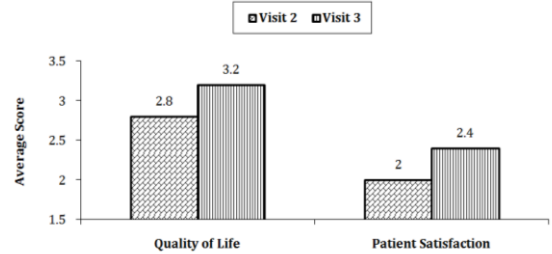


Figure 7: Quality of Life & Patient Satisfaction Questionnaire at Visit 2 and Visit 3



Figure 8: Photographic assessment for Spot Lightner at Visit 1, Visit 2 and Visit 3

Assessment of Adverse Events

Of the twenty four patients, one patient on Image Blanc 'Spot Lightner' showed acneform eruptions and darkening (4.16%), however there were no drop outs in the study due to adverse effects.

DISCUSSION

The recent introduction of Image Blanc Complexion Lightner and Image Blanc Spot Lightner are a new therapeutic approach in the management of hyperpigmentation disorders. Image Blanc Complexion Lightner and Image Blanc Spot Lightner contains active ingredient base with Regen-16 produced through patented technology targeting 16 mechanism of aging and other active agents targeting various probable causes of hyper pigmentation.

A clinical study conducted in Canada was aimed at evaluating the potential of serum (Image Blanc) to reduce the appearance of hyperpigmentation (age spots and melasma) of 10 volunteers. A noticeable improvement in the appearance of the dark spots is observed within 1 - 2 months of twice daily local application. According to the doctor evaluation, global improvement in the skin pigmentation was between 20- 80 %. The serum was very effective in improving the melasma and age spots in younger as well as older skin. No adverse effects were noted in the study. ³

As seen in our results, Image Blanc Complexion Lightner and Image Blanc Spot Lightner appear to be a safer alternative with no drop out or adverse reaction even with 3 months of therapy. In terms of efficacy, there was a 41% reduction in the MASI score for both the treatment groups, brought about with 12 weeks of treatment which is equal to or better in comparison to the studies published in the past for other agents. The results obtained in India are similar to another results obtained on Caucasian skin type. ³

One of the reason for Image Blanc Complexion Lightner and Image Blanc Spot Lightner showing better results could be due to use of various combination of ingredients for an extended spectrum of activity interfering with the different steps of melanogenesis

pathway. The association of depigmenting agents with different mechanisms of action appears to be a useful strategy to improve clinical efficacy, reducing the duration of therapy and the risk of adverse effects as in the present study.

CONCLUSION

Great advances have been made to understand pigment biology and the processes underlying skin pigmentation in the last decade. This research has led to development of safer and more effective skin-lightening ingredients. Skin lightening products are gaining in popularity on the global market. Early generations of skin whitening agents were effective but safety concerns led to their ban from the cosmetic market forcing the industry to look at new innovative and safer ways to improve skin pigmentation. This has been a big incentive to better understand the physiology of skin pigmentation and elucidate its complexity.

One clear link that has emerged is the close relationship between ageing and skin pigmentation concerns. The recently developed microarray technology has pointed at up-regulation of genes related to inflammation, fatty-acid metabolism, and melanin production, but down-regulation of confirmed enveloped-related genes.

Accordingly, it seems that increased uneven pigmentation is associated with keratinisation impairment, on a chronic inflammation background. Thus, simply targeting tyrosinase activity to solve pigmentation problems does not seem adequate anymore. Skin pigmentation needs to be addressed globally, as part of the ageing process.

The new trend is toward integration of multiple actives in a cosmeceutical formulation synergistic to improvement of skin. The new trend is towards integration of multiple activities in a cosmeceutical formulation synergistic to improvement of skin pigmentation, as well as addressing the skin ageing process. The serum "Image Blanc" described here does it all and leads the way for better integrated skin cares.

The results of this study show that Image Blanc Complexion Lightner and Image Blanc Spot Lightner have a good potential as a skin-lightening agent and for treatment of dark spots. The better results could be because of targeting different steps of melanin synthesis which improves clinical efficacy with better safety profile.

REFERENCES

1. Costin G E and Hearing V J, Human skin pigmentation: melanocytes modulate skin color in response to stress. *FASEB J*. 21, 976-994 (2007)
2. Verdier-Sevrain, S., Bonte, F., and Gilchrist, B. (2006) Biology of estrogens in skin: implications for skin aging. *Exp. Dermatol.* 15, 83-94
3. Dupont E, Leveille C, Loing E, Bilodeau D. A whiter shade of pale in skin care. *Personal care* 2011; Jan 25-30
4. Kregel K C. and Zhang H J. An integrated view of oxidative stress in aging: basic mechanisms, functional effects, and pathological considerations. *Am J Physiol Regul Integr Comp Physiol* 292: R18-R36, 2007
5. Dupont E, Gomez J, Leveille C, Bilodeau D. From Hydration to Cell Turnover : An Integral Approach to Antiaging. *Cosmetics & Toiletries* 2010; March