

Characteristics of lupus erythematosus in dermatology: Analysis of a series of 72 hospital cases in Abidjan, Côte d'Ivoire

Kourouma Sarah Hamdan^{1,2}, Allou Ange-Sylvain^{1,2}, Gbandama Koffi Pacome^{1,2}, Coulibaly Aziz Souleymane², Amani Kaunan Wilfried², Kouassi Yao Isidore^{1,2}, Kouassi Kouamé Alexandre^{1,2}, Ahogo Kouadio Celestin^{1,2}, Kaloga Mamadou^{1,2}, Gbery Ildevert Patrice^{1,2}, Ecra Elidje Joseph^{1,2}, Sangare Abdoulaye^{1,2}

¹Dermatology Department, Médical Sciences Training and Research Unit, Felix Houphouët Boigny University, Côte d'Ivoire,

²Dermatology Department, Treichville University Hospital, Abidjan, Côte d'Ivoire

Corresponding author: Ange-Sylvain Allou, MD, E-mail: alansy06@yahoo.fr

ABSTRACT

Background: Several African studies have focused on the clinical features of lupus in black skin, yet the immunological, biological, and imaging profile of the disease remains poorly described in Côte d'Ivoire. **Objective:** The aim of this study was to investigate the epidemiological, clinical, paraclinical and evolutionary aspects of lupus patients followed at the Dermatology Department of a University Hospital. **Methods:** This was a cross-sectional, retrospective study of patients received at the dermatology and venereology department of a university hospital over a six-year period. The diagnosis was based on the European League Against Rheumatism (EULAR)/American College of Rheumatology (ACR) classification criteria. **Results:** We included 72 lupus patients. The sex ratio was 9/1 (female-to-male) and the mean age was 37.9 years. Mucocutaneous manifestations were noted in 66% of the patients and were dominated by discoid lupus (88.9%). Rheumatological involvement was the most common extra-dermatological manifestation (21.8%). The main antibodies found were AAN (73.19%), anti-DNA_n (45.8%), and anti-Sm Ac (27.8%). The main treatments used were hydroxychloroquine (98%), corticosteroids (37.5%), immunosuppressants (47.2%), and sun protection. Progression was favorable in 37.5%, and 51.2% of the patients were lost to follow-up. **Conclusion:** Lupus erythematosus is a rare pathology at the dermatology department, with a female predominance. Its main treatment is hydroxychloroquine, and many patients are lost to follow-up.

Key words: Lupus erythematosus, epidemiology, clinical aspect, biology, sub-Saharan Africa

INTRODUCTION

Lupus erythematosus (LE) is a non-organ-specific autoimmune disease belonging to the connectivitis group. It is a protean, chronic, and spontaneously severe systemic disease characterized by the presence of autoantibodies directed against nuclear antigens, the deposition of immune complexes and chronic inflammation in target organs such as the skin, joints, and kidneys [1]. It is a rare condition, preferentially affecting

young women of childbearing age. The black race is said to be more predisposed to developing this condition [2].

Several African studies have examined the clinical features of lupus in black skin, yet the immunological and biological profile of the disease remains poorly described in sub-Saharan Africa.

The aim of our study was to update our knowledge of lupus erythematosus in dermatology in order to improve

How to cite this article: Kourouma Sarah H, A-S Allou, Koffi Gbandama P, Coulibaly Aziz S, Amani KW, Kouassi YI, Kouassi KA, Ahogo Kouadio C, Kaloga M, Gbery IP, Ecra EJ, Sangare A. Characteristics of lupus erythematosus in dermatology: Analysis of a series of 72 hospital cases in Abidjan, Côte d'Ivoire. *Our Dermatol Online*. 2025;16(1):37-42.

Submission: 22.11.2024; **Acceptance:** 20.12.2024

DOI: 10.7241/ourd.20251.5



Figure 1: (a) Discoid plaques of the face in a 32-year-old adult woman. (b) Butterfly rash in a 34-year-old woman. Figure 1c: (c) Oral lip erosions in a 35-year-old woman. (d) Cicatricial alopecia in a 36-year-old woman.

its management and to study the epidemiological, clinical, paraclinical, and therapeutic aspects of lupus patients followed at the dermatology department of a university hospital.

METHODS

This was a cross-sectional, retrospective study of patients received at the dermatology and venereology department of a university hospital over a six-year period.

We included patients of all ages and sexes with LE as described above according to the European League Against Rheumatism (EULAR)/American College of Rheumatology (ACR) classification criteria [3]. Pregnant women and patients with incomplete paraclinical examinations and those with lupus in the context of mixed connectivitis were excluded from the study.

Sampling was consecutive and exhaustive.

The data required for the study was obtained from the patients' files. They were collected on a survey form. Quantitative variables were described by means and standard deviations. Qualitative variables were described in terms of numbers (*n*) and proportions (%). 95% confidence intervals (CI) were calculated. Graphs were edited using Office Excel 2013 as well as CSPRO, version 7.3, software, and tables using Office Word 2013, then all exported to SPSS 26 software for statistical analysis.

Ethics Statement

Ethical approval was received from the institutional review boards. Patient consent was not required for the study, as data collection was retrospective. However, the

Table 1: Sociodemographic data (*n*=72)

	Number (n)	Percentage (%)
Sex		
Female	65	90.3
Male	7	9.7
Age (yrs.)		
10–20	3	4.2
20–30	15	20.8
30–40	24	33.3
40–50	13	18.1
≥ 50	17	23.6
Occupation		
Students and unemployed	25	34.7
Housewife	21	29.1
Liberal and independent professions	13	18.1
Sector employee private	7	9.7
Public sector employee	6	8.3
Marital status		
Married	40	55.6
Bachelor	25	34.7
Widower	7	9.7
Area of residence		
Urban area	68	94
Rural area	4	6
Level instruction		
Uneducated	12	16.7
Level primary	10	13.9
Level secondary	22	30.6
Level superior	28	38.9
Background medical and lifestyle		
Arterial hypertension	2	2.8
Diabetes	1	1.4
Epigastralgia	4	5.6
HIV infection	3	4.2
Smoking	2	2.28
Alcoholic drinks	5	6.94
Exposure to industry products agricultural	1	1.4
Sun exposure	72	100

photos used in the study were presented after receiving signed consent from the patients concerned for their scientific use.

RESULTS

Sociodemographic and Clinical Characteristics

Eighty-six (86) cases of lupus erythematosus were diagnosed out of 68,780 patients, representing a hospital prevalence of 0.13%. We were able to include 72 patients in our study. The socio-demographic characteristics of this population, presented in Table 1, reveal a clear female predominance (90.3%) and an average age of 37.9 years, with extremes of 13 and 69 years. The 30-39 age group was the most represented (33.3%). Pupils/students and the unemployed were most concerned (34.7%), followed by housewives (29.1%). Patients living in urban areas (94%) and those with higher education (38.9%) were the most represented. All patients had frequent exposure to the sun. There were 3 HIV-infected patients (4.2%) and one case of familial lupus.

Clinical characteristics

Table 2 shows the clinical characteristics of our population. Cutaneous lupus accounted for 65.9% and systemic lupus for 30.5%. Chronic cutaneous lupus of the discoid type was the most common (90%), followed by acute (6%) and subacute (4%) lupus erythematosus.

Discoid plaques (Fig. 1a) accounted for 88.9% of cutaneous manifestations, followed by butterfly-wing erythema (Fig. 1b) (45.8%). They were mostly located in the cephalic region (72.2%), particularly on the face (31.9%). We also found hyperpigmented plaques close to discoid plaques in all patients. Twenty-five percent (25%) of our patients had mucosal involvement, especially in the mouth (23.6%) (Fig. 1c).

Of the 72 lupus patients, 32 (44.4%) were affected on the skin, including 27 cases of alopecia (84.4%), mainly of the diffuse type (65.6%) (Fig. 1d).

Rheumatological involvement was the primary extra-dermatological manifestation (21.8%), mainly polyarthralgia. Pleuropulmonary manifestations were present in 14 patients (19.44%), with cough, dyspnea revealing pleurisy and interstitial pneumopathy. We noted 7 cases of neurological involvement (9.7%), with headaches and convulsions. Weight loss was reported in 34.72% of patients.

Paraclinical characteristics

Skin biopsy was performed on 39 patients (54.2% completion rate), of whom 35 (48.6%) had abnormalities of the acute, chronic, discoid and systemic type.

Table 2: Clinical features.

	Number (n)	Percentage (%)
Lesions cutaneous		
Erythema in butterfly wing	33	45.8
Discoidal plates	64	88.9
Facial edema	5	6.9
Fixed urticariform lesions	8	11.1
Ulcerations or erosions buccal	17	23.6
Locations of lesions cutaneous		
Faces	46	63.9
Ears	11	15.3
Leather hairy	18	25.0
Thorax	8	11.1
Superior members	5	6.9
Inferior members	7	9.7
Mucosal lesions		
Buccal	17	23.6
Genital	1	1.4
Lesions of the appendages		
Onycholysis	2	2.8
Trachyonychia	3	4.2
Alopecia	27	37.5
Extracutaneous manifestations		
Renal	38	52.8
Rheumatological	25	34.7
Pleuropulmonary	14	19.4
Cardiac	12	16.7
Neurological	7	9.7
Digestive	3	4.2

Table 3: Therapeutic modalities (n=72)

Treatment	Number (n)	Percentage (%)
Hydroxychloroquine	71	98
Prednisone	27	37.5
Cyclophosphamide	16	22.2
Methotrexate	11	15.8
Mycophenolate mofetil	7	9.7
Dermocorticoids	56	77.8
Calcineurin inhibitors	11	15.3
Clothing protection	72	100
Topical photoprotection	72	100

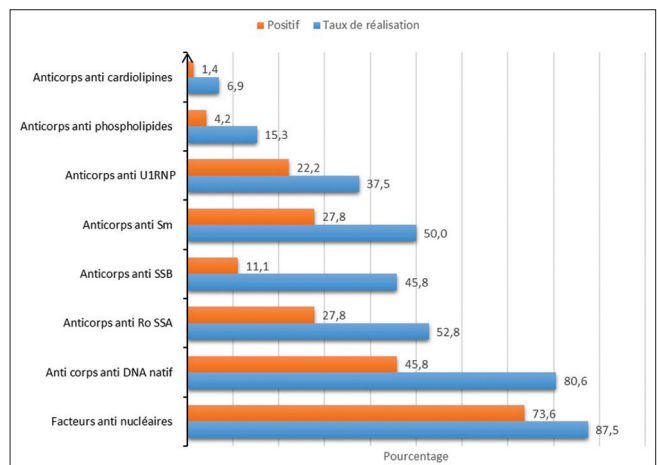


Figure 2: Distribution of patients by antibody type.

In our series, there were 44.4% cases of inflammatory anemia and 38.9% of lymphopenia. The sedimentation rate (SV) was accelerated at 56%.

Immunological data are summarized in Fig. 2, with an average antibody realization rate of over 80%. These examinations revealed the presence of anti-nuclear antibodies (84.1%), anti-native DNA (56.9%), anti-Sm (55.6%), anti-Ro-SSA (52.6%), and antiphospholipids (27.3%).

On imaging, abnormalities were noted on ECG (53.8%) and chest X-ray (21.5%), with cardiomegaly, interstitial syndrome, pleurisy and conduction disorders. High 24-hour proteinuria was reported in 52.4% of patients.

Therapeutic modalities and progression

These are summarized in Table 3. In our series, 98% of patients were treated with hydroxychloroquine, 47.2% with immunosuppressants and 37.5% with corticoids. Local treatment was based on dermocorticoids (77.8%) and calcineurin inhibitors. Protective clothing and sunscreen were recommended for all patients.

Progression under treatment after 6 months was favorable in 37.5% of cases. Patients were lost to follow-up in 51.2% of cases.

DISCUSSION

Sociodemographic characteristics

We identified 86 patients with lupus, representing a hospital prevalence of 0.13%.

LE is a ubiquitous disease affecting all populations and races. It is frequently found in Asian, African American, Hispanic American, and Caribbean populations, compared with Caucasians [2,4,5].

This study of lupus in West Africa highlighted specific characteristics. It is an uncommon disease in the region, with hospital frequencies ranging from 0.02% to 1.9% of cases yearly. The wide disparity in frequencies between countries generally sharing similar socio-demographic and economic contexts could be explained by the large number of under-diagnosed cases, often linked to a lack of awareness of the disease by non-specialist practitioners, sometimes due to clinical complexity or geographical and financial inaccessibility of paraclinical examinations complementary to diagnosis [4,6-14].

The predominance of women in our study was in line with the literature (80%). Lupus disproportionately affects women, with incidence rates 2 to 9 times higher in women than in matched male populations. Women's susceptibility to lupus is the result of a complex interaction between several conditions: a high-risk genetic terrain linked to the double X chromosome carrying genes capable of causing dysfunction of the autoimmune system; a high-risk immunological terrain in which the expression of immune regulation is reduced, while immune reactivity is increased [15]; and finally, the impact of endocrine factors through the role of female sex hormones (estrogen) on the immune response. This influence of hormonal factors is reinforced by the fact that these diseases occur more frequently in women during the genital period, and by the sometimes-aggravating role of pregnancy and hormonal contraception [16].

The average age of our study population was 37.9 years. This was in line with data from various studies in sub-Saharan Africa. Usually, the literature describes systemic diseases in young adults, and more specifically in young women at the time of genital activity [2,4,5].

Clinical characteristics

Regarding symptoms, facial erythema dominated the reasons for consultation, accounting for 84.7% of all cases. These results bear witness to the symptomatology classically described in the literature for lupus erythematosus. Practically the same signs were found in studies carried out at dermatology departments by Sangaré et al. in Côte d'Ivoire [12] and Lèye in Senegal [14].

In our study, renal involvement (52.4%) was the second most frequent extradermatological clinical manifestation, after rheumatological involvement (37.5%). In non-dermatological studies, symptoms were dominated by rheumatological disorders such as polyarthralgia. In Louzir's study in Tunisia [17], rheumatological involvement was the most frequent clinical manifestation (90%), whereas in Saudi Arabia, the most common manifestations of the disease were hematological abnormalities (82.7%), followed by joint involvement (80.4%), with mucocutaneous involvement at the third place (64.3%).

Paraclinical characteristics

Immunologically, we noted a high rate of anti-nuclear factors (73.6%) in our series. We also determined that

most autoantibodies were found. This result was in perfect agreement with the literature, in which they were detected in 90% to 100% of LE cases. Indeed, antinuclear autoantibodies were positive in most cases, in 90% of cases in African studies: 92% in Tunisia [17], 93% in Togo [9], and 97.8% in Senegal [18].

In our study, treatment was based on hydroxychloroquine in 98% of the cases, a value close to that obtained by Arfaj [19] at 98.10% of cases. In Tunisia [17], synthetic antimalarials (SMAs) were used in 48% of cases. The use of cyclophosphamide-type immunosuppressants in our study was found in 22.2% of cases, compared with 26.2% in Senegal [18], and 14% in Tunisia [17]. On the other hand, the use of methotrexate in our study was 9.7%, a higher value than that obtained in the Tunisian series, which was 3% [17]. The use of mycophenolate mofetil was 9.7% in our study, a value superimposed on that of Konan in Côte d'Ivoire, which was 8.9% [20].

Therapeutic modalities and progression

As local treatment, the application of sun cream was the most widely used, followed by topical dermatocorticoids, and complementary treatment and/or a hygienic-dietary regimen were recommended, if necessary, which was also found in Tunisia [17]. UV light is the main recognized risk factor for lupus erythematosus. UV rays are capable of inducing skin lesions, as well as progressive flare-ups of the disease, and certain signs are highly photosensitive.

Sun avoidance by wearing protective clothing and the use of a highly protective broad-spectrum sunscreen have a beneficial effect in the management of the lupus subject as demonstrated in this randomized clinical trial [21].

CONCLUSION

Our study reveals that LE remains a rare condition in dermatology, with a clear predominance of young women. Clinically, cutaneous manifestations were dominated by photosensitivity, discoid plaques, alopecia and oral erosions. Paraclinical findings included inflammatory anemia and anti-nuclear antibodies. The most commonly used treatment for skin lesions was hydroxychloroquine and sun protection. Most patients were lost to follow-up treatment, hence the need for therapeutic education to improve patient compliance in Abidjan dermatology.

Statement of Human and Animal Rights

All the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the 2008 revision of the Declaration of Helsinki of 1975.

Statement of Informed Consent

Informed consent for participation in this study was obtained from all patients.

REFERENCES

- Hoi A, Igel T, Mok CC, Arnaud L. Systemic lupus erythematosus. *Lancet*. 2024;403:2326–38.
- Barber MRW, Drenkard C, Falasinnu T, Hoi A, Mak A, Kow NY, et al. Global epidemiology of systemic lupus erythematosus. *Nat Rev Rheumatol*. 2021;17:515–32.
- Aringer M, Costenbader K, Daikh D, Brinks R, Mosca M, Ramsey-Goldman R, et al. 2019 European League Against Rheumatism/American College of Rheumatology classification criteria for systemic lupus erythematosus. *Ann Rheum Dis*. 2019;78:1151–9.
- Fatoye F, Gebrye T, Mbada C. Global and regional prevalence and incidence of systemic lupus erythematosus in low-and-middle income countries: a systematic review and meta-analysis. *Rheumatol Int*. 2022;42:2097–107.
- Rees F, Doherty M, Grainge MJ, Lanyon P, Zhang W. The worldwide incidence and prevalence of systemic lupus erythematosus: a systematic review of epidemiological studies. *Rheumatology*. 2017;56:1945–61.
- Sangaré A, Ebra EJ, Kourouma SH, Kaloga M, Gbery IP, Kacou DE, et al. Dermatological Manifestations of Connective Tissue Diseases in Black People. *J Clin Exp Dermatol Res*. 2015;06:1-3.
- Essouma M, Nkeck JR, Endomba FT, Bigna JJ, Singwe-Ngandeu M, Hachulla E. Epidemiological data on systemic lupus erythematosus in native sub-Saharan Africans. *Data Brief*. 2019;28:104909.
- Missounga L, Ba JI, Nseng IR, Carine MI, Malekou D, Mouendou EG, et al. La connectivité mixte: prévalence et caractéristiques cliniques chez le noir africain, étude de 7 cas au Gabon et revue de la littérature. *Pan Afr Med J*. 2017;27:162.
- Tecloussou JN, Saka B, Akakpo SA, Matakloe H, Mouhari-Toure A, Kombate K, et al. Les connectivites en milieu hospitalier à Lomé: étude rétrospective de 231 cas. *Pan Afr Med J*. 2018;30:176.
- Zavier Z, Michee A, Anthelme A, Felix A, Marcelle G, Martin A. Lupus érythémateux systémique : Particularités au Bénin et en Afrique de l'Ouest. *Tunisie Med*. 2014;92:707–10.
- Mijiyawa M, Amanga K, Oniankitan OI, Pitché P, Tchangaï-Walla K. Les connectivites en consultation hospitalière à Lomé (Togo). *Rev Méd Interne*. 1999;20:13–7.
- Daboiko JC, Gueret M, Eti E, Ouali B, Ouattara B, Gbane M, et al. Profil clinique et évolutif du lupus érythémateux systémique à Abidjan : à propos de 49 cas colligés au CHU de Cocody. *Méd Afr Noire*. 2004;51:143–6.
- Gbané-Koné M, Ouattara B, Mermoz Djaha KJ, Megne E, Nawé Ngandeu MA, Coulibaly AK, et al. Autoantibodies in Systemic Lupus Erythematosus, on Black African Subject, in Abidjan. *Open J Rheumatol Autoim Dis*. 2015;5:28–35.
- Léye Y, Ndiaye N, Diack N, Ndour M, Fall B, Ka W, et al. Aspects épidémiologiques et diagnostiques des connectivites au service de Médecine Interne du CHUN de Pikine : analyse de 287 observations. *Rev Afr Méd Inter*. 2017;4:22–5.
- Perdriger A, Werner-Leyval S, Rollot-Elamrani K. Génétique du

- lupus érythémateux systémique. *Rev Rhumat.* 2003;70:210–6.
16. Petri M. Sex hormones and systemic lupus erythematosus. *Lupus.* 2008;17:412–5.
 17. Louzir B, Othmani S, Ben Abdelhafidh N. Le lupus érythémateux systémique en Tunisie. Étude multicentrique nationale. À propos de 295 observations. *Rev Méd Inter.* 2003;24:768–74.
 18. Fall S, Pouye A, Ndiaye FS, Ndongo S, Leye Y, Dioum A, et al. Présentation initiale du lupus érythémateux systémique au Sénégal. *Méd Afr Noire.* 2011;5803:156–60.
 19. Al Arfaj A, Khalil N. Clinical and immunological manifestations in 624 SLE patients in Saudi Arabia. *Lupus.* 2009;18:465–73.
 20. Michel K, Yves B, Venceslas AU, Darius B, Rokia O, Toussaint T. [Characteristics of autoimmune diseases in the internal medicine department of the teaching hospital of Treichville in Abidjan: Analysis of a Series of 45 Patients]. *Rev Int Sc Méd Abj-RISM.* 2019;21:306–11.
 21. Kuhn A, Gensch K, Haust M, Meuth AM, Boyer F, Dupuy P, et al. Photoprotective effects of a broad-spectrum sunscreen in ultraviolet-induced cutaneous lupus erythematosus: A randomized, vehicle-controlled, double-blind study. *J Am Acad Dermatol.* 2011;64:37–48.

Copyright by Hamdan Kourouma Sarah, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.
Source of Support: This article has no funding source.
Conflict of Interest: The authors have no conflict of interest to declare.