Novel Tretinoin 0.05% Lotion for the Once-Daily Treatment of Moderate-to-Severe Acne Vulgaris in Asians

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SYNOPSIS

- Acne is a common problem among Asian adolescents and adults[1]
- Generally, Asian skin is more pigmented than white people of European descent, and Asians have a high risk of acne sequelae such as post-inflammatory hyperpigmentation[1]
- The first tretinoin lotion 0.05% formulation was developed by utilizing novel polymeric emulsion technology to provide an alternative, lower-dose tretinoin option for patients who may be sensitive to the irritant effects of other tretinoin formulations[2]
- Tretinoin 0.05% lotion was efficacious and well tolerated in two phase 3 studies of participants ≥9 years of age with moderate-to-severe acne (NCT02932306, NCT02965456)[3]

OBJECTIVE

- To assess efficacy and safety of tretinoin 0.05% lotion in Asian participants with moderate-to-severe acne and to place these data into context with the overall study population

METHODS

- In two phase 3, double-blind, vehicle-controlled 12-week studies, eligible participants aged ≥9 years with moderate-to-severe acne were randomized (1:1) to receive once-daily tretinoin 0.05% lotion or vehicle
  - In these studies, CeraVe® hydrating cleanser and CeraVe® moisturizing lotion (L'Oreal, NY) were provided as needed for optimal moisturization/cleaning of the skin
- Data from these two studies were pooled and analyzed post hoc for Asian participants and the total population
- Efficacy assessments included reductions in noninflammatory/inflammatory lesion counts and treatment success, defined as percent of participants achieving ≥2-grade reduction in Evaluator's Global Severity Score (EGSS) and a clear/almost clear score
- Adverse events (AEs) and cutaneous safety/tolerability were also assessed

RESULTS

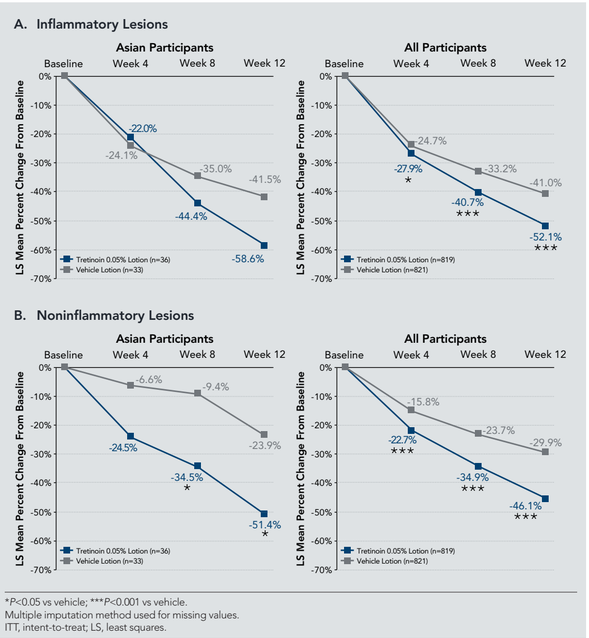
Participants

- A total of 1,640 participants were included in the pooled intent-to-treat analysis, of whom 69 were Asian (mean age 20.9 years [range: 12–48 years]; 60.9% female)

Efficacy

- At week 12, least-squares mean percent reductions from baseline in inflammatory lesion counts were greater with tretinoin 0.05% lotion versus vehicle—slightly greater in magnitude than the overall population—but the difference was not significant in Asian participants (**Figure 1A**)
- Noninflammatory lesion count reductions were significantly greater with tretinoin 0.05% lotion versus vehicle in Asian participants and all participants (**Figure 1B**)
- Treatment success at week 12 was greater with tretinoin 0.05% lotion versus vehicle in Asians and all participants, though this difference was not significant in Asians (**Figure 2**)

FIGURE 1. Mean Percent Reduction from Baseline in Inflammatory (A) and Noninflammatory (B) Lesion Counts in Asian and All Participants (ITT Population, Pooled)

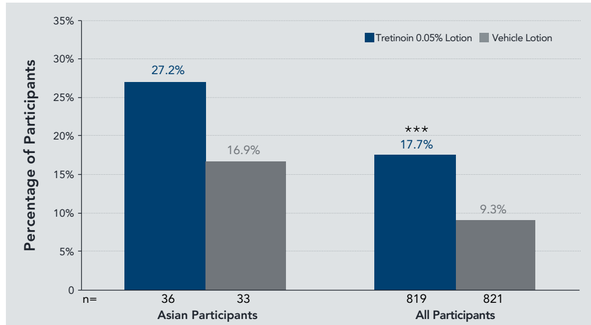


*P<0.05 vs vehicle; ***P<0.001 vs vehicle.
Multiple imputation method used for missing values.
ITT, intent-to-treat; LS, least squares.

Safety

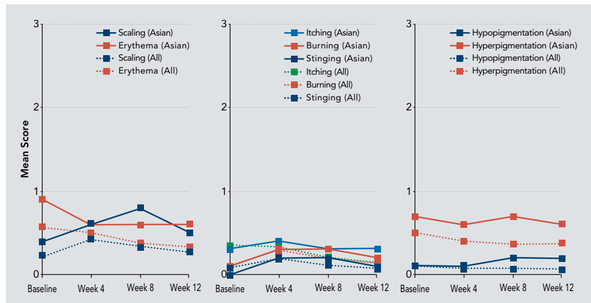
- In tretinoin-treated participants, treatment-emergent AEs (TEAEs) were reported in 14.7% of Asian and 23.5% of all participants (**Table 1**)
  - In Asian participants, all TEAEs were mild or moderate and none were related to treatment
- Slight transient increases occurred over the first 4-8 weeks in scaling, burning, and stinging (all and Asian) and itching (Asian); most scores were generally similar to baseline by week 12 (**Figure 3**)
  - Mild hyperpigmentation was reported at baseline for Asian participants (mean score 0.7) and remained mild throughout the study (0.6-0.7)

FIGURE 2. Percentage of Asian and All Participants Achieving Treatment Success[a] at Week 12 (ITT Population, Pooled)



***P<0.001 vs vehicle.
[a]Defined as ≥2-grade reduction from baseline in Evaluator's Global Severity Score with a final grade of 0 (clear) or 1 (almost clear). Multiple imputation method used for missing values. ITT, intent-to-treat.

FIGURE 3. Cutaneous Safety and Tolerability in Asian and All Participants Treated with Tretinoin 0.05% Lotion (Safety Population, Pooled)



No imputation for missing values.

TABLE 1. Adverse Events (Safety Population, Pooled)

	Asian Participants		All Participants	
	Tretinoin 0.05% (n=34)	Vehicle (n=31)	Tretinoin 0.05% (n=767)	Vehicle (n=783)
Summary of AEs, n (%)				
Any AE	5 (14.7)	6 (19.4)	180 (23.5)	151 (19.3)
Any serious AE[a]	0	0	7 (0.9)	4 (0.5)
Severity of AEs, n (%)				
Mild	3 (8.8)	5 (16.1)	105 (13.7)	95 (12.1)
Moderate	2 (5.9)	1 (3.2)	67 (8.7)	46 (5.9)
Severe	0	0	8 (1.0)	10 (1.3)
Relationship to study drug, n (%)				
Related[b]	0	1 (3.2)	62 (8.1)	15 (1.9)
Unrelated	5 (14.7)	5 (16.1)	118 (15.4)	136 (17.4)

[a]No serious AEs were considered related to treatment.
[b]All related treatment-emergent AEs were classified as general disorders and administration site conditions.
AE, adverse event.

CONCLUSIONS

- Data pooled from two phase 3 studies showed that treatment with tretinoin 0.05% lotion provided statistically greater reductions in noninflammatory lesion counts versus vehicle in Asian participants, similar to the overall study population
- The lack of statistical significance versus vehicle for inflammatory lesions and treatment success in Asian participants may be due to the small number (n=69) in this analysis, as mean values for these efficacy assessments were similar to or greater than the overall study population
- Tretinoin 0.05% lotion was well tolerated in Asian and all participants, with mean cutaneous safety and tolerability ratings between none and mild, including hyperpigmentation

REFERENCES

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3. Tyring SK, et al. *J Drugs Dermatol.* 2018;17(10):1084-1091.

AUTHOR DISCLOSURES

Dr. George Han has nothing to disclose. Dr. April Armstrong has served as a research investigator and/or consultant for AbbVie, Janssen, Leo, Novartis, UCB, Ortho Dermatologics, Dermira, Sanofi, Regeneron, BMS, Dermavant, and Modernizing Medicine. Dr. Seemal Desai has served as a research investigator and/or consultant for Skinmedica, Ortho Dermatologics, Galderma, Pfizer, Dermavant, Almirall, Dermira, and Watson. Dr. Eric Guenin is an employee of Ortho Dermatologics and may hold stock or stock options in its parent company.

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