Efficacy of ALA–PDT in the treatment of actinic keratoses on the upper extremities: A post hoc analysis of a phase 3, randomized, vehicle-controlled trial

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METHODS

Study design
• A post hoc analysis of a phase 3, randomized, evaluator-blinded, vehicle-controlled, parallel group trial (NCT01377028) conducted between May 8, 2014, and March 5, 2015.
• The study enrolled men and women 18 years of age with ≥512 AKs on ≤1 upper extremity treated area, defined as the area between the elbow and the base of the fingers.

Endpoints and assessments
• AK lesion count and mapping were performed at baseline and at weeks 4, 8, and 12, and lesion size and grade were assessed at baseline and at weeks 8 and 12.
• Pilot hoc assessments included mean AK clearance rate compared to baseline, cumulative disease area, and subgroup analysis of complete clearance.
• Safety assessments included assessment of PDT responses (biotolerance) and adverse event (AE) monitoring.

Statistical analyses
• Continuous variables were summarized using descriptive statistics (n, mean, median, standard deviation [SD], and range), and categorical variables were summarized using frequency counts and percentages.
• Lesion clearance rate was calculated as 1 – (number of AK lesions present at follow-up)/number of AK lesions at baseline ≤100.
• Statistical comparisons of clearance rate and percent cumulative disease area cleaned used a linear mixed model with fixed effects for treatment group, time point, and treatment group by time interaction.

BACKGROUND
• A phase 3 randomized, evaluator-blinded, vehicle-controlled trial involving 130 patients (N = 135) randomized to ALA–PDT and VEH–PDT, respectively.
• Three SCCs were diagnosed in 3 patients treated with VEH–PDT, of whom 2 had prior history of SCC.

RESULTS
• AK lesions ≥36 mm defined as large lesions.
• More than half of patients treated with ALA–PDT experienced complete clearance of larger lesions at week 12, with 48.6% (70.1%) of patients exhibiting complete clearance of lesions ≥25–36 mm2 and 20.5% (30.9%) of patients exhibiting complete clearance of lesions ≥36 mm2.

DISCLOSURES
• Reactions to PDT were all expected, nonserious, and would typically resolve within several weeks.
• No significant safety issues were reported for either study group (Table 3) and there were no discontinuations due to AEs.

REFERENCES

CONCLUSIONS
• Significant higher clearance rates of treated AKs and significantly higher percent of treated disease area cleared with ALA–PDT, with good response of large lesions.
• Therapy with ALA–PDT was well tolerated, and no safety concerns were raised.

TABLE 1. Patient demographics and baseline disease characteristics

| Study Group | Age, years (SD) | Sex, Male (%) | Race | White (%) | Non-Native or Hispanic (%) | Number of lesions | Grade 2 (%) | Grade 3 (%) | Lesions per patient, mean (SD) | Complete clearance rate
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<tbody>
<tr>
<td>ALA–PDT</td>
<td>67.6 (3.4)</td>
<td>84.8</td>
<td>White</td>
<td>57.0 (31.6)</td>
<td>42.0</td>
<td>130 (100)</td>
<td>114 (85.2)</td>
<td>15 (11.5)</td>
<td>8.5 (3.4)</td>
<td>80.6 (22.6)</td>
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<tr>
<td>VEH–PDT</td>
<td>67.6 (3.4)</td>
<td>84.8</td>
<td>White</td>
<td>57.0 (31.6)</td>
<td>42.0</td>
<td>130 (100)</td>
<td>114 (85.2)</td>
<td>15 (11.5)</td>
<td>8.5 (3.4)</td>
<td>45.5 (37.2)</td>
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**Table 1.** Patient demographics and baseline disease characteristics.

**Figure 2.** Percent cumulative disease area cleared at weeks 5 and 12

**Figure 2.** More than half of patients treated with ALA–PDT experienced complete clearance of larger lesions at week 12, with 48.6% (70.1%) of patients exhibiting complete clearance of lesions ≥25–36 mm2 and 20.5% (30.9%) of patients exhibiting complete clearance of lesions ≥36 mm2.