Long-Term Efficacy and Safety of Hydrogen Peroxide Topical Solution, 45% (w/w) in Patients With Common Warts: Posttreatment Results From the Phase 2 WART 203 Trial

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CONCLUSIONS

1. Safety and clinical efficacy findings observed at 8 weeks of treatment with HP45 were maintained for 12 weeks following treatment cessation in patients with common warts
2. All assessments based on target warts and total warts showed statistically significant improvements at week 20 with HP45 treatment compared with vehicle
3. A Phase 3 clinical program evaluating HP45 treatment of common warts is planned

INTRODUCTION

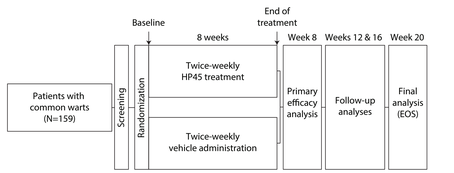
- Verruca vulgaris (common warts) is a cutaneous manifestation of the human papillomavirus that impacts as many as 20% of children and 10% of adults globally[1,2]
- Current treatments for common warts include chemodestruction, cryotherapy, burning, and in more difficult cases, laser treatments, chemical peels, or medications
  - No prescription therapies are approved by the US Food and Drug Administration for the treatment of common warts[1,3]
- A proprietary, stabilized, high-concentration hydrogen peroxide topical solution, 45% (w/w) (HP45) is currently in clinical development for the treatment of common warts[4]
- A Phase 2 clinical trial was designed to evaluate the efficacy and safety of HP45 in patients with common warts[4]
  - The objective of this presentation is to describe the long-term efficacy and safety of HP45 in patients with common warts at 12 weeks after completion of treatment

MATERIALS AND METHODS

Study Design

- The Phase 2 WART-203 trial (NCT03278028) was a randomized, double-blind, vehicle-controlled, multicenter study designed to evaluate the efficacy and safety of twice-weekly HP45 administration vs vehicle for 8 weeks in patients with common warts
- Patients were required to complete a total of 13 study visits: screening, randomization and first treatment, then 7 more weekly treatments, primary efficacy evaluation at week 8, additional follow-up evaluations at weeks 12 and 16, and follow-up/end-of-study evaluation at week 20 (**Figure 1**)

Figure 1. Study Design



EOS, end of study; HP45, hydrogen peroxide topical solution, 45% (w/w).

- During screening, an investigator identified 1 eligible target wart and up to 5 additional nontarget warts on the trunk or extremities of each enrolled patient
- During the 8-week treatment phase, all target and nontarget warts were treated twice each week (once at the study center and once by the patient—or guardian if a minor—at home)

Study Patients

- Eligible patients were ≥8 years of age with a clinical diagnosis of common warts and 1 to 6 warts (1 target wart) on the trunk or extremities with a score of ≥2 on the Physician Wart Assessment™ (PWA; **Table 1**)
  - Periungual, subungual, genital, anal, mosaic, plantar, flat, and filiform warts were excluded from treatment

Table 1. PWA Scoring

Grade	Description
0	Clear: no visible wart; no further treatment indicated
1	Near clear: a visible wart <3 mm in maximal diameter (or length)
2	A visible wart ≥3 mm and <6 mm in maximal diameter (or length)
3	A visible wart ≥6 mm in maximal diameter (or length)

PWA, Physician Wart Assessment.

Efficacy and Safety Analyses

- Efficacy analyses were conducted in the per-protocol population, defined as patients who completed the study, missed ≤3 treatment visits, completed the 8-week and 20-week (end of study) assessments, and had no documented protocol violations
- Endpoints were based on PWA scores (**Table 1**), used to record the severity of each target and nontarget wart at each time point
  - The primary and secondary efficacy endpoints assessed at week 8 are presented in the AAD 2019 ePoster by Tyring et al, Efficacy and Safety of Hydrogen Peroxide Topical Solution, 45% (w/w) for Treatment of Common Warts: 8-Week Results From the Phase 2 WART-203 Trial
  - Details regarding the development and validation of the PWA are shown in the AAD 2019 ePoster by Shanler et al, Rater Reliability Testing of the Physician Wart Assessment for Common Warts: A Noninterventional, Observational Study
- This analysis assessed efficacy endpoints in the per-protocol population at 12 weeks after the last treatment (study week 20) for HP45 vs vehicle
  - Efficacy was assessed among the per-protocol population with statistical significance defined as α=0.05
- Safety assessments in the safety population included the recording of treatment-emergent adverse events (TEAEs)

RESULTS

Patients

- Of the 159 patients enrolled and treated, 157 patients were included in the per-protocol population, and 151 patients completed posttreatment week 20 (HP45, n=75; vehicle, n=76) and were included in the long-term analysis
- Baseline demographics and clinical characteristics of study patients are summarized in **Table 2**

Table 2. Baseline Demographics and Clinical Characteristics of Study Patients (N=159)

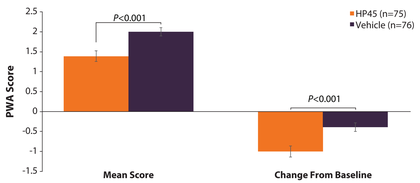
Characteristic	Patients
Age, y	
Mean (SD)	39.7 (17.8)
Range	9–85
Age group	
≤18 y	24 (15.1)
19–64 y	122 (76.7)
≥64 y	13 (8.2)
Gender	
Female	91 (57.2)
Race	
White	148 (93.1)
African American	5 (3.1)
Native Hawaiian or other Pacific Islander	2 (1.3)
Asian	1 (0.6)
Other	3 (1.9)
Ethnicity	
Hispanic or Latino	29 (18.2)
Not Hispanic or Latino	120 (75.5)
Not reported	10 (6.3)
Fitzpatrick skin type	
I	3 (1.9)
II	58 (36.5)
III	52 (32.7)
IV	35 (22.0)
V	6 (3.8)
VI	5 (3.1)
PWA score of 2 or 3, %	
PWA = 2	60.5
PWA = 3	39.5
No. of treated warts per patient	
Mean	1.85
Range	1–6

Data reported are n (%) unless otherwise indicated.
N, total number of patients enrolled in study; n, number of patients for each characteristic described.

Efficacy

- At week 20, patients treated with HP45 maintained a statistically significantly greater reduction in mean target wart PWA score from baseline (−1.00) vs those treated with vehicle (−0.39; *P*=0.0004; **Figure 2**)
  - Mean PWA scores at week 20 were 1.39 and 2.00 for HP45 and vehicle, respectively

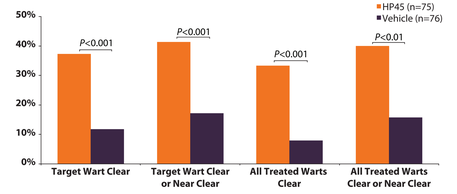
Figure 2. Mean Score and Mean Change From Baseline PWA Scores at Week 20, Per-Protocol Population (N=157)



Between-treatment comparisons performed using analysis of covariance with baseline PWA as the covariate.
PWA, Physician Wart Assessment.

- Proportions of patients with the target wart clear at week 20 were statistically significantly greater with HP45 treatment (37.3%) vs vehicle (11.8%; *P*=0.0002; **Figure 3**)
  - Proportions of patients with the target wart clear or near clear at week 20 were statistically significantly greater with HP45 treatment (41.3%) vs vehicle (17.1%; *P*=0.0009)
  - The week 20 results represent an increase in the proportion of patients with clearance of the target wart from week 8 after treatment was completed (please see the AAD 2019 ePoster by Tyring et al, Efficacy and Safety of Hydrogen Peroxide Topical Solution, 45% [w/w] for Treatment of Common Warts: 8-Week Results From the Phase 2 WART-203 Trial)
- A statistically significantly greater proportion of patients treated with HP45 maintained all treated warts clear at week 20 (33.3%) vs vehicle (7.9%; *P*=0.0002; **Figure 3**)
  - A statistically significantly greater proportion of patients treated with HP45 maintained all treated warts clear or near clear at week 20 (40.0%) vs vehicle (15.8%; *P*=0.0019)

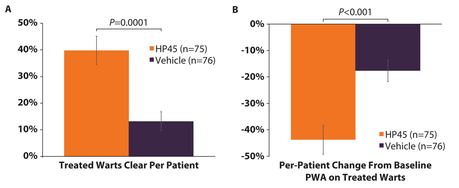
Figure 3. Percentages of Target Warts or All Treated Warts Clear or Almost Clear at Week 20, Per-Protocol Population (N=157)



Clear defined as PWA = 0; near clear defined as PWA = 1. Between-treatment comparisons for target wart assessments performed using the Fisher exact test (left-sided probability ≤ frequency), and for all treated warts comparisons were performed using the Cochran-Mantel-Haenszel test.
PWA, Physician Wart Assessment.

- The mean per-patient percentage of "treated warts clear" at week 20 was significantly greater for HP45 (39.8%) vs vehicle (13.3%; *P*=0.0001; **Figure 4A**)
  - The mean per-patient percentage change from baseline in PWA score on treated warts at week 20 was significantly greater with HP45 (−43.8%) vs vehicle (−17.7%; *P*=0.0002; **Figure 4B**)

Figure 4. (A) Per-Patient Percentages of Warts Cleared, and (B) Per-Patient Percent Change From Baseline PWA Score on Treated Warts at Week 20, Per-Protocol Population (N=157)



For comparisons between groups, *P* values were calculated using type 3 tests of fixed effects.
PWA, Physician Wart Assessment.

Safety

- Of 159 patients in the safety analysis, 47 patients reported 76 TEAEs; most were mild or moderate in severity (**Table 3**)
  - The most common treatment-related TEAE in the HP45 treatment group was skin hypopigmentation (n=2; 2.5%)
  - No serious adverse events were reported
  - No patients discontinued treatment due to TEAEs

Table 3. Summary of Adverse Events, Safety Population (N=159)

	HP45 (n=81)	Vehicle (n=78)	Total (N=159)
All TEAEs	44 (54.3)	32 (41.0)	76 (47.8)
Patients with TEAEs	28 (34.6)	19 (24.4)	47 (29.6)
SAEs reported	0	0	0
Patients with SAE	0	0	0
TEAEs by severity			
Mild	16 (19.8)	15 (19.2)	31 (19.5)
Moderate	12 (14.8)	3 (3.9)	15 (9.4)
Severe	0	1 (1.3)	1 (0.6)
Patients who discontinued due to TEAEs	0	0	0
Patients requiring concomitant or additional treatment	19 (23.5)	15 (19.2)	34 (21.4)
TEAEs by preferred term			
Nasopharyngitis	5 (6.2)	4 (5.1)	9 (5.7)
Upper respiratory tract infection	4 (4.9)	4 (5.1)	8 (5.0)
Viral gastroenteritis	2 (2.5)	1 (1.3)	3 (1.9)
Headache	2 (2.5)	1 (1.3)	3 (1.9)
Sinusitis	0	3 (3.9)	3 (1.9)
Constipation	0	2 (2.6)	2 (1.3)
Hypertension	2 (2.5)	0	2 (1.3)
Influenza	2 (2.5)	0	2 (1.3)
Injury	2 (2.5)	0	2 (1.3)
Skin hypopigmentation	2 (2.5)	0	2 (1.3)

Data are reported as n (%).
SAE, serious adverse event; TEAE, treatment-emergent adverse event.

References

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Disclosures

SKT has conducted clinical studies sponsored by Aclaris; SRS has been an investigator and consultant for Aclaris; MHG has conducted clinical studies sponsored by and is a consultant for Aclaris; MB is a statistical consultant to Aclaris and owns stock in that company; SDS is an employee of Aclaris and may own stock/stock options in that company.

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