Epidemiology and demographics of cutaneous lupus erythematosus in Colombia between 2015 and 2019

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SUMMARY

Cutaneous lupus erythematosus (CLE) is classified into three groups - acute, subacute, and chronic - based on clinical and histopathological characteristics. The risk of systemic manifestations varies among these groups. There are few studies on CLE epidemiology. For this reason, this paper aims to describe CLE prevalence and demographics in Colombia between 2015 and 2019. This descriptive, cross-sectional study used the international classification of diseases, tenth revision, for CLE subtypes, utilizing official data from the Colombian Ministry of Health. In people older than 19 years, 26,356 CLE cases were registered, yielding a prevalence of 76 cases per 100,000 population. CLE was more frequent in females, at a 5:1 ratio compared to males. The most common clinical presentation was discoid lupus erythematosus, in 45% of cases. The majority of cases occurred in people between 55 and 59 years old. This is the first study that describes CLE demographics in adults in Colombia. Findings regarding clinical subtypes and female predominance are consistent with those in the medical literature.

Key words: Colombia, Latin America, cutaneous lupus erythematosus, discoid lupus erythematosus, epidemiology.

■ INTRODUCTION

Cutaneous lupus erythematosus (CLE) refers to the cutaneous manifestations of lupus. According to clinical and histopathological characteristics of the cutaneous manifestations, CLE is classified as acute, subacute, or chronic. It is important to highlight that, depending on the CLE subtype, a percentage of patients evolves to systemic lupus erythematosus (SLE). While nearly every patient with acute CLE will develop SLE manifestations (1), literature data show that systemic manifestations are less frequent in subacute and chronic CLE, with 20-30% and 5-18%, respectively, evolving to SLE (2). Compared to other chronic diseases, CLE leads to higher deterioration in a patient's quality of life, probably due to the involvement of exposed areas, such as the face (3).
It is important to understand CLE epidemiology to monitor the disease and offer patients timely diagnosis and treatment. In the last 5 years, studies on CLE epidemiology have been conducted in South Africa, New Zealand, the United States, Brazil, and French Guyana. Those studies, however, have only analyzed small cohorts that are not representative of the whole country's population (4-8). This study aims to describe the prevalence and demographics of CLE in the Colombian population, based on data from the national registry of the Colombian Ministry of Health.

■ MATERIALS AND METHODS

This descriptive, cross-sectional study used data from the Integrated Information System for Social Protection (SISPRO), the information system of the Colombian Ministry of Health. The Colombian health system's coverage is one of the largest in Latin America, reaching 98.95% of a population of 50 million, according to an official statistic from October 2021 (9). SISPRO stores and provides standard healthcare system informa-

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tion. SISPRO data originate from the Individual Registry of Health Services Provision, a registry that doctors in Colombian must fill out with principal diagnosis codes defined by the international classification of diseases, tenth revision (ICD-10), for each inpatient or outpatient service. SISPRO also retrieves information from other sources (population census, health surveys, administrative entities) that allow corroboration of data validity and revision by health-regulation authorities in case of inconsistency.

The authors gathered SISPRO data from January 1, 2015, to December 31, 2019, for all of Colombia. They selected patients by principal diagnosis with the ICD-10 codes L930 for discoid lupus erythematosus (DLE), L931 for subacute cutaneous lupus erythematosus (SCLE), and L932 for other local lupus erythematosus. The code for the systemic form of lupus was excluded. Information on population size, sex, age, and distribution by department (state) came from statistical projections of the National Administrative Department of Statistics (DANE). The study calculated the prevalence of each diagnosis for the total population and by age group, sex, and department. The calculation used for the numerator was the total number of cases reported in SISPRO, and for the denominator the corresponding demographic projection of the DANE. The study presents prevalence values per 100,000 population. However, the prevalence of acute CLE couldn't be established due to the lack of a specific ICD-10 code for this diagnosis.

■ RESULTS

The study identified 26,356 CLE cases in Colombia from January 1, 2015, to December 31, 2019. 19,906 patients were aged over 19 years for a prevalence of 76 cases per 100,000 population. Of them, 49% were DLE, 31% were other local lupus erythematosus, and 20% were SCLE. By sex, 16,908 cases occurred in females, with a female:male ratio of 6:1. By age group, CLE prevalence was higher in people aged between 55 and 59, with 107 cases per 100,000 population. Distribution by depart-

ments showed great variability in CLE prevalence, as low as 9 cases per 100,000 population in Guainía, and as high as 84 cases per 100,000 in Antioquia (Figure 1). Regarding CLE subtypes, DLE showed the highest prevalence, with 37 cases per 100,000 population. Analysis of sex distribution by subtype showed female predominance for all CLE subtypes (Table I). In the age group 55-59, DLE prevalence was 53 cases per 100,000 population, and SCLE prevalence was 23 cases per 100,000 population (Figure 2). By geographic location, the Department of Antioquia showed the highest prevalence for DLE (41 cases per 100,000 population) and SCLE (20 cases per 100,000 population). These findings are consistent with those for CLE in general. The other departments with the highest numbers of DLE cases were Valle del Cauca, San Andrés and Providencia, and Bogotá D.C., with 33, 31, and 30 cases per 100,000 population, respectively. For SCLE, Caldas had the second-highest number of cases (surpassed only by Antioquia), with 14 per 100,000 population. Caldas had also the highest prevalence for other local
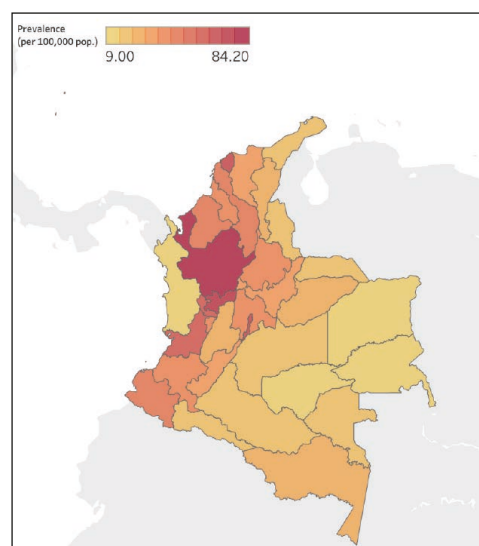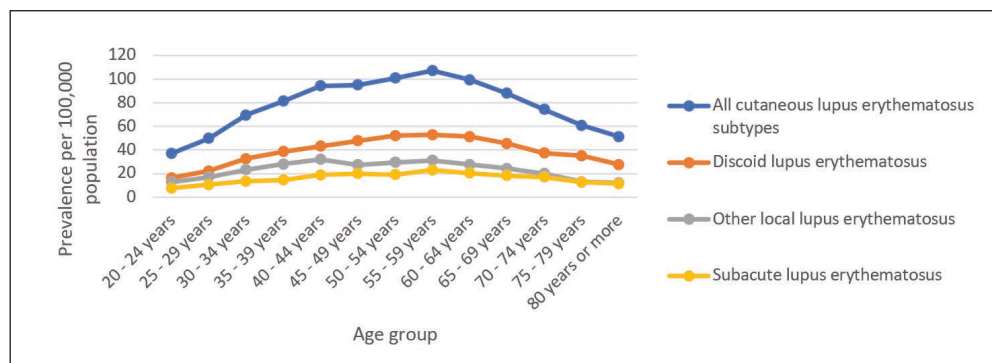

Figure 1 - Geographic distribution of cutaneous lupus erythematosus cases by department between 2015 and 2019 in the Colombian population. The study calculated prevalence using the Colombian population average from 2015 to 2019 per 100,000 population.

Table I - Prevalence of cutaneous lupus erythematosus and its subtypes in people aged more than 19 years to the international classification of diseases, tenth revision codes, by sex, between 2015 and 2019.

Diagnosis	General Prevalence	Prevalence in females	Prevalence in males	Female: male ratio
Cutaneous lupus erythematosus	76	117	21	6:1
Discoid lupus erythematosus	37	54	12	5:1
Subacute cutaneous lupus erythematosus	15	24	4	6:1
Other local lupus erythematosus	24	39	5	8:1

Calculated prevalence per 100,000 population.

Figure 2 - Distribution of cutaneous lupus erythematosus by age and subtype prevalence between 2015 and 2019.

lupus erythematosus, with 31 cases per 100,000 population.

■ DISCUSSION

Epidemiologic studies determine the burden of a disease and provide tools for better diagnostic and therapeutic approaches. CLE produces high morbidity due to the involvement of exposed areas that potentially cause scars and deforming lesions. Also, systemic autoimmunity may present in variable degrees in the different CLE subtypes and may trigger complications, including death. This study found a CLE prevalence of 76 cases per 100,000 population in people over 19, with DLE being the most frequent subtype. There was a female predominance in all CLE types. In regards to age, the highest prevalence presented at ages 55-59. Compared to SLE epidemiology, both showed a female predominance; however, the ages of higher prevalence were a decade later in CLE compared with SLE (10). Additionally, our results call at-

tention to the highly variable prevalence among the regions of Colombia with a difference of almost ten-fold between the lowest and the highest prevalence.

A longitudinal cohort study in Denmark assessed CLE epidemiology over an 8-year period using databases of a health system with 100% population coverage (11). The CLE incident rate was highest in ages 55-64 for males, and 64-75 for females. A female predominance was also found with a 4:1 ratio, similar to our results. However, CLE prevalence was considerably lower in Denmark, at only 2.74 per 100,000 population. Similar to the Danish study, a population-based cohort study was done in Sweden, including the nation's entire population and utilizing the national registry of patients and ICD-10 codes. It also found a higher frequency of DLE and female predominance, with a female:male ratio of 3:1. Average onset age was 59 (12). A study in New Zealand assessed CLE prevalence and variation among European, Maori, and Indian/Asian ethnicities. It found that the

Maoris had a higher prevalence, with 42 cases per 100,000 population and a higher relative risk of the DLE subtype (5), similar to our findings in which DLE is the most common subtype.

A study in South Africa assessed specific and non-specific cutaneous manifestations in a cohort of patients with SLE (4). The study included 298 patients, of which 93% were black females and 76% had SLE-specific cutaneous lesions. The most frequent subtype was DLE, a finding consistent with this study.

Interestingly, an epidemiological retrospective study in Olmsted County, Minnesota, United States compared CLE and SLE, finding a prevalence of 70.4 and 30.5 per 100,000 population, respectively (6). The prevalence of CLE was similar to our study and even though the prevalence of SLE wasn't addressed in our study, a previous one found a prevalence of 91.9 cases per 100,000 population in Colombia (10), which is greater than CLE's prevalence and significantly higher than SLE prevalence found in Minnesota. Also, an observational study was conducted in 1992 in the U.S. on 67 patients who did not fulfill the American College of Rheumatology criteria for SLE but who had lesions compatible with CLE on histopathological examination (13). Of those patients, 85% had DLE. Though the percentage is much higher than the one found in the current study, there is consistency in DLE being the most frequent subtype. The U.S. study also found female predominance (81% of patients).

In South America, a retrospective study was conducted in French Guyana in patients of African descent with pure CLE, defined as cases with lesions of subacute or chronic CLE as the first manifestation. As with this Colombian study, it found female predominance, and DLE was the most common presentation. However, the French Guyana study only included 51 patients.

Results of these previously mentioned studies, as well as this one, give strong evidence that CLE presents in higher prevalence in females, just as SLE does. Also, all studies assessing CLE subtypes found DLE as the most common. This aligns with the findings in the Colombian study. Despite a limited number of epidemiologic studies and the fact that several previous studies lacked a statistically valid population coverage, it is evident that CLE prevalence varies significantly by geography and age group. It is important to notice that the CLE prevalence found in Colombia is higher compared with previous reports of different countries. Also, the prevalence in Colombians was similar to a study done in the United States and both of them were higher than the prevalence found in European studies.

An exclusive selection of cases with some type of CLE in the principal diagnosis can be seen as a limitation of this study. This does not take into account the number of cases with CLE as a secondary diagnosis, leading to undercounting. Similarly, the ICD-10 does not include a specific code for acute forms of CLE, which may also limit the efficacy of the registry. Patients with CLE may be registered in the database with other local lupus erythematosus or, given the association between acute forms of CLE and SLE, with other codes corresponding to SLE. Finally, the nature of the information limits the calculation of CLE incidence and the length/severity of the disease.

This is the first study to assess CLE prevalence in Colombia, and it represents an effort to build a better knowledge of CLE epidemiology. It may also provide a reference for other Latin American countries.

■ CONCLUSIONS

The authors analyzed demographic and epidemiologic information on CLE in Colombia using official data from the Colombian Ministry of Health. The study found a CLE prevalence higher than that found in other reports in the literature, but it was consistent in several aspects, notably the most frequent CLE subtype and the female predominance.

Contributions

All authors contributed equally.

Conflict of interest

the authors declare no potential conflict of interest.

Availability of data and materials

data and materials are available by the authors.

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