Association of discoid lupus erythematosus with other clinical manifestations among patients with systemic lupus erythematosus

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Background: Cutaneous discoid lupus erythematosus (DLE) among patients with systemic lupus erythematosus (SLE) may be associated with less severe disease and with low frequency of nephritis and end-stage renal disease (ESRD).

Objective: We sought to investigate associations between confirmed DLE and other SLE manifestations, adjusting for confounders.

Methods: We identified patients with rheumatologist confirmation, according to 1997 American College of Rheumatology (ACR) SLE classification criteria, more than 2 visits, longer than 3 months of follow-up, and documented year of SLE diagnosis. DLE was confirmed by a dermatologist, supported by histopathology and images. SLE manifestations, medications, and serologies were collected. Multivariable-adjusted logistic regression analyses tested for associations between DLE and each of the ACR SLE criteria, and ESRD.

Results: A total of 1043 patients with SLE (117 with DLE and 926 without DLE) were included in the study. After multivariable adjustment, DLE in SLE was significantly associated with photosensitivity (odds ratio [OR] 1.63), leukopenia (OR 1.55), and anti-Smith antibodies (OR 2.41). DLE was significantly associated with reduced risks of arthritis (OR 0.49) and pleuritis (OR 0.56). We found no significant associations between DLE and nephritis or ESRD.

Limitations: Cross-sectional data collection with risk of data not captured from visits outside system was a limitation.

Conclusions: In our SLE cohort, DLE was confirmed by a dermatologist and we adjusted for possible confounding by medication use, in particular hydroxychloroquine. We found increased risks of photosensitivity, leukopenia, and anti-Smith antibodies and decreased risks of pleuritis and arthritis in patients with SLE and DLE. DLE was not related to anti-double-stranded DNA antibodies, lupus nephritis, or ESRD. These findings have implications for prognosis among patients with SLE. (J Am Acad Dermatol 2013;69:19-24.)

Key words: cutaneous lupus erythematosus; discoid lupus erythematosus; epidemiology; prognosis; systemic lupus erythematosus.

Systemic lupus erythematosus (SLE) is a heterogeneous autoimmune disease of unknown origin. It has been proposed that different clinical subsets of SLE exist, each associated with variable manifestations of the disease.[1-3] Several researchers have observed that chronic cutaneous lupus of the discoid variant (discoid lupus erythematosus [DLE]) occurs infrequently among patients

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Supported in part by National Institute of Arthritis and Musculoskeletal and Skin Diseases T32AR007530 and P60AR057782. The sponsors had no role in the design and conduct of the study; the collection, analysis, and interpretation of data; or the preparation, review, or approval of the manuscript.

Conflicts of interest: None declared.

Accepted for publication February 11, 2013.

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Published online March 29, 2013.

0190-9622/$36.00

http://dx.doi.org/10.1016/j.jaad.2013.02.010

with more severe organ involvement, in particular lupus nephritis and end-stage renal disease (ESRD) from nephritis, and seems to impart a better long-term prognosis.[4-9] DLE, a scarring, potentially disfiguring form of cutaneous lupus, is of particular interest to the clinician evaluating a patient with SLE, as it is one of the most outward clinical signs of disease and could provide immediate insight into the clinical prognosis of the patient at the bedside. Furthermore, differing SLE manifestations between patients with and without DLE would suggest different underlying pathophysiology of SLE subtypes and be the basis for future mechanistic study.

In this study, we evaluate the associations between dermatologist-confirmed DLE among patients with SLE and other common clinical and serologic SLE manifestations.

CAPSULE SUMMARY

- Prior studies suggest that discoid lupus erythematosus among patients with systemic lupus erythematosus is a marker for less severe disease, often offered as reassurance.
- We did *not* observe any associations (either positive or negative) with discoid lupus erythematosus and severe lupus manifestations (ie, renal or neurologic).
- These findings have important implications for counseling our patients with systemic lupus erythematosus and discoid lupus erythematosus regarding prognosis.

METHODS

Study population

The Brigham and Women's Hospital Lupus Center, Boston, MA, is staffed by 7 SLE expert rheumatologists and serves over 800 patients with SLE annually. The Brigham and Women's Hospital Lupus Registry contains data from 5030 individuals seen for potential SLE since the 1960s. Medical records have been reviewed by rheumatologists expert in the treatment of SLE for demographic data, date of first symptoms, date of diagnosis, all American College of Rheumatology (ACR) criteria, and serologies.

Inclusion criteria

From the registry, we identified patients who fulfilled the following criteria: (1) definite SLE diagnosis per rheumatologist/SLE expert case review; (2) 1997 ACR classification criteria for SLE[10]; (3) a documented year of SLE diagnosis; and (4) more than 2 visits and longer than 3 months of follow-up between January 1, 1970, and April, 30, 2011.

Data collection

We collected SLE manifestation, medication, and serologic data from review of electronic medical records. Electronic medical record data have been available since October 1, 1989. From the electronic medical records, we collected the following data for all subjects: age at SLE diagnosis, date of SLE diagnosis, self-reported race/ethnicity (white, African American, Asian, Hispanic, other), sex, duration (months) of follow-up at Brigham and Women's Hospital, number of lupus center visits, all ACR criteria for classification of SLE, DLE (ever), SLE-specific serologies (anti-Ro, anti-La, anti-Smith, anti-U1-ribonucleoprotein, anti-double-stranded DNA [dsDNA], antinuclear antibody initial pattern, anticardiolipin IgM and IgG, lupus anticoagulant), clinical laboratory findings (thrombocytopenia ever, defined as platelet count <100,000; anemia ever, defined as hematocrit <24%; and leukopenia ever, defined as white blood cell count <3000), and medications (use and number of prescriptions for the following medications: steroids [prednisone, prednisolone, methylprednisolone] [ever/never]; hydroxychloroquine [ever/never]; and immunosuppressives [azathioprine, cyclophosphamide, methotrexate, mycophenolate mofetil, systemic corticosteroids] [ever/never]). All patients had testing for anti-dsDNA antibodies in our study, performed by enzyme-linked immunosorbent assay in our hospital immunology laboratory.

These data were augmented by individual review of the medical records, in particular for those with dates of diagnoses before 1989 to: (1) recover missing data (including above demographic, serologic, and medication data); and (2) obtain details of diagnosis and treatment. The presence of DLE was confirmed by a board-certified dermatologist (J. F. M.) with review of dermatology/multispecialty notes supported by pathology and digital images, where applicable. DLE is a clinical diagnosis that is further supported by pathology findings. Criteria for confirmation of DLE included a specific diagnosis of "discoid" lupus from a specialist dermatologist AND support from 1 or more of the following: (1) a clinical description consistent with DLE (elements including follicular plugging, dyspigmentation, atrophy, scar formation, scarring-alopecia, telangiectasis, erythema, scale—*with emphasis on chronic scarring changes*); (2) histopathologic results consistent with DLE in the medical records; and/or (3) photographs in the medical records confirming DLE lesions. All aspects of this project were approved by the