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

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CONCLUSIONS

1. Treatment with HP45 was safe and well tolerated and resulted in a statistically significantly greater reduction from baseline in target wart PWA score compared with vehicle as early as week 3 after treatment initiation
2. Compared with vehicle, HP45 led to the clearance of more target warts by week 4 and resulted in the clearance of all treated warts in more patients by week 6
3. This study provides supportive evidence for the safety and efficacy of HP45 topical solution in the treatment of common warts; a Phase 3 clinical program is under way

INTRODUCTION

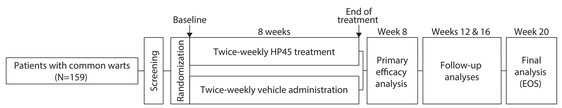
- Verruca vulgaris (common warts) is a cutaneous manifestation of the human papillomavirus that impacts approximately 10% of adults and up to 20% of school-age children worldwide[1,2]
- Effective treatment of common warts is challenging as no US Food and Drug Administration–approved prescription therapies are available
  - Current treatments are myriad and include chemodestruction, cryotherapy, electrosurgical ablation, topical or intralesional chemotherapy or immunotherapy, ablative or pulsed-dye laser treatments, excision, or a number of topical and oral medications[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 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 primary efficacy and safety results assessed at the end of 8 weeks of treatment with HP45

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 weekly (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 designated as the 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. Physician Wart Assessment Scoring[a]

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)

[a] 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.

Efficacy and Safety Analyses

- Efficacy analyses were conducted in the per-protocol population, defined as patients who completed the study, were eligible for inclusion in the efficacy analyses, 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 determine the severity of each target and nontarget wart at each time point
  - The primary efficacy endpoint was the mean change from baseline in target wart PWA score at the 8-week assessment for HP45 vs vehicle
  - Secondary efficacy endpoints at week 8 were the proportion of patients with the target wart clear (PWA = 0), the proportion with all treated warts clear, and mean per-patient percentages of treated warts that were clear for HP45 vs vehicle
- Efficacy was assessed using the per-protocol population with statistical significance defined as α=0.05
- Safety assessments conducted in the safety population (all enrolled and treated patients) comprised the recording of treatment-emergent adverse events (TEAEs)

RESULTS

Study Patients

- Of the 159 patients enrolled and treated, 157 patients completed 8 weeks of treatment (HP45, n=79; vehicle, n=78) and were included in the per-protocol population for efficacy analyses
- 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)

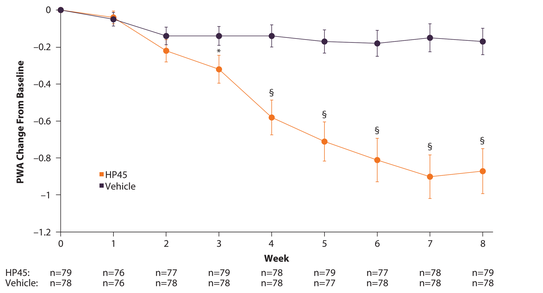
Characteristic	Patients
Age, y	
Mean (SD)	39.7 (17.8)
Range	9–85
Age group	
≤18 y	24 (15.1)
19–64 y	122 (76.7)
≥64 y	13 (8.2)
Gender	
Female	91 (57.2)
Race	
White	148 (93.1)
African American	5 (3.1)
Native Hawaiian or other Pacific Islander	2 (1.3)
Asian	1 (0.6)
Other	3 (1.9)
Ethnicity	
Hispanic or Latino	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; PWA, Physician Wart Assessment.

Efficacy

- A statistically significantly greater reduction in mean target wart PWA score from baseline at week 8 was achieved with HP45 (−0.87) vs vehicle (−0.17; $P<0.0001$; **Figure 2**)
  - Statistically significant efficacy for HP45 vs vehicle was observed as early as week 3 (HP45, −0.32; vehicle, −0.14; $P=0.04$)

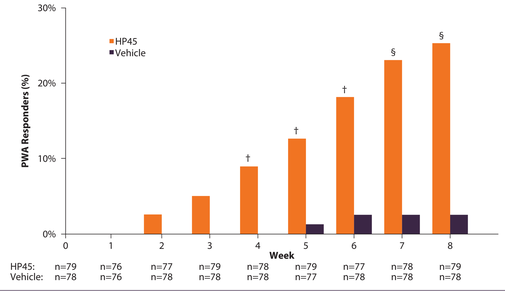
Figure 2. Mean Change From Baseline in PWA by Treatment Week (Primary Efficacy Variable), Per-Protocol Population (N=157)



Between-treatment comparisons performed using analysis of covariance with baseline PWA as the covariate.
HP45, hydrogen peroxide topical solution, 45% (w/w); PWA, Physician Wart Assessment.
*$P<0.05$; §$P\leq0.0001$.

- The proportion of patients with target wart clear at week 8 was statistically significantly greater among patients treated with HP45 (25.3%) vs vehicle (2.6%; $P<0.0001$; **Figure 3**)
  - A statistically significant difference with HP45 vs vehicle was observed beginning at week 4

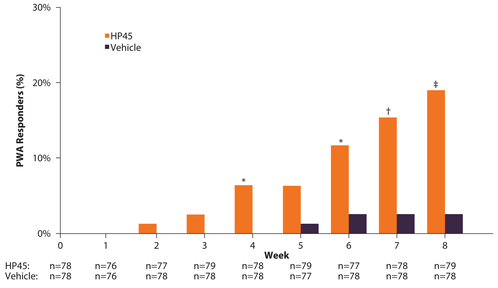
Figure 3. Proportions of Patients With Target Wart Clear by Treatment Week, Per-Protocol Population (N=157)



Clear defined as PWA = 0. Between-treatment comparisons performed using the Fisher exact test (left-sided probability ≤ frequency).
HP45, hydrogen peroxide topical solution, 45% (w/w); PWA, Physician Wart Assessment.
†$P<0.01$; §$P\leq0.0001$.

- A statistically significantly greater proportion of patients treated with HP45 vs vehicle achieved clearance of all treated warts at week 8 (19.0% vs 2.6%; $P=0.001$; **Figure 4**)
  - A statistically significant difference between HP45 and vehicle groups was observed at week 4, and from weeks 6 to 8

Figure 4. Proportions of Patients Who Achieved Clearance of All Treated Warts by Treatment Week, Per-Protocol Population (N=157)



Clear defined as PWA = 0. Between-treatment comparisons performed using the Cochran-Mantel-Haenszel test.
HP45, hydrogen peroxide topical solution, 45% (w/w); PWA, Physician Wart Assessment.
*$P<0.05$; †$P<0.01$; ‡$P\leq0.001$.

Safety

- All 159 enrolled patients were evaluated for safety
- A total of 47 patients reported 76 TEAEs; most were mild or moderate in severity
- No patients discontinued treatment during the study due to TEAEs
- A total of 6 TEAEs reported by 4 patients (4.9% of the 81 HP45 patients) were considered related to treatment
  - All treatment-related TEAEs were in the HP45 treatment group, and none were serious or severe
  - The only treatment-related TEAE experienced by more than 1 patient was skin hypopigmentation (n=2; 2.5%)
- Detailed safety data are presented in the AAD 2019 ePoster by Tyring et al, 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

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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