SciForschen
Open HUB for Scientific Research

Journal of Clinical and Cosmetic Dermatology

ISSN 2576-2826 | Open Access

RESEARCH ARTICLE

Volume 4 - Issue 2

Safety and Efficacy of Retinsphere® Technology and Biopep-15 in the treatment of Acne in Asian Population

Ma Teresita G Gabriel*[1], Maria Socouer M Oblepias[2] and Maria Vitale[3]

[1]Chairman, Department of Dermatology, Research Institute for Tropical Medicine, Alabang, Muntinlupa City, Philippines
[2]Acne Cure Center, Alabang, Muntinlupa City, Philippines
[3]Medical Director Dermatology, Cantabria Labs, Spain

***Corresponding author:** Gabriel MTG, MD, FPDS, Department of Dermatology, Research Institute for Tropical Medicine, Alabang, Muntinlupa City, Philippines, Tel: +639189457425, E-mail: dermatologyritm@gmail.com

Received: 28 Feb, 2020 | **Accepted:** 07 Mar, 2020 | **Published:** 13 Mar, 2020

Citation: Gabriel MTG, Oblepias MSM, Vitale M (2020) Safety and Efficacy of Retinsphere® Technology and Biopep-15 in the treatment of Acne in Asian Population. J Clin Cosmet Dermatol 4(2): dx.doi.org/10.16966/2576-2826.148

Abstract

Introduction: Acne is a chronic disease with significant physical and psychological impact on different age groups. It is vital to institute an effective treatment for fast control of the disease, minimizing the lesions and avoiding post-inflammatory hyperpigmentation and antibiotic resistance.

Objective: To evaluate the efficacy and safety of anti-acne formulation based on the combination of two Retinoids (Retinsphere® Technology) and an antimicrobial peptide (Biopep-15), in the treatment of mild-moderate acne in Asian population.

Methods: Multicenter, prospective and open clinical trial of 4 months duration involving 30 Filipino subjects with mild to moderate acne. Primary parameters of effectiveness were quantitatively measured by lesion count and sebum measurement (Sebumeter® SM815) on baseline, days 45, 90 and 120. Tolerance and adverse events were recorded at all visits.

Results: The median number of open and closed comedones as well as papules continually decreased over time with a statistically significant difference between baseline and days 90 and 120 ($p<0.00001$). Sebumeter values showed statistically significant difference from baseline to as early as day 45 and throughout the entire study period (88 µg/cm^2 baseline vs. 67µg/cm^2, 47 µg/cm^2 and 38 µg/cm^2 respectively). Overall satisfaction was rated as good or very good in more than 90% of patients. Acne QOL significantly increased from 47.13 at baseline to 91.13 at day120, with p-value <0.00001.

Conclusion: The anti-acne formulation based on the combination of retinoids and an antimicrobial peptide (Biretix Duo) demonstrated to be a very safe, well-tolerated and effective treatment for acne in Filipino patients. It reduces acne lesions and improves skin conditions with minimal adverse events.

Keywords: Acne; Cosmetic efficacy; Asian skin; Safety

Introduction

Acne is a chronic disease which affects approximately 85% of teenagers but may also occur in other age groups [1]. There is a significant physical and psychological impact, such as permanent scarring, poor self-esteem, depression, anxiety and inferiority complex, which can diminish the quality of life of these patients [2].

Acne develops as a result of interplay between the following four factors: follicular epidermal hyperproliferation with subsequent plugging of the follicle, excess sebum production, the presence and activity of the commensal bacteria *Cutibacterium* acnes, and inflammation [3]. Acne vulgaris is currently believed to be caused not only by *Cutibacterium* acnes proliferation, but also by inflammatory mechanisms due to factors such as genetic predisposition, diet, sebaceous gland activity, inflammatory mediators, and their target receptors [4]. The topical treatment of acne is indicated in all forms of acne. Depending on the severity of symptoms, topical regimens can be combined with oral treatment. Retinoids are the core of topical therapy in acne for their comedolytic properties, ability to resolve the precursor microcomedone lesion and anti-inflammatory effect. These agents enhance any topical acne regimen and allow for maintaining clearance after discontinuation of oral therapy [5]. According to the Global Alliance Acne Treatment Algorithm, topical retinoids are indicated in most cases of acne as first line treatment, alone or in combination with other medications depending on the severity of the condition [3]. Topical retinoids have been used in patients with acne for their ability to reduce hyper-seborrhea by inhibiting the proliferation and differentiation of sebocytes and by inducing the normalization of cornification through regulation of keratinocyte proliferation. Its use may be limited by a number of side effects including dryness, peeling, erythema, and photosensitization. This lack of tolerance to retinoids may lead to poor adherence and may be an important factor in acne treatment failure.

The emergence of antibiotic resistance has been a growing concern for the past decades. This particularly concerns macrolides, clindamycin and tetracyclines [6]. It is important to reduce antibiotic use due to the rapid development of bacterial resistance. To avoid this, the Global Alliance recommends the use of topical retinoids to replace topical antibiotics as first line therapy.

In this regard, Biretix Duo may be a promising option due to its active ingredients: Retinsphere® and Biopep-15. Retinsphere® is characterized by the association of two topical retinoids: retinol and hydroxypinacolone retinoate. The retinol is encapsulated in glycosphere technology as a delivery system, which increases penetration and enhances retinol stabilization. Hydroxipinacolone retinoate is an ester of all-trans retinoic acid that binds to the RAR receptor. This retinoid combination is able to minimize the side effects related to retinoid treatment while maintaining similar clinical efficacy. Biretix Duo has demonstrated excellent tolerance in previous studies [7]. *Cutibacterium* acnes are the primary bacterium implicated in acne. Its proliferation decreases other natural skin species such as *Staphylococcus epidermidis*, which causes imbalance that contributes to the development and worsening of acne lesions [8,9]. Biretix Duo contains an antibacterial peptide, Biopep-15, a botanical complex that contains Oligopeptide [10] comprised of 15 plant amino acids, found to possess broad spectrum antimicrobial activity against a wide variety of organisms including *Cutibacterium* acnes. In fact, this peptide was demonstrated to be effective against 24 strains of *Propionibacterium* acnes, including those resistant to other anti-bacterials, like clyndamicin, erytromicin and tetracyclines [9]. Biopep-15 binds to lipoteichoic acid endotoxin on the outer membrane of cell wall of gram-negative bacteria, enabling access to cytoplasmic membrane. Disruption of membrane causes osmotic imbalance within bacteria, leading to rapid cell death of *Cutibacterium* acnes. This antibacterial activity is specific and it does not affect other cells. Biopep-15 is combined with 0.5% Salicylic acid; both demonstrated a synergic effect lowering the minimum inhibitory concentration. It is non-cytotoxic, non-irritating, non-sensitizing and had no reported adverse effects.

The previous studies performed with this combination of retinoids demonstrated to be a safe and effective treatment for acne patients [10-13]. One of the studies performed by Capitanio B, et al. [7] with Retinsphere® technology showed a significant reduction in lipid peroxidation, oxidation of squalene and reduction in the levels of IL-1α (known to induce hyperkeratinization) in the sebum of patients treated with the retinoid combination. Regarding maintenance therapy, the study performed in 30 patients by Truchuelo MT, et al. [13] using the combination post-isotretinoin treatment, showed a 17% of relapse on the side treated with Biretix compared to 43% relapse on the side treated with placebo. Following the same goal, Bettoli V, et al. [14] showed 15% of relapse after one-year follow-up in patients treated with Biretix [14].

In the study conducted by Manfredini M, et al. [15] in 2013 among 15 patients with mild to moderate acne, after 45 days treatment with Biretix Duo, patients showed a 71% reduction in the total number of acne lesions, a reduction of 80% in clinical severity and an important reduction in infundibular dilation and hyperkeratinization as evaluated by confocal microscopy [15]. In another study by Veraldi S, et al. [16] among 100 patients with predominant comedonal facial acne using Biretix duo, the number of non-inflammatory lesions was significantly reduced by 60% and the mean number of inflammatory lesions decreased by 70% after 90 days of application.

It is the purpose of this study to show the efficacy and safety of the combination of retinoids and Biopep-15 (Biretix Duo) in the treatment of mild-moderate acne in an Asian population, and Filipino patients in particular. Conventional acne treatments maybe associated with side effects hence, the use of dermocosmetic products were recommended as adjuncts to help decrease the incidence of these adverse effects such as dryness, irritation and photosensitivity [17].

Objectives

Primary objectives

To evaluate the efficacy and safety of Retinsphere® and Biopep-15 (Biretix Duo) by lesion count and using IGA, PGA and sebumeter readings at baseline, days 45, 90 and 120, and by monitoring any adverse events occurring during the 120-day study period.

Secondary objectives

To determine the Acne-Quality of Life at baseline and after 120 days and patient tolerance of the product.

Materials and Methods

A prospective, multicenter, open clinical trial to assess the effects of Retinsphere® and Biopep-15 (Biretix Duo) at several time points: baseline, day 45, day 90 and day 120 in the treatment of mild-moderate acne. Thirty (30) Filipino patients were recruited in the study following the eligibility criteria. This clinical trial was conducted in compliance with good clinical practice and in accordance with the ethical principles of the Declaration of Helsinki.

Inclusion criteria

Filipino patients diagnosed with mild-moderate acne (Grades 0-3 by Leeds Acne Grading System Revised correlated with grades 1-2 on Plewig scale and Kligman, 1975). Men and women ≥ 12 having signed the Informed Consent Form. In the case of the subjects between 12-17 years old, signature was required by parents/legal representatives in addition to the signature of the patient. Patients physically and psychologically able to comply with the procedures established by protocol.

Exclusion criteria

Patients having undergone treatment for acne including cosmeceuticals within 3 weeks previous to the start of the study. Patients with concomitant systemic conditions, receiving systemic treatments and with other concomitant dermatoses at the time of study. Pregnant or breast-feeding women.

Treatment

All study subjects were given the same treatment regimen. Biretix Duo was applied to the whole face in the morning and night after washing with hypoallergenic bar soap. A broad spectrum sunscreen was also applied in the morning and patients were advised to avoid sun exposure.

Clinical Assessment, Procedures and Evaluation

The face was divided into two halves, right and left side. The side chosen for evaluation on the first visit was the same for the evaluations during subsequent visits. Assessment was carried out at baseline, day 45, day 90 and day 120 (T3) including phone calls at days 15 and 30 to evaluate tolerance and safety.

- Lesion count on the side identified by the investigator was performed on all visits.
- Sebumeter values were performed on the chosen side using a specific probe, Sebumeter® SM 815, Courage+Khazaka electronic GmbH, on all visits two hours after washing with hypoallergenic bar soap.
- Photographic documentation done on all visits.
- Investigator's Global Assessment (IGA) performed on all follow-

up visits (T1,T2,T3) using the scale:-2, great worsening;-1, mild worsening;0, without changes;1, mild improvement;2, moderate improvement; and 3, intense improvement.

- Patient's Global assessment (PGA) performed on all follow-up visits (T1,T2,T3) using this scale:-2, great worsening; -1, mild worsening; 0, without changes; 1, mild improvement; 2, moderate improvement; and 3, intense improvement.
- Clinical assessment of oily appearance, desquamation, dryness and erythema was recorded by the investigator at T0,T1,T2,T3 and through phone calls (days 15 and 30).
- Evaluation of the tolerability to the product by the patient was requested during phone calls (days 15 and 30) and at T1,T2 and T3 and rated as Good, Moderate or Bad.
- Adverse events to the product were evaluated and recorded by the investigator during every follow-up visit as well as phone call on days 15 and 30 on a scale of 0-3 (0 absence , 1-mild, 2-moderate, 3-marked). The following parameters were assessed: itching, burning and edema.
- Patient satisfaction with previous acne treatments was recorded at T0 (baseline) using a scale of 0-10 (0-none and 10-extremely satisfied).
- Patient satisfaction with Biretix Duo was recorded using a scale of 0-10 (0-none and 10-extremely satisfied) at T3 (day 120).
- Acne Quality of Life Questionnaire18 (Acne QOL) was administered at T0 and T3.

Statistics

Sample size calculation

The assumption was that the primary endpoint was acne lesion count before and after treatment. It was considered that, at baseline, the patient could have an average of approximately 15 lesions. Assuming a standard deviation of 10 (66.7% variability relative), with 28 patients, a decrease, between baseline and post treatment, at least of 35% would be considered as significant; with a significance level 5% ($p<0.05$) and a statistical power of 80%.

Statistical analysis

Data were encoded in MS excel by the researcher. Stata MP version 14 was used for data processing and analysis. Continuous variables were presented as mean/Standard Deviation (SD) or median/InterQuartile Range (IQR) depending on data distribution. Categorical variables were presented as frequency/percentages.

Friedman test was used to compare continuous variables over time (i.e., lesion count, sebumeter values) due to the violation of the multivariate normality assumption. For significant Friedman results, pairwise comparison utilized Wilcoxon signed rank test with Bonferroni-corrected alpha level for each comparison. Acne QOL was analyzed using a paired t-test. Cochran Q test was used to compare the proportion of treatment success (i.e., mild to intense improvement) in PGA and IGA, as well as the presence/absence of dermatologic features and adverse events over time. Significant Cochran Q test results were further analyzed using McNemar's test with Bonferroni correction.

Patients who did not complete all follow-up periods were considered dropouts and were excluded in the analysis. All p-value ≥ 0.05 were considered statistically significant. Charts and graphs were created using MS Excel.

Results

Demographic and clinical profile

Thirty patients completed the study. The median age was 21.50, with the majority (73.3%) between 18 and 29 years. The proportion of females was higher as compared to males. About a third of the patients reported that they had had previous treatment for acne with a mean duration of 1.8 months. Mean satisfaction rating for their previous treatment was rated as 3.60 on a scale of 0 to 10. The right side of the face was selected as the site of evaluation for more patients (57% *vs.* 43%).

Lesion count

Table 1 presents the change in lesion count from baseline to day 120. Using the Friedman test, the number of open comedones, closed comedones and papules showed statistically significant decrease over time. Closed comedones responded faster than open comedones with significant difference seen as early as day 45. Both open and closed comedones continued to decrease in lesion count throughout the entire study period. The number of papules decreased throughout the treatment period with significant difference between baseline and days 90 and 120.

Median sebumeter values

Median sebumeter values showed significant decrease over time based on the Friedman test result (p=0.0001, Figure 1): initial median

Table 1: Change in lesion count over time (n=30).

LESION	BASELINE Median (IQR) Mean ± SD	DAY 45 Median (IQR) Mean ± SD	DAY 90 Median (IQR) Mean ± SD	DAY 120 Median (IQR) Mean ± SD	P VALUE[a]
Open comedones	5.5 (5-8) 6.9 ± 3.2	5 (5-8) 6.03 ± 3.0	4 (3-5)** 4.6 ± 2.5	4 (3-5)** 4.2 ± 2.1	<0.00001*
Closed comedones	8 (5-10) 8.4 ± 4.6	5 (5-10) 6.7 ± 3.3	4 (3-7)** 5.0 ± 2.4	4 (3-5)** 4.5 ± 1.8	<0.00001*
Papules	12 (9-14) 12.2 ± 5.5	9 (6-15) 10.2 ± 5.0	6 (4-10)** 6.7 ± 4.3	4.5 (3-7)** 4.9 ± 3.0	<0.00001*
Pustules	0 0.5 ± 1.0	0 0.3 ± 0.7	0 0.2 ± 0.6	0 0.1 ± 0.6	0.4172
Nodules	0	0	0	0 0.03 ± 0.2	1.0000

[a]Friedman test was used
***Statistically significant*

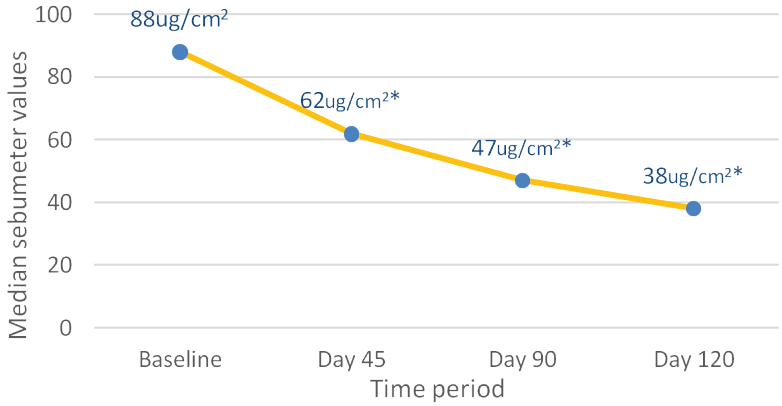

Figure 1: Change in median sebumeter values.
***Statistically significant*

value at T0 was 88 µg/cm², dropping to 38 µg/cm² at day 120. There was a continuous decline in the median sebumeter values throughout all evaluation periods with significant difference noted as early as day 45. Classifying the patient based on sebumeter values revealed that 77% had oily skin at baseline with values >66 µg/cm² while 23% had normal skin. At the end of the treatment period (day 120), only 6 (20%) patients had oily skin while 43% had normal skin type. Interestingly, 11 (37%) patients were considered to have dry skin at day 120 with sebumeter values <33 µg/cm².

Investigator's global assessment

Treatment success was defined as experiencing mild, moderate or intense improvement. Figure 2 shows that as early as day 45, treatment success for IGA was recorded as 80%, at day 90 it increased to 83% and finally at day 120, it reached 90%. Worsening was only reported by 3 patients at day 45 and 1 patient on day 90 but the patients did not discontinue treatment and nobody reported worsening at the end of the treatment.

Patient's global assessment

A similar trend to IGA was observed in the Patient's Global Assessment (PGA) as seen in figure 3. As early as day 45, the majority of the patients (60%) reported mild improvement and 10% reported moderate improvement, hence a treatment success of 70%. There were 4 patients who reported mild worsening and 1 great worsening. At day 90, treatment success increased to 86% (12 mild, 13 moderate and 1 intense improvements). Only 1 patient showed worsening which was mild in nature. On day 120, 90% reported treatment success (43% mild, 47% moderate improvement).

Clinical assessment over time

Table 2 reveals the results of the dermatological assessment performed at baseline and at each follow-up period. Treatment success was defined as the absence of each manifestation: oily appearance, desquamation, dryness, and erythema.

For oily appearance, at baseline, 27% of patient's experienced moderate oily appearance, with 73% marked oily appearance. As early as day 15, 80% had absent oily appearance with only 20% mild oily appearance. All (100%) patients revealed absence of oily appearance at day 120.

For desquamation, at baseline, 70% had desquamation (60%-mild and 10%-moderate).

As early as day 15, 83% had absent desquamation and 17% mild desquamation. All (100%) patients revealed absence of desquamation at day 120.

For dryness, at baseline, 56% had dryness (53% mild and 3% moderate). As early as day 15, 97% had absent dryness with only 3% having mild dryness. All (100%) patients revealed absence of dryness at day 120.

For erythema, at baseline, all patients had erythema (13% mild, 50% moderate and 37% marked). As early as day 15, 93% had absent erythema with only 7% having mild erythema. At day 120, 97% had absent erythema while only 3% had mild erythema.

In conclusion, an improvement ≥ 90% was observed across all time periods for all parameters used by the dermatologists and up to 100% at day 120 for oily appearance, desquamation and dryness.

Tolerance

Tolerance rating by patients was good ranging from 87-100% at different time periods as seen in figure 4. At the end of the study period, all (100%) patients rated tolerance as 'good'.

Adverse effects

The occurrence of adverse events remained low and mild in nature as evaluated by the investigator. Mild itching was experienced by 3-13% of patients from days 15 to 120, with highest percentage at day 45. Mild burning occurred in 7% of patients at day 45 but was absent at days 90 and 120. No edema was reported by any of the patients throughout the study period.

Overall satisfaction

On a scale of 0 to 10, patients were asked to rate their satisfaction at day 120 of treatment. Mean satisfaction rating was 7.63 ± 0.8. Moreover, 47% of patients rated their satisfaction as 8. Satisfaction was double that of their rating of previous treatments which was 3.60 ± 2.01. Furthermore, patients rated their satisfaction with Biretix Duo as good (70%) and very good (23%) (Figure 5). All patients agreed that the combination is easy to apply and has a pleasant odor. In addition, all patients agreed that they feel that their skin was less oily and would recommend the product to others.

Acne QOL

Quality of life was compared between baseline and day 120 of the

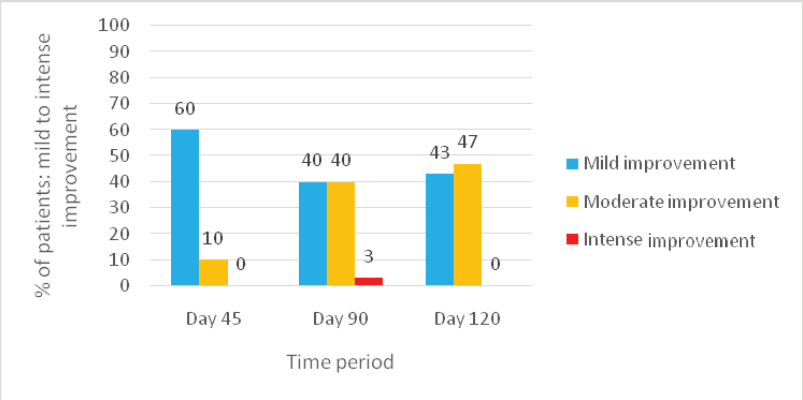

Figure 2: Patients with mild to intense improvement based on IGA over time (n=30).

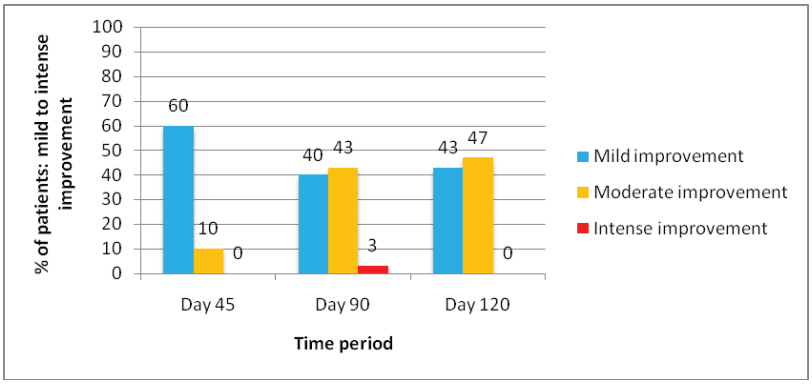

Figure 3: Patients with mild to intense improvement based on PGA over time (n=30).

Table 2: Dermatology assessment over time (n=30).

	Baseline n (%)	Day 15 n (%)	Day 30 n (%)	Day 45 n (%)	Day 90 n (%)	Day 120 n (%)	P VALUE[a]
Oily appearance							
Absent	0	24 (80)	24 (80)	26 (87)	29 (97)	30 (100)	<0.00001*
Mild	0	6 (20)	6 (20)	4 (13)	1 (3)	0	
Moderate	8 (27)	0	0	0	0	0	
Marked	22 (73)	0	0	0	0	0	
Desquamation							
Absent	9 (30)	25 (83)	22 (73)	26 (87)	30 (100)	30 (100)	<0.00001*
Mild	18 (60)	5 (17)	8 (27)	4 (13)	0	0	
Moderate	3 (10)	0	0	0	0	0	
Marked	0	0	0	0	0	0	
Dryness							
Absent	13 (43)	29 (97)	28 (93)	29 (97)	27 (90)	30 (100)	<0.00001*
Mild	16 (53)	1 (3)	2 (7)	1 (3)	3 (10)	0	
Moderate	1 (3)	0	0	0	0	0	
Marked	1	0	0	0	0	0	
Erythema							
Absent	0	28 (93)	28 (93)	29 (97)	28 (93)	29 (97)	<0.00001*
Mild	4 (13)	2 (7)	2 (7)	1 (3)	2 (7)	1 (3)	
Moderate	15 (50)	0	0	0	0	0	
Marked	11 (37)	0	0	0	0	0	

[a]*Cochran Q test: treatment success (Absent), treatment failure (Mild/ Moderate/Marked)*

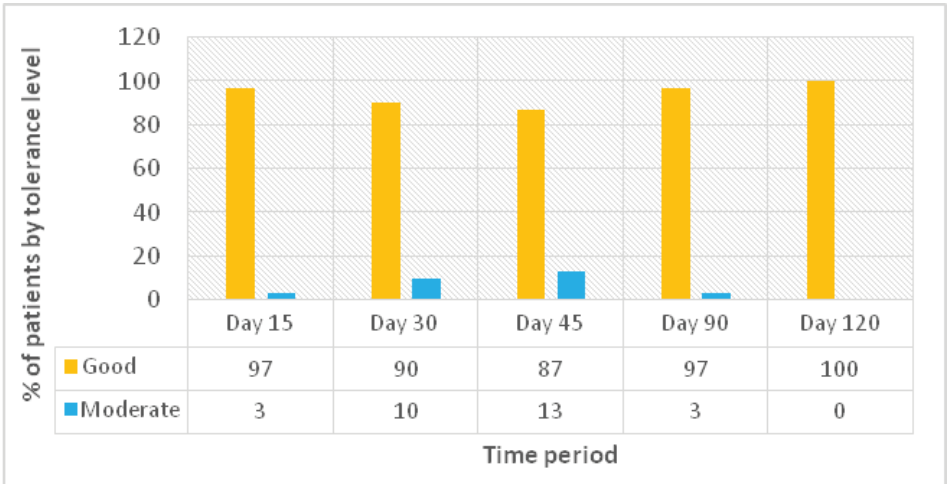

Figure 4: Tolerance level over time (n=30).

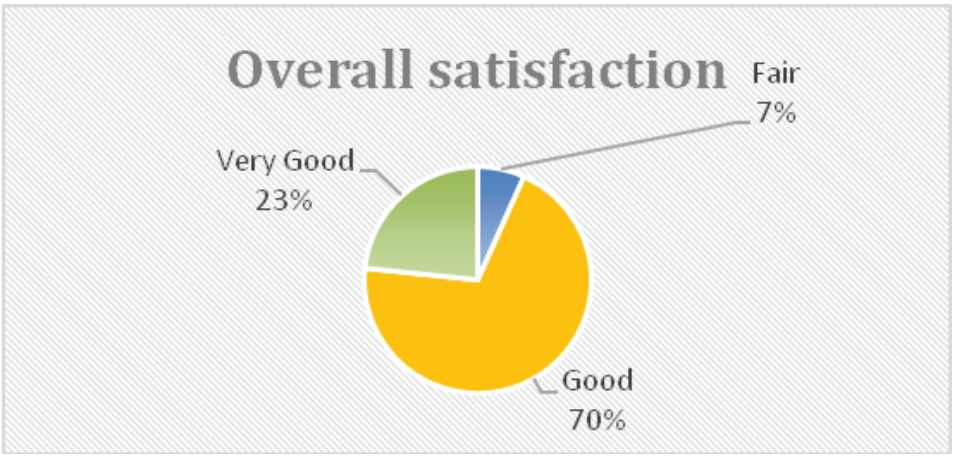

Figure 5: Overall satisfaction of patients (n=30).

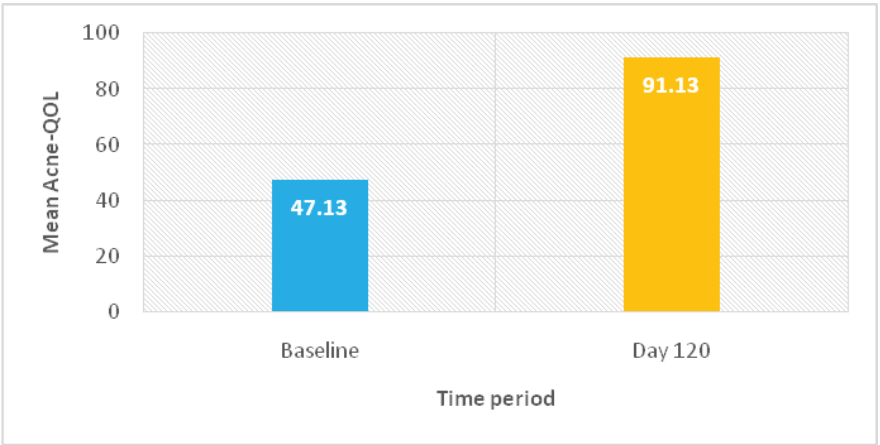

Figure 6: Comparison of mean Acne QOL at baseline and day 120.

follow-up as shown in figure 6. Mean Acne QOL at day 120 (91.1 ± 9.1) was significantly higher compared to mean Acne QOL at baseline (47.1 ± 12.2), having a p-value <0.00001 using a paired t-test and this was statistically significant.

Discussion

Acne is a common dermatological condition which may be evident in various age groups, although it is more common in teenagers [18]. In Southeast Asia, it was estimated that about 7,000 per 100,000 persons are affected by acne, being a somewhat lower prevalence compared to other regions worldwide [19]. Nonetheless, acne confers a significant burden to most Asian countries and was the 8th leading cause of years lived with disability among Filipinos in 2016 [20].

In this study, we have demonstrated the efficacy of a product containing Retinsphere® and Biopep-15 (Biretix Duo) in decreasing lesion count and median sebumeter values, and improving IGA, PGA, dermatologists assessment of oily appearance, desquamation dryness and erythema over time, as well as Acne QOL, with tolerance being rated as good by 100% of patients at the end of the clinical trial and mild adverse events which were low in intensity. The product is based on Retinsphere® technology, which combines 2 topical retinoids, retinol encapsulated in glycospheres and hydroxypinacolone retinoate. This combination has been used previously in patients with active acne, with an improvement in lesion count (macrocomedones and microcomedones), follicular keratinization, and measures of seborrhea and acne severity according to the Global Acne Grading System with few side effects and all of a mild degree [10]. The ester of retinoic acid, hydroxypinacolone retinoate, acts in a similar way to tretinoin but does not cause the irritation observed with other retinoids.

Although still a controversial issue, it was believed that sebum production varies by ethnicity and location [21]. Inflammation caused by sebum accumulation may not be the etiology of acne among those living in cold climates since sebum production is definitely lower during the winter season [22]. In contrast, in countries with hot and humid climates, oily skin is quite common [23], and considered to be a manifestation of excessive sebum production by the sebaceous gland [24]. In this study, Sebumeter cut off value for oily skin of >66 μg/cm^2 by Youn SW, et al. [25] was used. At baseline, 77% had oily skin type with median sebumeter values of 88 μg/cm^2 while 23% had normal skin. There was a drop of 38 μg/cm^2 in the median sebumeter values at day 120 which was statistically significant. At the end of the study, only 20% had oily skin , 43% normal skin and even 37% had dry skin (cut off 33 μg/cm^2) [25].

The proportion of patients showing treatment success for both IGA and PGA consistently increased over time with 90% treatment success for both IGA and PGA at day 120. For clinical assessment over time, treatment success rate continued to increase throughout all evaluation periods and this was statistically significant. Treatment success rate was recorded to be ≥ 90% across all time periods for all parameters (oily appearance, desquamation dryness and erythema) used by the dermatologists and up to 100% at day 120 for oily appearance, desquamation and dryness. This is consistent with the study of Veraldi S, et al. [11] which showed that the use of this combination for 2 weeks in acne patients improved skin roughness by 50% and scaling by 40%.

Studies consistently show that topical retinoids are indeed effective in treating acne. Asians are more sensitive to topical retinoids, such that Post-inflammatory Hyperpigmentation (PIH) and irritation

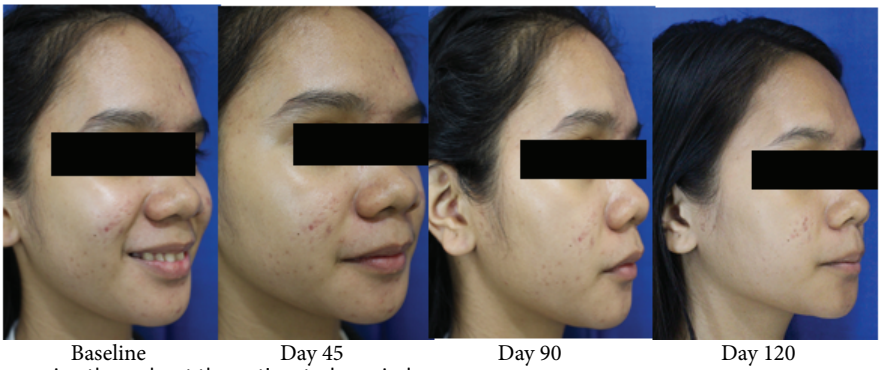

Figure 7: Lesion count improving throughout the entire study period.

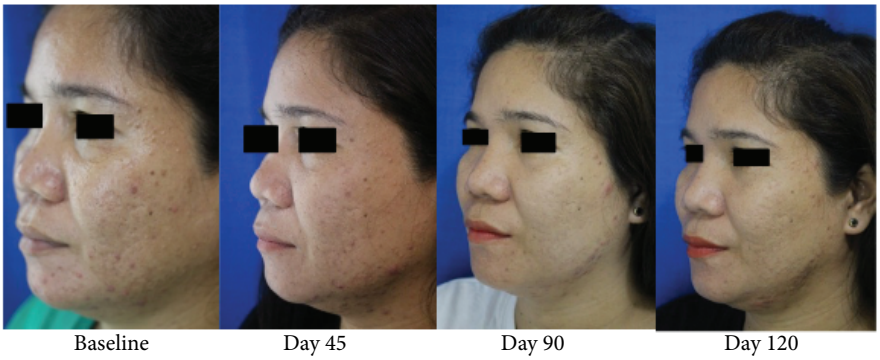

Figure 8: Lesion count improving throughout the entire study period.

often occurs [26]. In contrast, tolerance for Biretix Duo was rated as good by all patients in the study at day 120. The Retinsphere® Technology in this preparation maintained its efficacy with minimal adverse effects.

In this study, on a scale of 0 to 10, mean satisfaction rating at day 120 of treatment with Biretix Duo was 7.63 ± 0.85. This was double the satisfaction rate for previous medications of 3.60 ± 2.01. Furthermore, 93% of patients rated their satisfaction with Biretix Duo as good to very good. All patients agreed that of Retinsphere® and Biopep-15 (Biretix Duo) was easy to apply and had a pleasant odor. In addition, all patients agreed that they felt their skin to be less oily, and would recommend the product to others. Acne QOL markedly improved from 47.13 at baseline to 91.13 at day 120.

Figures 7 and 8 shows photographs of patients improving with Retinsphere® and Biopep-15 (Biretix Duo) during the 90 day study period.

Conclusion

Acne is a chronic pathology with a great impact on quality of life, shown by a high prevalence in Asian population. If not addressed appropriately, it can lead to unwanted consequences like scars and post-inflammatory hyperpigmentation. Recent algorithms of practical management of acne recommend topical retinoids as the basis of treatment. This recommendation shows the effective role of retinoids in preventing the risk of acne sequalae, allowing topical retinoid therapy to be the first choice in the treatment of acne.

It has been seen that Asian skin is sensitive to chemical stimuli, thus the importance of maintaining treatment with a well-tolerated product should be emphasized as it ensures compliance leading to improved patient quality-of-life and hence, treatment success.

Biretix Duo has been demonstrated as a safe, well-tolerated and effective treatment for Filipino patients with mild to moderate acne. It is capable of reducing acne lesions and improving skin conditions with minimal adverse events. It has also improved patient's quality of life.

References

1. Bhate K, Williams HC (2013) Epidemiology of acne vulgaris. Br J Dermatol 168: 474-485.
2. Das S, Reynolds RV (2014) Recent Advances in Acne Pathogenesis: Implications for Therapy. Am J Clin Dermatol 15: 479-488.
3. Thiboutot DM, Dréno B, Abanmi A, Alexis AF, Araviiskaia E, et al. (2018) Practical management of acne for clinicians: An international consensus from the Global Alliance to Improve Outcomes in Acne. J Am Acad Dermatol 78: S1-S23.
4. Goh CL, Noppakun N, Micali G, Azizan NZ, Boonchai W, et al. (2016) Meeting the challenges of acne treatment in Asian Patients: A review of the role of dermocosmetics as adjunctive therapy. J Cutan Aesthet Surg 9: 85-92.
5. Zaenglein AL, Pathy AL, Schlosser BJ, Alikhan A, Baldwin HE, et al. (2016) Guidelines of care for the management of acne vulgaris. J Am Acad Dermatol 74: 945-973.
6. Antimicrobials: An Introduction (2011) Antimicrobial Resisitance Learning Site.
7. Capitanio B, Lora V, Ludovici M, Sinagra JL, Ottaviani M, et al. (2014) Modulation of sebum oxidation and interleukin-1α levels associates with clinical improvement of mild comedonal acne. J Eur Acad Dermatol Venereol 28: 1792-1797.
8. O'Neill AM, Gallo RL (2018) Host-microbiome interactions and recent progress into understanding the biology of acne vulgaris. Microbiome 6: 177.
9. Bojar R, Fitzgerald DJ (2012) *In vitro* investigations into the activity of Biopep-15 against 24 clinical isolates of Propionibacterium acnes. Evocutis plc EVO-0406.
10. Fabbrocini G, Cacciapuoti S (2012) Valutazione dell'eficacia dell'associazione di due retinoidi nel trattamento dell'acne lieve-moderata. Esperienze Dermatologiche 14: 25-28.
11. Veraldi S, Rossana S (2012) Treatment of comedonal-papular, mild acne with a fixed combination of hydroxypinacolone retinoate, retinol glycospheres and papain glycospheres. Preliminary results of a sponsor-free, pilot, open, multicentre study. Eur J Acne Relat Dis Regist Scr Manent s.n.c *Via* Bassini 3.
12. Ramli R, Malik AS, Hani AFM, Jamil A (2012) Acne analysis, grading and computational assessment methods: An overview. Ski Res Technol 18: 1-14.
13. Truchuelo MT, Jiménez N, Mavura D, Jaén P (2015) Assessment of the Efficacy and Safety of a Combination of 2 Topical Retinoids (RetinSphere) in Maintaining Post-Treatment Response of Acne to Oral Isotretinoin. Actas Dermosifiliogr 106: 126-132.
14. Bettoli V, Zauli S, Borghi A, Toni G, Ricci M, et al. (2016) Efficacy and safety of a 12-month treatment with a combination of hydroxypinacolone retinoate and retinol glycospheres as maintenance therapy in acne patients after oral isotretinoin. G Ital Dermatol Venereol 152: 13-17.
15. Manfredini M, Mazzaglia G, Farnetani F, Desmond Mandel V, Zauli S, et al. (2013) Terapia dellácne con retinoide topico e antibatterico. Terapia Farmacologica 25-29.
16. Veraldi S, Barbareschi M, Alessandrini G, Cardinali C, Gimma A, et al. (2016) Evaluation of a Combination of Retinol, Hydroxyl-Pinacolone Retinoate (Retinsphere), An Antibacterial Agent (BIOPEP.15), Salicylic Acid and Vitamin E in Subjects Suffering from Predominant Comedonal Acne-An Italian multicenter Prospective Open study.
17. Goh CL, Noppakun N, Micali G, Azizan NZ, Boonchai W, et al. (2016) Meeting the Challenges of Acne Treatment in Asian Patients: A Review of the Role of Dermocosmetics as Adjunctive Therapy. J Cutan Aesthet Surg 9: 85-92.
18. Martin AR, Lookingbill DP, Botek A, Light J, Thiboutot D, et al. (2001) Health-related quality of life among patients with facial acne--Assessment of a new acne-specific questionnaire. Clin Exp Dermatol 26: 380-385.
19. Hay RJ, Johns NE, Williams HC, Bolliger IW, Dellavalle RP, et al. (2014) The global burden of skin disease in 2010: An analysis of the prevalence and impact of skin conditions. J Invest Dermatol 134: 1527-1534.
20. Vos T, Alemu AA, Abate KH, Abbafati C, Abbas KM, et al. (2017) Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet 390: 1211-1259.
21. Davis EC, Callender VD (2010) A review of acne in ethnic skin: Pathogenesis, clinical manifestations, and management strategies. J Clin Aesthet Dermatol 3: 24-38.
22. Meyer K, Pappas A, Dunn K, Cula GO, Seo I, et al. (2015) Evaluation of Seasonal Changes in Facial Skin with and without acne. J Drugs Dermatol 14: 593-601.

23. Endly DC, Miller RA (2017) Oily Skin: A review of treatment Options. J Clin Aesthet Dermatol 10: 49-55.

24. Sakuma TH, Maibach HI (2012) Oily skin: An overview. Skin Pharmacol Physiol 25: 227-235.

25. Youn SW, Kim SJ, Hwang IA, Park KC (2002) Evaluation of facial skin type by sebum secretion: Discrepancies between subjective descriptions and sebum secretion. Ski Res Technol 8: 168-172.

26. Goh CL, Abad-Casintahan F, Aw DC, Baba R, Chan LC, et al. (2015) South-East Asia study alliance guidelines on the management of acne vulgaris in South-East Asian patients. J Dermatol 42: 945-953.