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Systemic Lupus Erythematosus: Particularities in Chad

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Abstract

Objectives: To describe the epidemiological, clinical and therapeutic profile of systemic lupus erythematosus (SLE) at the CHU-RN of N'Djaména in order to define its particularities. **Patients and Methods:** This was a descriptive cross-sectional study of patients seen in the internal medicine and gastroenterology department of the Centre Hospitalier Universitaire la Référence Nationale de N'Djaména during the period January 2021 to December 2022 (2 years). All patients aged 16 and over meeting at least the 4 ACR (1997) criteria were included. Demographic, clinical and therapeutic data were analyzed. **Results:** During the study period, 1094 patients were admitted to internal medicine consultations, among whom 14 cases of lupus were diagnosed, representing a prevalence of 1.27%. The sex ratio was 3.6%. All patients were black, with a mean age of 30.32 years [16 - 68]. The mean time to diagnosis was 22.32 months [1 - 120 months]. All patients had general manifestations (100%), followed by joint manifestations (51.1%). Renal, digestive and cutaneous-mucosal manifestations were present in 42.9% each. All patients had undergone immunological testing. **Conclusion:** SLE is unusual in Chad in terms of its clinical polymorphism, the frequency of anti-DNA natives, the low frequency of anti-phospholipids and, finally, the very high efficacy of synthetic antimalarials and corticoids.

Keywords

Systemic Lupus Erythematosus, CHU-RN, N'Djaména

1. Introduction

Systemic Lupus Erythematosus (SLE) is an inflammatory disease of unknown

cause, characterized biologically by the production of multiple autoantibodies, the most characteristic of which are directed against certain components of the nucleus, such as native deoxyribonucleic acid (DNA) and nucleosomes [1].

Many advances have been made in treatment, making lupus a benign disease whose prognosis is, however, clouded by cerebral damage and, above all, the severity of renal impairment [2].

Worldwide, the prevalence of SLE varies from 4 to 178 per 100,000 inhabitants and its incidence from 0.3 to 23.7 per 100,000 per year [3]. While prevalence in the West ranges from 15 to 60/100,000 inhabitants/year [4]-[6], the number of cases reported in African series remains low: 49 cases in 15 years in Côte d'Ivoire (2004) [7], 16 cases in 13 years in Togo (2008) [8], 30 cases in 10 years in Senegal (1998) [9]. In the West African country of Chad, no prevalence or hospital frequency studies have been carried out on lupus.

The present study focuses on the epidemiological, clinical, therapeutic and prognostic features of Lupus in hospitals in N'Djaména.

2. Patients and Methods

This was a descriptive cross-sectional study conducted over a two-year period (January 2021 to December 2022) at the national referral university hospital. All patients diagnosed with LES according to the EULAR/ACR 2019 Classification Criteria (ACR) or the ACR 1982 Classification Criteria, updated in 1997, were included. Patients aged 16 and over and meeting at least the 4 ACR criteria (1997); SLE increasingly occurs in young women during ovarian activity. Patients suffering from another connective tissue disease and who did not consent were not included in this study.

Diagnostic criteria for systemic lupus erythematosus to the American College of Rheumatology, 1971.

1) Butterfly wing malar rash
2) Discoid lupus rash
3) Photosensitivity
4) Oral or nasopharyngeal ulcerations
5) Non-erosive polyarthritis
6) Pleurisy or pericarditis
7) Renal impairment (proteinuria > 0.5 g/24h and/or urinary cylinders)
8) Neurological impairment (convulsions or psychosis)
9) Hematological abnormalities (hemolytic anemia or leukopenia < 4000/mm^3 or lymphopenia < 4500/mm^3 or thrombocytopenia < 100,000/mm^3)
10) Immunological disorders (presence of LE cells or anti-native DNA antibodies or anti-Smith antibodies or false syphilitic serology)
11) Anti-nuclear antibodies at abnormal levels (in the absence of inducing drugs)

The concomitant or successive occurrence of 4 criteria confirms the diagnosis. Demographic, clinical and therapeutic data were collected using a pre-established

survey form. We analyzed our data using Epi-Info 6.0 software. Results were tabulated. Variables were expressed as means, standard deviations and variances, and qualitative results as percentages.

3. Results

3.1. Socio-Economic Characteristics

During the study period, 1094 patients were admitted to internal medicine consultations. Among them, 14 cases of lupus have been diagnosed, representing a hospital prevalence of 1.27%. The sex ratio is 3.6 in favor of women.

All patients were black. The mean age of the patients was 30.32 years [16 - 68 years old].

3.2. Clinical Features

The mean time to diagnosis was 22.32 [1 - 120] months. All patients had general manifestations (fever, alteration of general condition, anorexia, weight loss). Articular manifestations were predominant in 51.1%. Joint involvement was dominated by bilateral, symmetrical, non-erosive polyarthritis.

Mucocutaneous manifestations were present in 42.9% of cases. The mucocutaneous signs were alopecia and photosensitivity. Renal and digestive manifestations were present in 42.9% respectively. Neuropsychiatric and cardiovascular manifestations were present in 14% and 7% respectively (Table 1).

Table 1. Clinical features of lupus in Chad.

Clinical features	%
General symptoms	100
Joint manifestations	51.1
Mucocutaneous manifestations	42.9
Digestive disorders	42.9
Renal manifestations	42.9
Neuropsychiatric manifestations	14
Cardiovascular manifestations	7

3.3. Immunological Data

All patients underwent immunological testing. DNA natives were positive in all 14 patients, anti-SM in 9 and anti-SS-B antibodies in 6.

Anti-phospholipids and lupus anticoagulants were positive in one patient each (Table 2).

Table 2. Immunological data.

Antibodies tested	%
Antinuclear factors present	50
Anti-DNA Natives present	100

Continued

Anti-SM present	64.3
Anti-SSA present	42.9
Anti-SSA present	0
Anti-Phospholipids present	7.1
Lupus anticoagulants	7.1

3.4. Therapeutic and Evolutionary Data

Treatment consisted of general corticosteroid therapy (100%) combined with synthetic antimalarials (78.6%) and methotrexate (28.6%). Patients with lupus nephropathy (proteinuria) were referred and managed in nephrology.

Progression after 6 months of treatment was satisfactory. Six (6) patients developed complications: 14% of ophthalmological complications, 21% of urinary tract infections, 7% of gynaecological, 7% deaths and 7% patients were lost to follow-up.

4. Discussion

Lupus erythematosus is a protean, spontaneously severe systemic disease characterized by the production of antinuclear antibodies directed in particular against native DNA [10].

It is an underdiagnosed disease in Chad, with a hospital prevalence of 1.04%. Our data are similar to those of Cavedraogo *et al.* in Burkina Faso and Adelovo *et al.* in Nigeria, who respectively obtained a hospital frequency ranging from 1.5 to 10 cases per year [11] [12].

The long delay in diagnosing the disease (22.32 months) could be explained by a lack of awareness of the pathology, and the polymorphous presentation of these conditions could sometimes delay referral to a specialist service.

Daou *et al.* in Niger [13] and Hounssounou *et al.* in Côte d'Ivoire [14] found a delay of 43.5 months and 26.4 months respectively.

Indeed, due to clinical polymorphism and the preponderance of general signs, notably fever, most patients are treated as malaria or typhoid fever by medical practitioners [15] [16].

The mean age of our patients was 30.32 years. Our results are similar to those reported by Bouatba *et al.* in Morocco [17], Diallo *et al.* in Senegal [18] and Yahia *et al.* in Tunisia [19], who found a mean age of 32, 33 and 34 respectively. These results are in line with the literature, which describes the female prevalence of the disease and its peak in the genital activity period, particularly in the 20 to 40 age bracket [6].

Clinically, published data reveal the preponderance of joint signs at 57.34%. This result is similar to those reported in the series by Eloundou *et al.* in Cameroon [20] and Daou *et al.* in Niger [13], where polyarthralgia was noted in 66.7% of cases. This may be explained by the fact that rheumatological manifestations

are often revelatory of lupus disease.

Cutaneous-mucosal manifestations were present in 42.9% of cases, and were dominated by malar erythema. The malar erythema characteristic of systemic lupus erythematosus was the most common in the study by Marie *et al.* in Cameroon [21], and Hounssounou *et al.* in Côte d'Ivoire [14], who reported 20.5% and 31.5% respectively.

Renal involvement was noted in 42.9% of cases. It should be noted that renal biopsy was not performed due to the unavailability of technical facilities, the crucial lack of equipment in the anatomopathology laboratory and the lack of doctors specializing in this field.

Renal involvement appears to be frequent in our series and is represented by massive proteinuria. Renal involvement may reveal lupus disease in 25% to 70% of cases [22].

In terms of treatment, corticosteroid therapy plays an important role, given the size of our sample. For the moment, background treatment is dominated by hydroxychloroquine, which seems to control the disease well, which explains the low rate of death and loss of sight.

Generally speaking, in Chad, the diagnosis of SLE remains difficult due to clinical polymorphism and the difficulty of access to immunological testing, which is not performed in Chad. Treatment is dominated by corticosteroid therapy. Background treatment is essentially based on hydroxychloroquine.

5. Conclusion

SLE has its own particularities in Chad. These include clinical polymorphism, the frequency of anti-DNA natives, the low frequency of antiphospholipids and, last but not least, the very high efficacy of hydroxychloroquine treatment. Depending on the study, its prevalence ranges from 7 to 159 cases per 100,000 population. It runs in families in 5% to 10% of cases.

Conflicts of Interest

No conflict of interest.

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