

Onset of Treatment Effectiveness With Hydrogen Peroxide Topical Solution 40% and 45% (w/w) in Patients With Seborrheic Keratoses on the Trunk, Extremities, and Face: Results of a Phase 2, Randomized, Double-Blind, Vehicle-Controlled, Parallel-Group Study

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INTRODUCTION

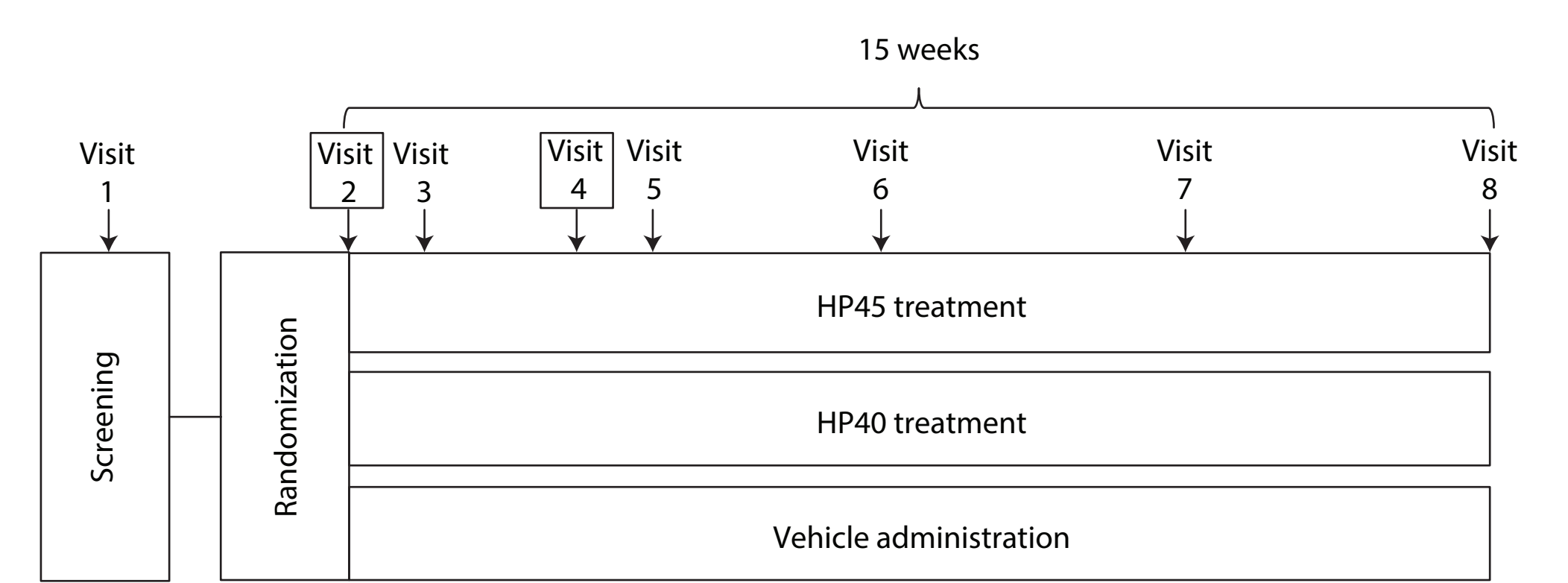
- Seborrheic keratoses (SKs) are benign cutaneous lesions affecting approximately 84 million individuals in the US¹
- Current treatment options for SKs require surgical or ablative procedures, including liquid nitrogen cryotherapy, shave removal, curettage, chemical peels, and laser treatments^{2,3}
 - The efficacy, safety, and tolerability profiles of these therapies are not well established, and some of these procedures can lead to adverse cosmetic effects²⁻⁶
- The US Food and Drug Administration has approved a proprietary, stabilized hydrogen peroxide topical solution 40% (w/w) (HP40) for the treatment of raised SKs
- The objective of this presentation is to describe the onset of efficacy of HP40 and of a proprietary hydrogen peroxide topical solution 45% (w/w) (HP45) compared with vehicle in a Phase 2 study of the efficacy and safety of these formulations for treatment of SKs on the trunk, extremities, and face

MATERIALS AND METHODS

Study Design

- This was a Phase 2, multicenter, randomized, double-blind, vehicle-controlled, parallel-group study (NCT03148691)
- The study consisted of 8 study visits over a maximum of 127 days, with target lesions treated at 2 treatment visits (Figure 1)
 - During screening (visit 1), 4 eligible SK target lesions located on the trunk, extremities, and face were identified for each patient; ≥1 target lesion must have been on the face and ≥1 must have been on the trunk or extremities
 - At visit 2, patients were randomized in a 1:2:2 ratio to receive vehicle, HP40, or HP45, respectively, and received the first treatment
- After a follow-up examination on day 8 (visit 3), target lesion assessments and retreatment occurred during visit 4 (day 22) if lesions met retreatment criteria (having a score of >0 on the validated Physician Lesion Assessment™ [PLA])
- Visits 5, 6, and 7 (days 29, 50, and 78) included follow-up, as well as target lesion assessment at visits 6 and 7, followed by a final target lesion assessment at end-of-study visit 8 (day 106)
- The per-protocol population included all eligible patients who received all study treatments, completed study visit 8, had all 4 target lesions assessed by PLA at study visit 8, and did not have a protocol violation during the study

Figure 1. Study Design



All target SK lesions were treated during visit 2; SK lesions meeting the criteria for retreatment were treated at visit 4. HP40, hydrogen peroxide topical solution, 40% (w/w); HP45, hydrogen peroxide topical solution, 45% (w/w); SK, seborrheic keratosis.

Study Patients

- Eligible patients were ≥18 years of age with a diagnosis of 4 clinically stable SK target lesions on the trunk, extremities, and face (≥1 target lesion on the face and ≥1 target lesion on the trunk or extremities)
 - Target lesions were required to be discrete with a clinically typical appearance; PLA (Table 1) grade ≥2; length and width 5 to 15 mm, thickness ≤2 mm, and not obstructed or within 5 mm of the orbital rim

Study Assessments

- Lesion severity (primary effectiveness parameter) was assessed by the PLA, described in Table 1

Table 1. PLA Scoring

| Grade | Description |
|-------|--|
| 0 | Clear: no visible SK lesion |
| 1 | Near clear: a visible SK lesion with a surface appearance different from the surrounding skin (not elevated) |
| 2 | Thin: a visible SK lesion (thickness ≤1 mm) |
| 3 | Thick: a visible SK lesion (thickness >1 mm) |

PLA, Physician Lesion Assessment; SK, seborrheic keratosis.

- Efficacy was analyzed in the per-protocol population using a pairwise comparison between groups based on the mean per-patient percentages of target lesions clear (PLA = 0) at day 106 (visit 8)
- Safety assessments included treatment-emergent adverse events (TEAEs)

RESULTS

Study Patients

- A total of 253 patients were included in the intent-to-treat population (all randomized patients) and randomly assigned to receive HP40 (n=103), HP45 (n=100), or vehicle (n=50)
- Baseline demographics and clinical characteristics were similar across groups (Table 2)

Table 2. Baseline Demographics and Clinical Characteristics, Intent-to-Treat Population

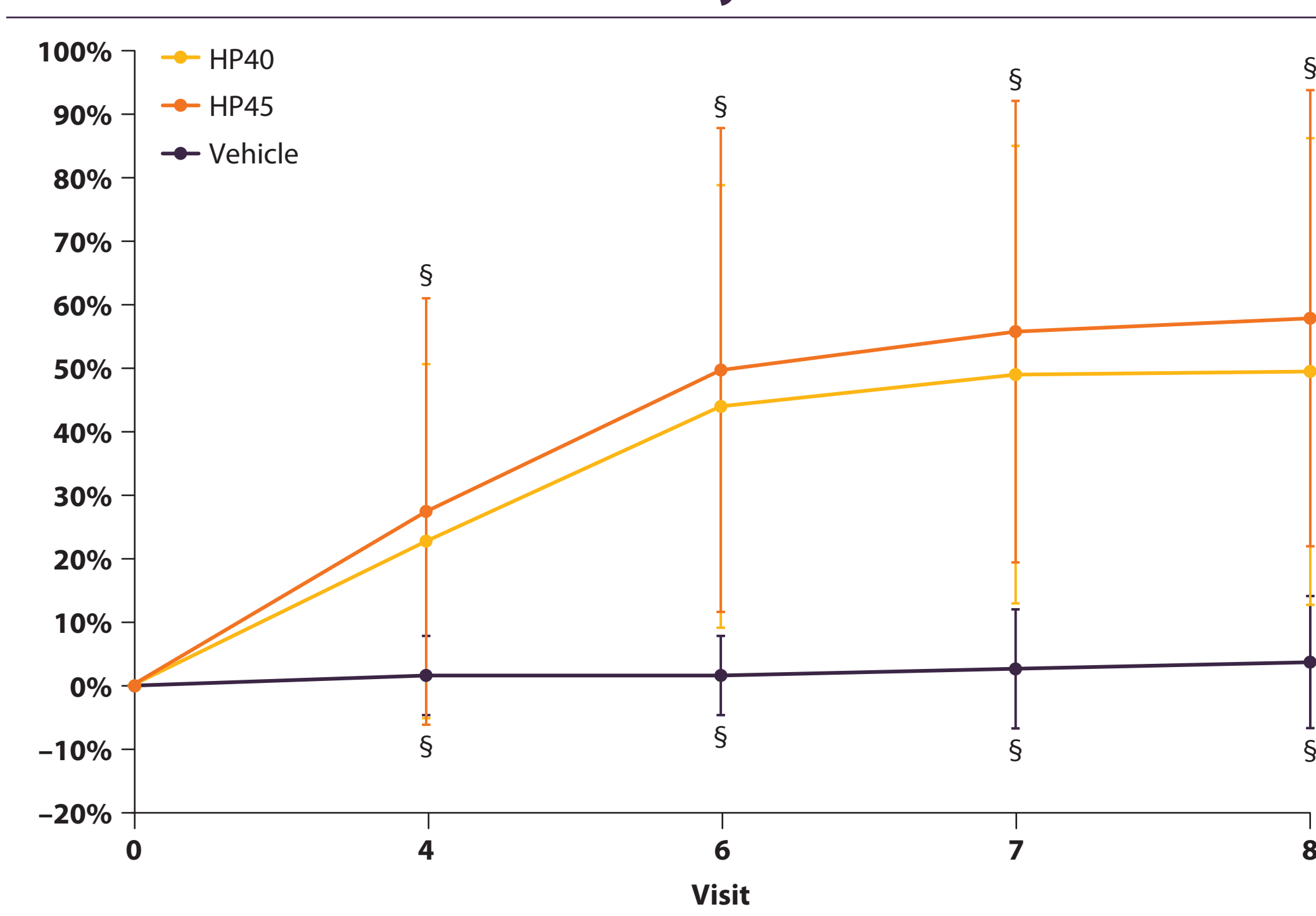
| Characteristic | HP40 (n=103) | HP45 (n=100) | Vehicle (n=50) |
|------------------------------|--------------|--------------|----------------|
| Age, y | | | |
| Mean ± SD | 69.1 ± 8.75 | 70.0 ± 8.12 | 69.0 ± 8.27 |
| Range | 49–87 | 45–89 | 53–89 |
| Age group | | | |
| 18–55 y | 7 (6.8) | 4 (4.0) | 2 (4.0) |
| 56–70 y | 53 (51.5) | 54 (54.0) | 30 (60.0) |
| ≥71 y | 43 (41.7) | 42 (42.0) | 18 (36.0) |
| Gender | | | |
| Female | 59 (57.3) | 67 (67.0) | 31 (62.0) |
| Race | | | |
| White | 98 (95.1) | 92 (92.0) | 46 (92.0) |
| African American | 4 (3.9) | 8 (8.0) | 4 (8.0) |
| Asian | 1 (1.0) | 0 | 0 |
| Fitzpatrick skin type | | | |
| I | 10 (9.7) | 9 (9.0) | 6 (12.0) |
| II | 45 (43.7) | 40 (40.0) | 24 (48.0) |
| III | 36 (35.0) | 35 (35.0) | 14 (28.0) |
| IV | 8 (7.8) | 7 (7.0) | 2 (4.0) |
| V | 4 (3.9) | 8 (8.0) | 4 (8.0) |
| VI | 0 | 1 (1.0) | 0 |

Data are n (%) unless otherwise indicated. HP40, hydrogen peroxide topical solution, 40% (w/w); HP45, hydrogen peroxide topical solution, 45% (w/w).

Efficacy

- A total of 240 patients were included in the per-protocol population (HP40, n=101; HP45, n=92; vehicle, n=47)
- The mean per-patient percentage of target lesions clear at visit 8 (primary efficacy variable) was significantly greater among patients treated with HP40 (49.5%) and HP45 (57.9%) vs vehicle (3.7%; $P<0.0001$ for both comparisons); please see the AAD 2019 ePoster by DuBois et al, Effectiveness of Hydrogen Peroxide Topical Solution 40% and 45% (w/w) in Patients With Seborrheic Keratoses on the Trunk, Extremities, and Face
- Statistically significant differences in the mean per-patient percentages of target lesions clear on the face, trunk, and extremities for HP40 and for HP45 vs vehicle were observed as early as visit 4 (both $P<0.0001$), and were maintained through the remainder of the study ($P<0.0001$; Figure 2)

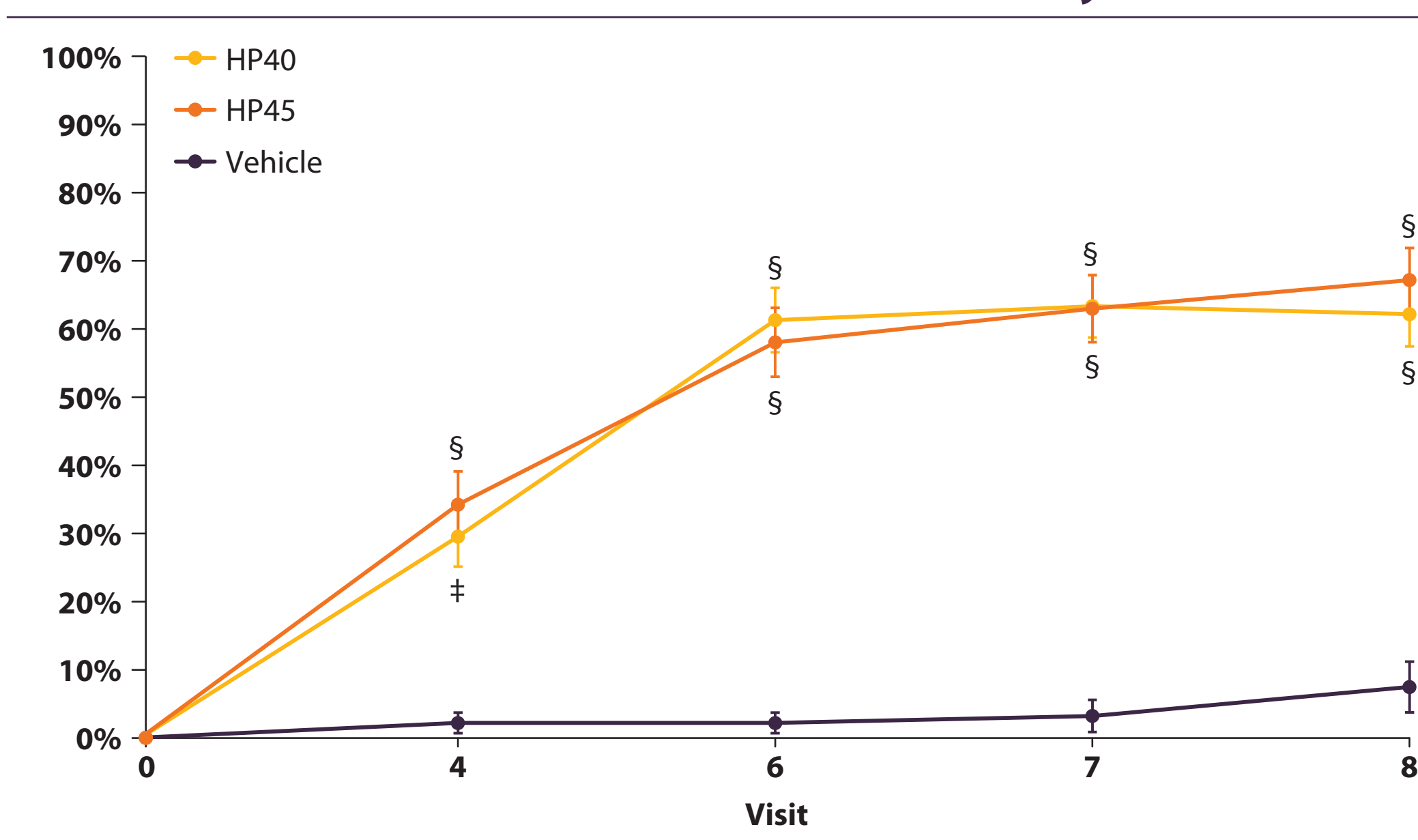
Figure 2. Mean Per-Patient Percentages of All Target Lesions Cleared Over Time by Treatment



Vertical bars represent standard deviations. HP40, hydrogen peroxide topical solution, 40% (w/w); HP45, hydrogen peroxide topical solution, 45% (w/w). * $P<0.0001$ vs vehicle.

- Significant differences in mean per-patient percentages of target lesions clear on the face with HP40 and HP45 vs vehicle were observed as early as visit 4 ($P<0.0002$), and were maintained through the remainder of the study ($P<0.0001$) (Figure 3)

Figure 3. Mean Per-Patient Percentages of All Target Lesions Cleared on the Face Over Time by Treatment



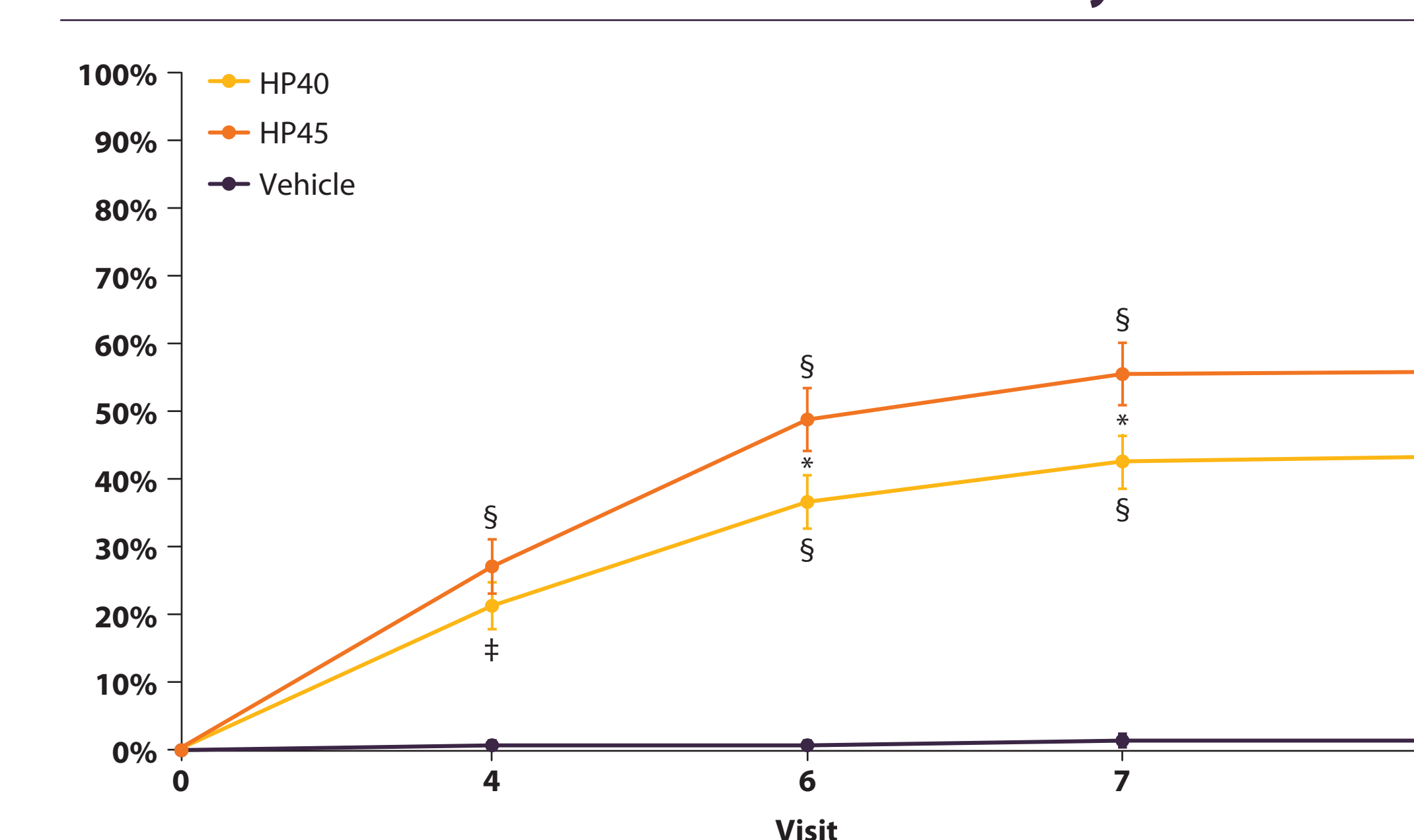
Vertical bars represent standard deviations. HP40, hydrogen peroxide topical solution, 40% (w/w); HP45, hydrogen peroxide topical solution, 45% (w/w). * $P<0.001$ vs vehicle. † $P<0.0001$ vs vehicle.

CONCLUSIONS

- 1 Compared with vehicle, HP40 and HP45 resulted in early onset of improvements in SK lesions; improvements over vehicle were observed as early as the first posttreatment assessment at visit 4
- 2 Early onset of efficacy with HP40 and HP45 was observed in all body regions assessed
- 3 Findings of this Phase 2 clinical study provide supportive evidence of the early onset of efficacy following topical treatment with HP40 and HP45 in patients with SKs on the face, extremities, and trunk

- Significant differences in mean per-patient percentages of target lesions clear on the trunk with HP40 and HP45 vs vehicle were observed by visit 4 (Figure 4)
 - Differences for HP40 vs HP45 were only significant for trunk lesions clear at visits 6 to 8 ($P<0.03$)

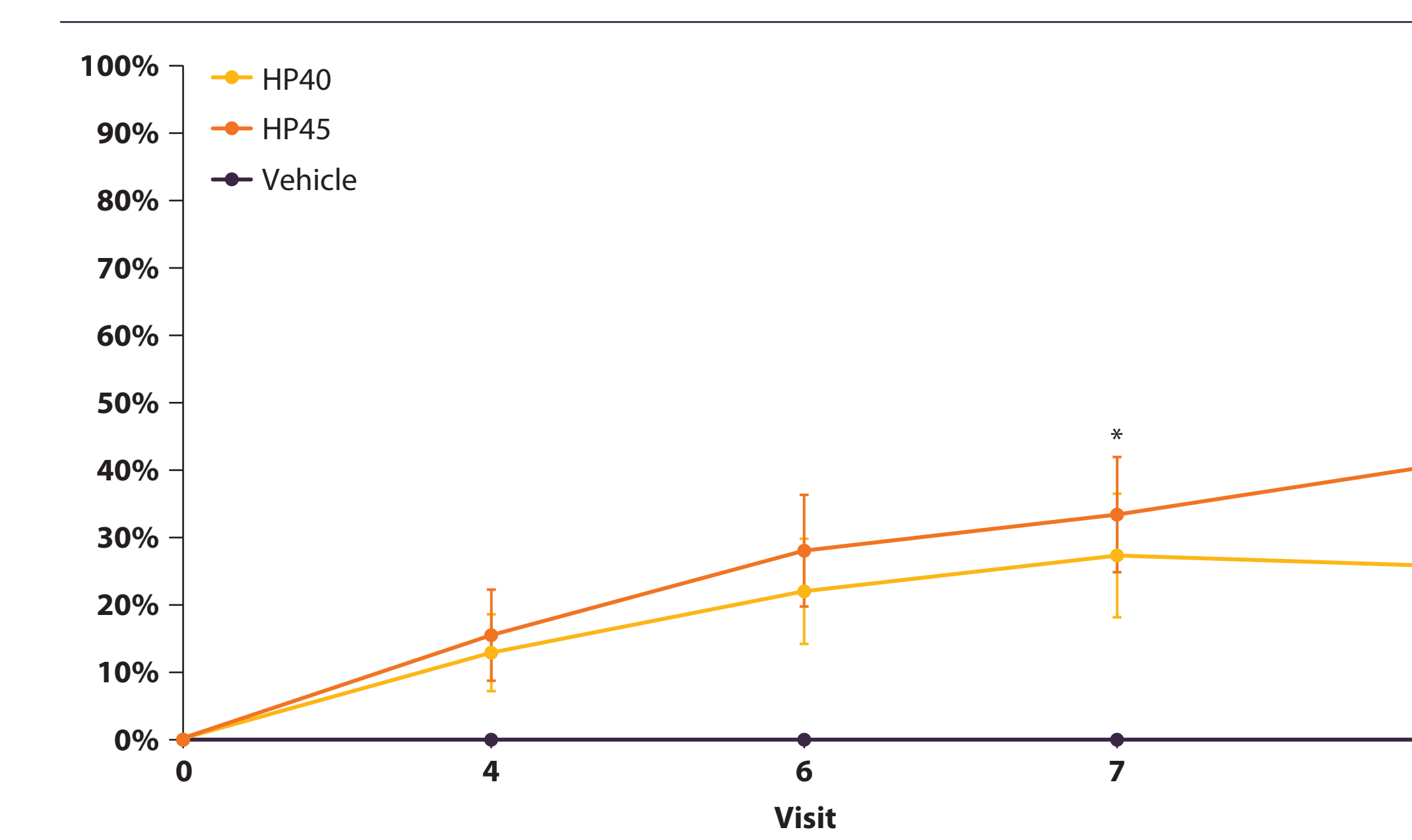
Figure 4. Mean Per-Patient Percentages of All Target Lesions Cleared on the Trunk at Visit 8 by Treatment



Vertical bars represent standard deviations. HP40, hydrogen peroxide topical solution, 40% (w/w); HP45, hydrogen peroxide topical solution, 45% (w/w). * $P<0.05$, HP40 vs HP45. † $P<0.001$ vs vehicle. ‡ $P<0.0001$ vs vehicle.

- For target lesions clear on the extremities, only HP45 showed significance vs vehicle, which first occurred at visit 7 (Figure 5)

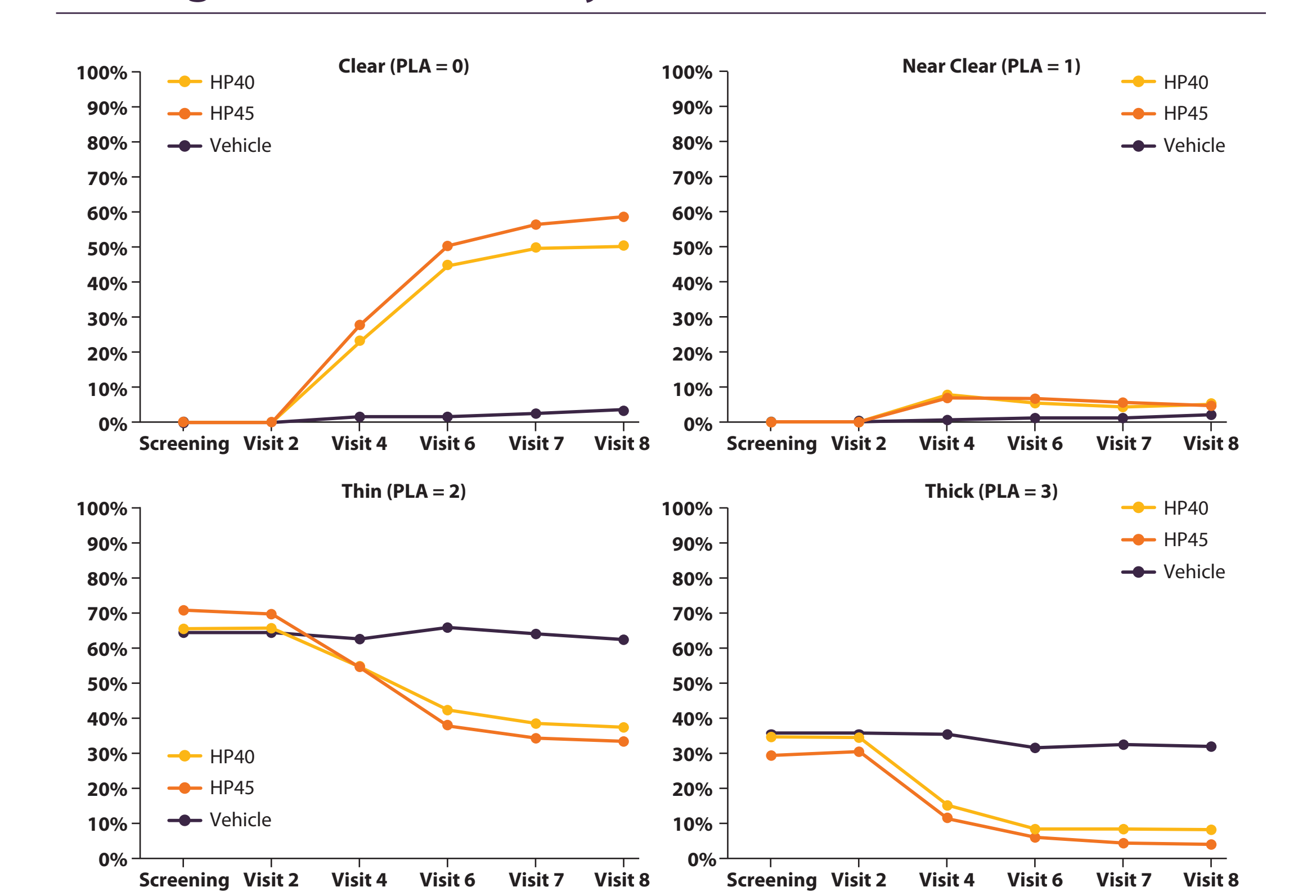
Figure 5. Mean Per-Patient Percentages of All Target Lesions Cleared on the Extremities Over Time by Treatment



Vertical bars represent standard deviations. HP40, hydrogen peroxide topical solution, 40% (w/w); HP45, hydrogen peroxide topical solution, 45% (w/w). * $P<0.05$ vs vehicle.

- Greater proportions of patients treated with HP40 and HP45 vs vehicle had cleared lesions over time to the end of the study (Figure 6)
 - Similarly, treatment with HP40 and HP45 resulted in greater reductions in thin and thick lesions over time compared with vehicle

Figure 6. Changes in Proportions of Lesions Within PLA Categories Over Time by Treatment



HP40, hydrogen peroxide topical solution, 40% (w/w); HP45, hydrogen peroxide topical solution, 45% (w/w); PLA, Physician Lesion Assessment.

Safety

- TEAEs were reported in 17.5%, 26.0%, and 22.0% of patients in the HP40, HP45, and vehicle groups, respectively; most were of mild to moderate intensity
- The most common TEAEs (≥2 patients per group) were nasopharyngitis, bronchitis, drug eruption, headache, and hypertension
- 4 serious TEAEs occurred across the 3 groups (HP40: syncope, deep vein thrombosis; HP45: pancreatic carcinoma; vehicle: atrial fibrillation); none were related to study medication
- Full safety results are presented in the AAD 2019 ePoster by DuBois et al, Safety of Hydrogen Peroxide Topical Solution 40% and 45% (w/w) in Patients With Seborrheic Keratoses on the Trunk, Extremities, and Face

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Disclosures

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