Efficacy and Safety of Tazarotene 0.045% Lotion in White Adults with Moderate-to-Severe Acne

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SYNOPSIS

- Acne is a common dermatologic condition that affects adults as well as adolescents[1]
- It also manifests differently in different skin types, with a higher proportion of noninflammatory acne (versus inflammatory) and moderate-to-severe erythema in White patients than patients with skin of color[2-4]
- Topical retinoids are a mainstay of acne treatment, though they are associated with cutaneous irritation, which may limit their use[5]
- Tazarotene 0.045% polymeric emulsion lotion has demonstrated safety and efficacy in two pooled phase 3 studies[6] and in post hoc analyses of patients with skin of color (Black, Asian, Hispanic)[7]
  - White adults—the largest population enrolled in the phase 3 studies—have not been examined

OBJECTIVES

- To determine the efficacy and safety of tazarotene 0.045% lotion in White adults with moderate-to-severe acne and evaluate its impact on quality of life

METHODS

- In two phase 3, double-blind, 12-week studies (NCT03168334; NCT03168321), participants ≥9 years of age with moderate-to-severe acne were equally randomized to once-daily tazarotene 0.045% lotion or vehicle lotion
  - CeraVe® hydrating cleanser and CeraVe® moisturizing lotion (L'Oreal, NY) were provided as needed for optimal moisturization/cleaning of the skin
- This pooled, post hoc analysis comprised adult participants (aged ≥18 years) who self-reported their race as White
- Coprimary endpoints were inflammatory/noninflammatory lesion counts and treatment success (≥2-grade reduction from baseline in Evaluator's Global Severity Score [EGSS] and a score of 0 [clear] or 1 [almost clear])
- Quality of life was assessed using the Acne-Specific quality of life questionnaire (Acne-QoL)[8]
- Treatment-emergent adverse events (TEAEs) and cutaneous safety and tolerability were also evaluated

RESULTS

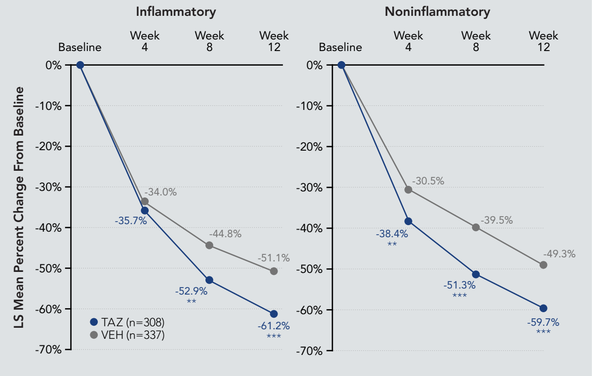
Demographics and Baseline Characteristics

- Of 1614 participants in the intent to treat population (ITT) of the two pooled phase 3 studies, a total of 645 and 619 White adults comprised the ITT and safety populations, respectively
- The White adult participants had a mean age of 23.6 years, 79.1% were female, 71.0% identified as non-Hispanic/Latino, and 89.6% had moderate EGSS at baseline
  - Baseline demographics and disease characteristics were similar between the treatment groups except for a slightly greater percentage of females in the tazarotene-treated versus vehicle-treated group (82.5% vs 76.0%)

Efficacy and Quality of Life

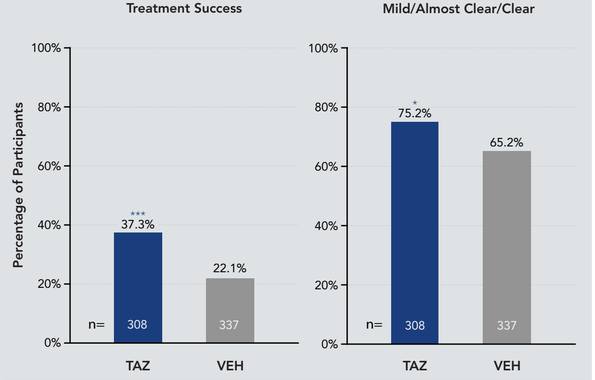
- At week 12, tazarotene 0.045% lotion provided approximately 60% reductions in inflammatory and noninflammatory lesion counts ($P<0.001$ vs vehicle, both; **Figure 1**)
- The percentage of participants achieving treatment success and EGSS improvements at week 12 were significantly greater with tazarotene than vehicle ($P<0.001$ and $P<0.05$, respectively; **Figure 2**)
- Quality of life was also improved at week 12, with greater numerical improvements in Acne-QoL scores for tazarotene versus vehicle in the domains of self-perception, role-emotional, and role-social (**Table 1**)
- Images of representative tazarotene-treated participants are shown in **Figure 3**

FIGURE 1. Reductions in Acne Lesion Counts by Visit in White Adults (ITT Population)



**P<0.01 vs vehicle; ***P<0.001 vs vehicle.
Multiple imputation (MCMC) used to impute missing values.
Overall phase 3 pooled population at week 12: inflammatory TAZ -57.9% and VEH -47.8%; noninflammatory TAZ -56.0% and VEH -42.0%; P<0.001, both.[6]
ITT, intent to treat; LS, least squares; TAZ, tazarotene 0.045% lotion; VEH, vehicle lotion.

FIGURE 2. Achievement of Treatment Success[a] or Mild/Almost Clear/Clear[b] at Week 12 in White Adults (ITT Population)



*P<0.05 vs vehicle; ***P<0.001 vs vehicle.
Overall phase 3 pooled population treatment success rates at week 12: TAZ 30.4% and VEH 17.9%; P<0.001.[6]
Multiple imputation (MCMC) used to impute missing values.
[a]At least a 2-grade improvement from baseline in EGSS and a score of 0 (clear) or 1 (almost clear).
[b]A score of 2, 1, or 0, respectively, on the EGSS.
EGSS, Evaluator's Global Severity Score; ITT, intent to treat; TAZ, tazarotene 0.045% lotion; VEH, vehicle lotion.

FIGURE 3. Acne Improvements With Tazarotene 0.045% Lotion

Individual results may vary.
EGSS, Evaluator's Global Severity Score.

TABLE 1. Mean Change From Baseline in Acne-QoL Scores at Week 12 in White Adults (ITT Population)

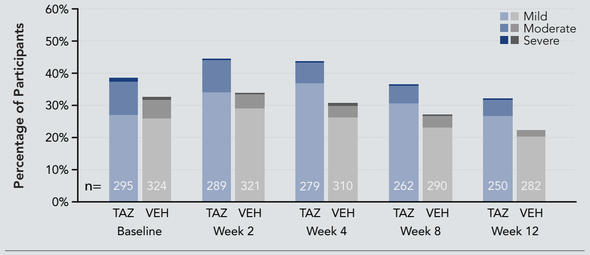
Acne-QoL Domain Subgroup, mean (SD) change from baseline	Tazarotene 0.045% Lotion (n=250)	Vehicle Lotion (n=282)
Self-perception	10.1 (8.0)	8.7 (8.0)
Role-emotional	8.5 (8.0)	7.0 (8.6)
Role-social	6.2 (6.7)	5.3 (6.6)[a]
Acne symptoms	8.2 (6.0)**	6.5 (6.2)

**P<0.01 vs vehicle.
[a]n=281.
A positive mean change indicates improvement.
No imputation of missing data.
Acne-QoL, Acne-specific Quality of Life questionnaire; ITT, intent to treat; SD, standard deviation.

Safety and Tolerability

- TEAE rates were higher for tazarotene-treated participants versus vehicle, though most were unrelated to treatment (any TEAE: 31.2% vs 18.8%; related TEAE: 12.5% vs 2.5%)
  - The rates were similar to those seen in the overall safety population (n=779 tazarotene, n=791 vehicle) (any TEAE: 26.8% vs 19.1%; related TEAE: 11.3% vs 1.1%)[6]
- For cutaneous safety and tolerability assessments, there were slight, transient increases in scaling, itching, burning, and stinging beginning at week 2, though mean scores were <0.5 for all weeks (none=0 and mild=1)
- Only erythema was reported in more than 20% of participants in either treatment arm at baseline; as such, only these data are shown here (**Figure 4**)
  - In tazarotene-treated participants, reports of erythema decreased by week 12 and mean scores remained at or below 0.5 for all weeks

FIGURE 4. Investigator-Assessed Erythema by Visit in White Adults (Safety Population)



Data for "none" are not shown.
No imputation of missing data.
TAZ, tazarotene 0.045% lotion; VEH, vehicle lotion.

CONCLUSIONS

- Tazarotene 0.045% lotion was efficacious and well tolerated over 12 weeks, and led to quality-of-life improvements in White adults with moderate-to-severe acne; results were similar to the overall population[6]
- Three-quarters of tazarotene-treated participants achieved mild, almost clear, or clear skin, with fewer participants reporting moderate-to-severe erythema at week 12 versus baseline
  - The hydrating and moisturizing polymeric emulsion technology used in tazarotene 0.045% lotion allows for less than half the concentration of tazarotene versus other commercially available 0.1% formulations; this may help minimize instances of retinoid-induced erythema in White participants
- These results, combined with those from patients with skin of color,[7] show that once daily tazarotene 0.045% lotion is an effective and well tolerated treatment option regardless of skin color

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AUTHOR DISCLOSURES

James Q. Del Rosso has served as a consultant, investigator, and/or speaker for Ortho Dermatologics, Abbvie, Amgen, Arcutis, Dermavant, EPI Heath, Galderma, Incyte, LEO Pharma, Lilly, MC2 Therapeutics, Pfizer, Sun Pharma, and UCB. Linda Stein Gold has served as investigator/consultant or speaker for Ortho Dermatologics, LEO Pharma, Dermavant, Incyte, Novartis, AbbVie, Pfizer, Sun Pharma, UCB, Arcutis and Lilly. Stephen K. Tyring is has acted as an investigator for Ortho Dermatologics. William Phillip Werschler has served as an investigator for Ortho Dermatologics. Fran E. Cook-Bolden has served as consultant, speaker, investigator for Galderma, LEO Pharma, Almirall, Cassiopea, Ortho Dermatologics, Investigators Encore, Foamix, Hovione, Actavis, Cutanea. George Han is or has been an investigator, consultant/advisor, or speaker for AbbVie, Athenex, Boehringer Ingelheim, Bond Avillion, Bristol-Myers Squibb, Celgene, Eli Lilly, Novartis, Janssen, LEO Pharma, MC2, Ortho Dermatologics, PellePharm, Pfizer, Regeneron, Sanofi Genzyme, Sun Pharma, and UCB. Neal Bhatia has received grant/research support and/or advisor honoraria from Abbvie, Almirall, Biofrontera, BMS, BI, EPI Health, Ferndale, Foamix, Galderma, InCyte, ISDIN, J&J, LaRoche-Posay, Leo, Lilly, Ortho, Pfizer, P&G, Regeneron, Sanofi, SunPharma, Vyne, and Vyome. Eric Guenin is an employee of Ortho Dermatologics and may hold stock and/or stock options in its parent company.

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