
Photoprotective habits of patients with cutaneous lupus erythematosus

Shirley Y. Yang, BS,^a Ira Bernstein, PhD,^b Danielle Q. Lin, BA,^a and Benjamin F. Chong, MD^a
Dallas, Texas

Background: Previous studies have suggested that patients with cutaneous lupus erythematosus (CLE) are deficient in sunscreen use. Use of other photoprotective methods by patients with CLE has not been assessed to our knowledge.

Objective: We sought to identify demographic and clinical characteristics of patients with CLE who have the lowest overall sun-protection habits scores, and who are least likely to practice 5 individual photoprotective methods (ie, shade, sunscreen, long sleeves, hat, and sunglasses).

Methods: A total of 105 patients with CLE at the University of Texas Southwestern Medical Center in Dallas completed a survey to evaluate their photoprotective practices. Additional information including demographics and clinical indicators related to CLE was collected from the patients.

Results: Patients with medium and dark skin (ie, Fitzpatrick skin types III-VI) and patients aged 31 to 50 years were the least likely CLE subgroups to practice overall photoprotection, as indicated by low sun-protection habits scores ($P = .001$ and $P = .04$, respectively). In terms of individual photoprotective methods, male patients with CLE were deficient in sunscreen use, but were more likely to wear hats than female patients with CLE. Sunscreen and sunglasses use was also significantly more infrequent in dark-skinned patients than those with Fitzpatrick skin types I to IV. Patients with CLE between the ages of 41 and 50 years were least likely to wear hats.

Limitations: This study was subject to reporter bias and did not cover barriers to and knowledge of photoprotection.

Conclusion: Cultural customs and misconceptions shared by those from the general population have a significant influence on the photoprotective habits of this CLE population. These need to be addressed to improve photoprotection rates in these at-risk individuals. (J Am Acad Dermatol 2013;68:944-51.)

Key words: cutaneous lupus erythematosus; hats; long sleeves; photoprotection; shade; sun-protection habits score; sunglasses; sunscreen.

Ultraviolet (UV) radiation, specifically in the spectrum of UVA (wavelength 320–400 nm) and UVB (wavelength 290–320 nm) light, is a well-documented trigger of skin lesions in patients with cutaneous lupus erythematosus (CLE).^{1,2} Thus, patients are counseled to avoid direct sun exposure and use photoprotection whenever outdoors. Five of

Abbreviations used:

CLE: cutaneous lupus erythematosus
LE: lupus erythematosus
SLE: systemic lupus erythematosus
SPH: sun-protection habits
UV: ultraviolet

From the Departments of Dermatology^a and Clinical Sciences,^b University of Texas Southwestern Medical Center.

The research reported in this publication was supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases of the National Institutes of Health under Award Number K23AR061441. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Disclosure: Dr Chong is an investigator for Celgene Corp, Amgen Inc, and Daavlin Corp. Dr Bernstein serves as a consultant for

Johnson and Johnson. Ms Yang and Ms Lin have no conflicts of interest to declare.

Accepted for publication November 26, 2012.

Reprint requests: Benjamin F. Chong, MD, Department of Dermatology, University of Texas Southwestern Medical Center, 5323 Harry Hines Blvd, Dallas, TX 75390-9069. E-mail: ben.chong@utsouthwestern.edu.

Published online January 28, 2013.

0190-9622/\$36.00

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<http://dx.doi.org/10.1016/j.jaad.2012.11.016>

the most common photoprotective methods are applying sunscreen, wearing long-sleeved clothing, wearing hats, wearing sunglasses, and seeking shade.^{3,4}

Studies on the photoprotective habits of patients with lupus have mainly focused only on their frequency of sunscreen use. A study of 60 Puerto Rican patients with systemic lupus erythematosus (SLE) showed that whereas 98.3% reported knowing that sunlight can exacerbate cutaneous manifestations of their disease, only 50% actually practiced regular sunscreen use.⁵ Of patients with SLE in Brazil, 66.7% (N = 159) reported year-round sunscreen use, compared with only 23.1% of patients with CLE in Ireland (N = 52), where the annual UV exposure is lower.^{6,7} Whether patients with CLE compensate by adopting other photoprotective habits is unknown.

By means of a cross-sectional survey distributed to patients enrolled in the University of Texas Southwestern CLE Registry, we sought to assess their overall photoprotection and frequency of individual photoprotective methods (eg, wearing sunscreen, hat, long sleeves, and sunglasses; staying under shade or umbrella). We also subdivided this CLE population by various demographic and clinical characteristics of interest. Our primary aim was to identify subgroups of patients with CLE who are least likely to engage in overall photoprotection and individual photoprotective habits.

METHODS

Patient population

A cross-sectional survey to evaluate photoprotective practices was administered to patients with CLE enrolled in the CLE registry at the University of Texas Southwestern Medical Center in Dallas (institutional review board protocols #1120008-008 [approved June 21, 2010] and #082010-241 [approved October 28, 2010], principal investigator: B. F. C.) from June 2010 to April 2012. Patients were eligible for inclusion upon completion of a questionnaire on their photoprotective habits. Patients who did not complete the photoprotective habits questionnaire, or who had a diagnosis of another autoimmune disease other than CLE, were excluded. Additional information regarding patient demographics, Fitzpatrick skin

type, disease duration, CLE subtype, number of American College of Rheumatology SLE diagnostic criteria, presence or absence of SLE, number of oral lupus medications, hours spent in the sun per week, occupational setting (outdoors vs indoors), history of photosensitivity, and history of smoking were collected. Cutaneous and systemic disease activities

were assessed using the Cutaneous Lupus Activity and Severity Index⁸ and SLE Disease Activity Index,⁹ respectively. All patients were aged 18 years or older, and were enrolled after signing institutional review board–approved consent forms.

Photoprotective habits survey

The survey consisted of questions on frequency of use for each of 5 different photoprotective methods (eg, applying sunscreen; wearing hats, long-sleeved

shirts, and sunglasses; and staying under shade or umbrella). Frequency of use for each method was assessed using a 4-point Likert scale where 1 = rarely, 2 = sometimes, 3 = often, and 4 = always. Overall sun-protection habits (SPH) scores were calculated for each patient by taking the numeric average of these responses. The range of possible SPH scores was thus 1 to 4, where a higher score implied greater adherence to photoprotective practices. SPH scores have been previously validated in earlier studies on healthy individuals.^{10,11}

Statistical analysis

Patient characteristics were summarized using descriptive statistics with frequency counts and percentages. Comparisons between groups on frequencies of photoprotective method use were performed using Fisher exact tests for row × column contingency tables. Comparisons between average Likert scores for patient subgroups were performed using Kruskal-Wallis tests (multiple groups) or Mann-Whitney U tests (2 groups). *P* less than .05 was considered statistically significant.

RESULTS

CLE SPH scores

To assess general practices of photoprotection, we first focused on the overall SPH scores of our CLE population (N = 105). The average SPH score was 2.7 ± 0.7. We compared SPH scores in patients with

CAPSULE SUMMARY

- Sunscreen use in patients with cutaneous lupus erythematosus is deficient.
- Male patients with cutaneous lupus erythematosus, dark-skinned patients, and patients aged 31 to 50 years are least likely to practice photoprotection.
- Education regarding the importance of photoprotection should be greatly emphasized in these subgroups of patients with cutaneous lupus erythematosus.

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