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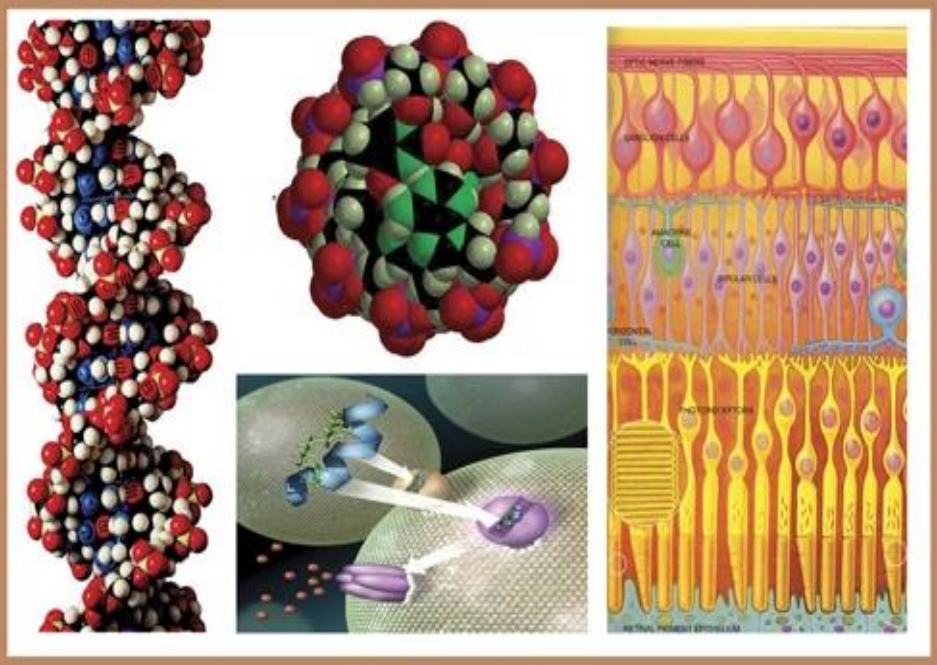

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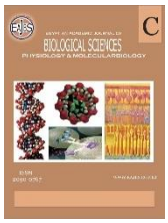

Epidemiology of Systemic Lupus Erythematosus in Western Algeria. A Multicenter Study of 194 Cases

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ABSTRACT

Background: Systemic lupus erythematosus is the most severe autoimmune inflammatory diseases prototype. It is characterized by a large clinical polymorphism under the influence of genetic, immunological and environmental factors, affecting more likely women during genital activity periods. ***Objective:*** The aim of our investigation is to determine and specify the epidemiological, clinical, immunological, therapeutic and evolutionary profile of SLE in Algerian population.***Patients and methods*:** A retrospective multicenter study was conducted on 194 lupus patients diagnosed at a higher age according to ACR and SLICC criteria, covering a period of 13 years (2006-2019). The medical records were selected from the archive data for hospital stays and by a prospective listing of patients followed in consultation. ***Results:*** The mean diagnosis age of our patients was (29.66±12.84). The most frequent clinical manifestations were cutaneous 71.1%, articular 74.7% and hematological 71.6%. 26.3% of the patients had nephropathies. The positive titer of antinuclear antibodies was 94.4%, anti-DNAn 66.7%, anti-Sm, RNP, SSA, and SSB in 31.5, 21, 39.5, and 19.8% of cases respectively. The secondary anti-phospholipid syndrome was associated with 15.4% of patients. Other autoimmune diseases associated with SLE and positive family history were detected in 97.93% and 34.53% of patients respectively. While confirming the clinical polymorphism of SLE. ***Conclusion:*** The clinical polymorphism of SLE is confirmed by our study, its severity and complexity and even the great similarities with the differences series of literature around the world, urges us to continue research to improve therapeutics for a better prognosis through early management and to enhance the life expectancy of patients.

INTRODUCTION

Systemic lupus erythematosus (SLE) is a chronic disease classified as one of the most serious autoimmune diseases, the precise causes remain unknown and probably heterogeneous (Iliopoulos A, *et al.*,1996), with a large clinical polymorphism characterized by a multifactorial disruption of the immune system and the production of autoantibodies directed essentially against nuclear antigens (Tan EM, 1989). The disease affects more likely women during periods of genital activity with a sex ratio of 9 females to 1 male (Shlomchik MJ, et al.,2001), but it can also begin in children and the elderly. SLE is a multifactorial pathology depending on a genetic context, immunological, endocrine and even environmental factors contributing to the onset and then the aggravation of the disease (Shlomchik MJ, *et al.,* 2001; Haddouk S *et al.,* 2005). Several series of SLEs have been reported worldwide (Louzir B *et al.*,2003; Siegle M *et al.,* 1973; Segasothy M *et al.*,2001). But it is still insufficient in North Africa (Symmons DPM, 1995; El Garf A *et al.*,1990), especially in Algeria.

The objective of our investigation is to define the epidemiological, clinical, biological, immunological, and evolutionary profile of systemic lupus erythematosus in the Algerian population.

MATERIALS AND METHODS

This is a retrospective multi-center study of patients diagnosed with SLE between January 2006 and December 2019 at the ORAN University Hospital (EHU), and actively monitored in the internal medicine department. The medical records were selected from the archive data for hospital stays and by a prospective listing of patients followed in consultation. All patients over the age of 16 years were included in the diagnosis of SLE made according to the ACR 1997 criteria and SLICC (Systemic Lupus International Collaborative Clinics) of 2012 (Petri M et al.,2012). Patients under 16 years of age were excluded because they were followed by a different medical team (paediatrics).

A total of 194 patients were included. Causes of exclusion were: patients with less than 4 ACR and SLICC criteria; 26 patients suspected of SLE, records with insufficient data, 09 patients who died during hospitalization.

The standardized data collection included demographic, clinical, biological, 2002 SLICC and 1997 ACR criteria (Hochberg MC, 1997) as well as therapeutic interventions and potential iatrogenic complications. Information on deaths during hospitalization was collected from hospital records and death registers. Given the retrospective nature of the study, the ethnic origin could not be determined since Algerians are generally descended either from Berbers or Arabs, which are the two predominant ethnic groups in Algeria. For associated autoimmune diseases, the criteria for definition were specific to each disease: American-European criteria for Gougerot-Sjögren syndrome (Vitali C *et al.,* 2002), Sydney International criteria for APLS (Vitali C et al.,2002), joint ACR/EULAR criteria for Rheumatoid Arthritis (Aletaha D *et al.,* 2010).

Data were entered and analyzed via SPSS 22.0 (Statistical Package for the Social Sciences, IBM Corporation; Chicago, IL. August 2011) and Excel ®. Qualitative variables were expressed in numbers and percentages, quantitative variables in mean with their standard deviations and/or 95% confidence intervals calculated according to the normal distribution. In the case of non-normal distribution, the quantitative variables were described with the median rates.

RESULTS AND DISCUSSION

Characteristics of the Study Population:

Of the 194 patients included, 184 were female (94.85%) and 10 were male (5.2%); giving a female/male sex ratio of

18.24:1 and a mortality rate of 4.61% (n= 09). The mean age of disease onset was 29.66 ± 12.84 years (Extremes: 11-89 years) and the most affected age range was 19-26 years, the mean age at diagnosis was 42.07 ± 13.85 years, the most affected age range was 26-36 years. A family history of first-degree autoimmune disease was found in 67 patients or 34.53% of cases. There was a history of Lupus in 7 cases (3.6%), Diabetes 20 cases (10.3%), high blood pressure 10 cases (5.2%), DT+ high blood pressure 24 cases (12.4%) and 06 patients (3.1%) had a family history of other AI diseases (RA, thyroid,). One hundred and ninety (190) patients (97.93%) had another autoimmune disease: 63.4% had Anemia, 25.8% Raynaud's Syndrome, 5.2% Gougerot-Sjogren, 11.3% diabetes 1/2, 17% high blood pressure, 25.3% LN (lupus nephropathy), 7.7% Rheumatoid Arthritis, 10.8% APLS, 7.2% Neuropsychiatric systemic lupus erythematosus (NPSLE), 35.6% had other diseases such as dermatomyositis, Hashimoto's thyroid, psoriasis....etc

Clinical and Biological Characteristics of Lupus Disease:

The major clinical manifestations observed in the 194 lupus patients during the study period are shown in (Table 1), according to the criteria defined by the SLICC and ACR classification. Patients met an average of 6 criteria (extremes: 4-14).

The initial manifestations were joint involvement 74.7%, haematological 71.6%, cutaneous 71.1%, pulmonary 35.1%, renal 26.3%, cardiac 9.8%, and central nervous system (CNS/8) involvement 11.3%.

Table 1: Main Clinical features of the 194 systemic lupus erythematosus (SLE) patients in Algeria

General signs	Patients load (%)
Fever (non-infectious fever)	18 (9.3)
Asthenia	74 (38.1)
Weight loss	37 (19.1)
Anorexia	18 (9.3)
Articular manifestation [a]	
Arthritis/ Arthralgias	145 (74.7)
Dermatological disorders [a]	138 (71.1)
Photosensitivity	77 (39.7)
Malar rash	107 (55.2)
Mucosal ulcer[a]	28 (14.4)
Alopecia not scarring	41 (21.1)
Renal involvement	51 (26.3)
Nephrotic syndrome	02 (1)
Nephropathy class I [b]	18 (9.3)
Nephropathy class II [b]	02 (1)
Nephropathy class III [b]	05 (2.6)
Nephropathy class IV [b]	07 (3.6)
RPGN	08 (4.1)
Acute renal insufficiency	01 (0.5)
Chronic renal insufficiency	05 (2.5)
Cardiovascular manifestations	18 (9.3)
Pericarditis [a]	13 (6.3)
Lung damage	68 (35.1)
Neuropsychiatric [a]	22 (11.3)
Specific digestive impairment	04 (2.1)
Autoimmune hepatitis	02 (1.0)
Ocular injury	05 (2.6)
Viral infection (EBV, CMV, Zona)	02 (1.0)

[a] Definition according to the classification of Systemic Lupus International Collaborating Clinics (SLICC 2012) (Petri M et al.,2012)

[b] Accorging to the 2003 classification of the International Society of Néphrologie and the Renal Pathology Society (ISN/RPS) (Weening JJ, 2004)

RPGN: Rapidly Progressive Glomérulonéphritis; EBV: Eptein-Barr Virus; CMV: Cytomégalovirus.

A potential triggering factor for the inaugural manifestations of LS was reported in 6 cases (3.09%): lupus pregnancy in 2 cases, autoimmune hepatitis in 2 cases, an infectious syndrome in 2 cases. Viral type infections (CMV, EBV, Zona) had directly preceded the initial manifestations of lupus.

Concerning dermatological disorders, we noted: 107 cases (55.2%) of malarial rash, 77 cases of photosensitive lupus lesions (39.7%), 28 cases (14.4%) of oral-nasal ulcers, 41 cases (21.1%) had non-scarring alopecia). Among the 26.3% covering the SLICC criteria for nephropathy, 32 patients had lupus nephropathy of a different class, 08 cases had rapidly progressive glomerulonephritis (RPGN) and 05 cases had severe or end-stage chronic renal insufficiency.

The main biological and immunological manifestations are presented in (Table 2). The inflammatory syndrome is very remarkable in our patients, erythrocyte sedimentation rate (ESR) is accelerated in almost all patients (92.79%), with a mean ESR (1st hour) equal to 59.80± 37.36 mm/h and ESR (2nd hour) equal to 88.22± 38.33 mm/h, CRP C reactive protein-positive in 53.6% of cases with a mean equal to 18.10± 24.61. Clinical and biological manifestations are also reported according to the criteria validated earlier.

Table 2: Hematologic Biological and Immunologic Abnormalities of Lupus Patients at Follow-Up by SLICC Criteria

	Patients load (%) (n=194)
Hematological	139 (71.6)
Leucopenia (< 4 G/l)	39 (20.1)
Lymphopnia (< 1 G/l)	61 (31.4)
Thrombopenia (< 100 G/l)	41 (21.1)
Neutropenia	9 (4.6)
Anemia	123 (63.4)
Normochromic Normocytic Anemia	67 (34.5)
Microcytic Hypochromic Anemia	26 (13.4)
Hypochromic Normocytic Anemia	8 (4.1)
Normochromic Microcytic Anemia	6 (3.1)
Hemolytic anemia	16 (8.2)
Inflammatory Syndrome	
Accelarated ESR	180 (92.79)
Positive CRP	104 (53.6)
Serum protein electophoresis (SPEP)	
Chronic inflammatory reaction	124 (63.9)
Acute inflammatoryreaction	36 (18.6)
Subacute inflammatory reaction	9 (4.6)
PEwithout major features	25 (12.9)
	Patients load (%) (n=162)
Immunological	
Antinuclear antibody (≥1/80)	153 (94.4)
anti-dsDNA	108 (66.7)
anti-Sm	51 (31.5)
anti-Sm/RNP	34 (21.0)
anti-Ro/SSA	64 (39.5)
anti-La/SSB	32 (19.8)
anti-Histone	16 (9.9)
anti-Ribosome	04 (2.5)
anti-Centromère	03 (1.9)
anti-Nuclésome	10 (6.2)
anti- SCL-70	09 (5.6)
anti-phospholipid (APL)	25 (15.4)
Hypocomplementemia	60 (30.92)

ESR : Erythrocyte Sedimentation Rate, CRP : C reactive protein, SPEP : Serum protein Electrophoresisdes; Anti-dsDNA: anti-double-stranded –DNA ;APL: antiphospholipid

Treatments and Evolution:

The main drug treatments for lupus received by our patients are presented in (Table 3). Among the 194 lupus cases, the majority of patients had iatrogenic complications, mainly urinary and pulmonary infections. There were also patients with treatment side effects, 10 cases of corticosteroid-induced diabetes, 08 patients with osteoporosis and 04 cases of adrenal insufficiency. Concerning deaths during hospitalization, we noted 09 cases (4.61%).

Table 3: Treatments administered to 194 lupus patients:

Treatment	Number of patients	%	Specific indications According to organ
Hydroxychloroquine	167	86,1	General signs/ Skin
Corticosteroid	179	92,3	Skin/ Joints
Oral Corticostroid >15mg/d	179	92,3	Skin/ Joints
IV Corticosteroid therapy	43	22,2	Kidney/ CNS
NSAIDs	19	9,8	Articular
Immunosuppressive drugs	70	36,1	Kidney/CNS/ Articular
Cyclophosphamide (Endoxan)	38	19,6	Rein/ CNS
Méthotrexate (MTX)	12	6,2	Articular
Azathioprine (Immurel)	30	15,5	Kidney/joint
Mécophénolate mofétil (MMF)	9	4,6	Kidney
Biotherapy (Rituximab/ IVIG)	21	10,8	Kidney/ Haematology/ Joint

IV: Intravenous; NSAIDs: Non-Steroidal Anti-Inflammatory; IVIG: *Intravenous immunoglobulin ; CNS : Central nervous system*

Table 4: A comparison of the different clinical and serological manifestations of SLE in Algeria and other international studies**:**

ACR 1982 Criteria	Our study	Tunisia (Louzir B et al.,2003 ; Haddouk S et al.,2005)		Morocco (Bouras M et al.,2014)	Kuwait (Al-Jarallah K et al.,1998)	Saudi Arabia (Alballa SR, 1995)	Egypt (El Hadidi KT et al.,2018)	Lebanon (Uthman I et al.,1999)	Europe (Cervera R et al.,1993)	North America (Tan EM et al.,1982)	Malaysia (Wang F et al.,1997)	India (Malaviya AN et al.,1997)	Brazil (Chahade WH et al.,1995)
Number of patiens	194	295	84	129	108	93	1109	100	1000	177	539	1366	685
Proportion of women (%)	94.85	91.86	85.71	88.37	90.74	90.3	89.7	86	NA	NA	NA	NA	94.45
Mean age attainmant	29.6	30.6	29.9	31	31.5	24.4	25.8	25	NA	NA	NA	24.5	31
Critères de l'ACR													
Malar rash	55.2	62	57.1	67.4	43	37	48.5	52	58	57	60.8	58.5	51
Photosensitivity	39.7	46	45.2	75	48	22	45.6	16	45	43	25.9	48	47
Mucosal ulcer	14.4	15	7.1	29.3	33	17	34.5	40	24	27	23.7	55	11
Articular manifestation	74.7	90	78.6	65	87	68	76.7	95	84	86	36	85	92
Renal involvement	26.3	56	59	46.8	37	61	33.1	50	39	51	49.5	73	52
Atteintes neurologique	11.3	14.5	14.3	5.5	23	20	6.4	19	27	20	23	27	NA
Hematological disorders	71.6	65	70	NA	53	85	55	47	22	59	NA	21	NA
Antinuclear antibody	94.4	92	97.6	NA	94	95	96.9	87	96	99	69.1	98	96
Positive anti-DNA	66.7	74	75	NA	58	90	79.3	50	78	67	34	55	47
Anti-Sm	31.5	57	36.9	NA	13	40	22.5	NA	10	31	NA	29	43

anti-dsDNA: antibody to double-stranded DNA; anti-sm: antibody to sm nuclear antigen; NA: data not available

Our study is the first investigation of SLE in Algeria, it confirms the clinical polymorphism of the disease and its similarity with other series in different regions of the world (Table 4).

SLE is a disease of young women with a peak in the third decade of life. We found a female predominance (94.85%), which is similar to several series in the literature where the rate is over 85% (Borcher AT *et al.*,2010, Louzir B *et al.*,2003, Al-Jarallah K *et al.*, 1998, Alballa SR, 1995; Haddouk S *et al.*, 2005), our series illustrated that this predominance supports the hypothesis of endocrine factors involved in the

etiopathogenesis of Lupus (Haddouk S *et al.*,2005; Vilarinho S *et al.*,1998). The average age of onset was 29.6 years which concords with several findings (Haddouk S *et al.,* 2005; Al-Mekaimi A *et al.*,1997; Bouras M *et al.,* 2014; Uthman I *et al.*,1999; Tan EM *et al.*, 1982), a younger average age was found in Saudi Arabia 24.4 years Alballa SR, 1995), Lebanon 25 years (Uthman I *et al.,* 1999), India 24.5 years (Malaviya AN *et al.,* 1997) and 25.8 in Egypt (El Hadidi KT *et al.*,2018). The main clinical manifestations at the time of diagnosis and follow-up are similar and comparable, regardless of the studied region (Table 4). The clinical studied manifestations were: skin, joint, haematological, renal, cardiovascular, neurological, and pleuropulmonary with some variations according to the studied country.

Photosensitivity occurring during or shortly after sun exposure is frequently observed in our study in 39.7% of cases, 45.6% in Egypt (Eh Hadidi KT et al.,2018), 46% in Tunisia (Louzir B *et al.*,2003) and 48% in Kuwait (Al-Jarallah K *et al.,* 1998). The malarial rash characteristic of SLE is found in 55.2% of cases, 52% in Lebanon (Uthman I *et al.*,1999), 62% in Tunisia (Vitali C et al.,2002), 67.4% in Morocco (Bouras M *et al.,* 2014), 58% in Europe (Cervera R *et al.,* 1993) and 57% in North America (Tan EM *et al.*,1982). This percentage is decreased in Saudi Arabia by 37% (Alballa SR, 1995) and Kuwait by 43% (Al-Jarallah K *et al.*,1998). Mucosal ulcerations noted in our series in Tunisia, Saudi Arabia and Brazil (between 11 and 17%) (Louzir B *et al.*,2003; Alballa SR, 1995; Chahade WH *et al.*,1995) are very low compared to Morocco, Kuwait, Egypt and Lebanon (29 to 40%) (Bouras M *et al.,* 2014; Al-Jarallah K *et al.*,1998; El Hadidi KT *et al.,* 2018; Uthman I *et al.*,1999). Joint manifestations are the most frequent, 74.7% of the cases in our study, 76.7% in Egypt (El Hadidi KT *et al.,* 2018), 65% in Morocco (Bouras M *et al.,* 2014) and 68% in Saudi Arabia (Alballa SR, 1995), over 80% in Tunisia, Lebanon, Europe, North America, Brazil, and India (Louzir B *et al.,* 2003; Uthman I *et al.*,1999; Alballa SR, 1995; Tan EM *et al.*,1982; Chahade WH *et al.,* 1995; Malaviya AN *et al.*,1997), but this sign is rarer in Malaysia 36% (Wang F *et al.,* 1997). Haematological damage is the second most observed manifestation in lupus patients, 71.6% in our work, Saudi Arabia represents the highest percentage with 85% of cases (Weening JJ, 2004) , 50 to 65% of cases in Kuwait, Egypt, Tunisia, North America (Al-Jarallah K *et al.,* 1998; El Hadidi KT et al.,2018; Louzir B *et al.,* 2003; Tan EM et al.,1982) , India and Europe had the lowest percentage (21/22%) (Malaviya AN *et al.*,1997; Cervera R *et al.*,1993). Lupus nephropathy is variable in the literature according to age, sex, period of recruitment into service, lifestyle and nutrition. It is low equal to 26.3% in our study and significantly higher in other populations especially in India 73% of cases (Malaviya AN *et al.*,1997). Concerning the neurological impairment, the rate was equal to 11.3% of cases in the Algerian population, 14.3 % in Tunisia (Haddouk S *et al.*,2005), 5.5% in the Moroccan population (Bouras M *et al.*,2014), 6.4% in the Egyptian series (El Hadidi KT *et al.*,2018) and the highest rates were recorded in the Europeans and Asian Indians populations with 27% of cases (Cervera R *et al.*,1993; Malaviya AN *et al.*,1997).

The biological manifestations observed in our work are similar to the data in the literature. Anemia was the most recorded disturbance of the Complete blood count (CBC) and was found in 63.4 % of the cases, it is most often non-specific: inflammatory, iron deficiency, or secondary to another pathology associated with SLEs. Normocytic normochromic anemia is noted in 34.5% of cases, representing the highest percentage, autoimmune hemolytic anemia

characteristic of SLE was noted in our work in only 8.2% of cases, leukopenia was observed in 20.1%, lymphopenia 31.4%, thrombocytopenia 21.1%, similar to that noted in the Tunisians (Haddouk S et al.,2005), Malaysian (Wang F et al., 1997), Lebanese (Uthman I et al.,1999) and Brazilian series (Chahade WH *et al.*,1995).

On the immunological level, the search for antinuclear antibodies (AAN) is mandatory, they are positive in our work in 94.4% of cases, 92%/ 97% in Tunisia (Louzir B *et al.*,2003; Haddouk S *et al.*,2005), 94% in Kuwait (Al-Jarallah K *et al.*,1998), 95% in Saudi Arabia (Alballa SR, 1995), 96.9% in Egypt (El Hadidi KT *et al.*,2018), 96% in Europe and Brazil (Cervera R *et al.*,1993; Chahade WH *et al.*,1995), 98% in Indian population (Malaviya AN *et al.*,1997).

Positivity of anti-native DNA antibodies observed in 66.7% of cases similar to that observed in North America (67%) (Tan EM *et al.*,1982), and quite close to the percentage in Tunisia, Kuwait, and Europe (Louzir B *et al.*,2003; Al-Jarallah K *et al.*,1998; Cervera R *et al.*,1993, Haddouk S et al.,2005), but significantly higher than in the Lebanese and Malaysian population (Uthman I *et al.*,1999; Wang F *et al.*,1997). Another serologic marker is anti-Sm antibody because the currently used ELISA is highly sensitive but lacks specificity, this marker is positive in our study in 31.5% of cases similar to North America (31%) (Tan EM et al.,1982), and higher in comparison to the European population (10%) (Cervera R *et al.*,1993) without any given explanation.

On the evolutionary level, we noted several drug complications related to the treatments administered by our patients, six cases treated with prednisone presented cortico-induced diabetes (3.09%), osteoporosis was found in five patients (2.57%).

During the selected study period (2006-2019), overall mortality was 4.61% (n=09) during hospitalization, which represents a lower frequency compared to the one recorded in Tunisia (13%) (Louzir B et al.,2003) and Brazil 29% (Chahade WH *et al.*,1995). The main causes of death were cardiovascular disease (Bartels CM *et al.*,2014; Abu-Shakra M *et al.*,2012), renal disease and cerebrovascular accident (CVA or stroke). The use of corticosteroid therapy and immunosuppressive treatment in the management of our patients has proven to be effective in preventing relapses and limiting complications related to lupus disease.

Conclusion:

Our study is the first retrospective multi-center study on SLE in Algeria. It confirms the clinical polymorphism of this pathology, its seriousness and complexity and even the great similarities with serial differences in the literature around the world urges us to continue research to improve therapeutics in order to improve the prognosis through early management and to extend the life expectancy of lupus patients.

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Competing interests: None.

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ARABIC SUMMARY

وبائيات الذئبة الحمامية الجهازية في غرب الجزائر. دراسة متعددة المراكز لـ 194 حالة

بلمختار نعيمة رانيا [1-2]* ، حرير نورية [1-2] ، زمري خليدة [1-2] ، كانون خديجة [1-2] ، بشاوي بوسهلة [3] ، هبري سيد تاج 4

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مقدمة: الذئبة الحمامية الجهازية هي أشد أمراض التهابات المناعة الذاتية. يتميز بتعدد الأشكال السريري الكبير تحت تأثير العوامل الوراثية والمناعية والبيئية ، مما يؤثر على النساء الأكثر احتمالا خلال فترات النشاط التناسلي.

الهدف: الهدف من بحثنا هو تحديد وتحديد السمات الوبائية والسريرية والمناعية والعلاجية والتطورية للذئبة الحمامية الجهازية في السكان الجزائريين.

المرضى والطرق: أجريت دراسة استعادية متعددة المراكز على 194 مريضًا بالذئبة تم تشخيصهم في عمر أعلى وفقًا لمعايير ACR و SLICC ، تغطي فترة 13 عامًا (2006-2019). تم اختيار السجلات الطبية من بيانات الأرشيف للإقامات في المستشفى ومن خلال قائمة مرتقبة للمرضى متبوعة بالتشاور.

النتائج: كان متوسط العمر التشخيصي لمرضانا (29.66 ± 12.84). أكثر المظاهر السريرية شيوعا كانت جلدية ٪71.1 ، مفصلية ٪74.7 ، أمراض دم ٪71.6. ٪26.3 من المرضى يعانون من اعتلال الكلية. عيار إيجابي للأجسام المضادة للنواة ٪94.4 ، مضاد DNAn ٪66.7 ، مضاد Sm ، RNP، SSA، SSBفي 31.5 ، 21 ، 39.5 ، و ٪19.8 من الحالات على التوالي. ارتبطت متلازمة مضادات الفوسفوليبيد الثانوية في ٪15.4 من المرضى. وكذلك نقص تكامل الدم في ٪30.92. تم الكشف عن أمراض المناعة الذاتية الأخرى المرتبطة بمرض الذئبة الحمراء والتاريخ العائلي الإيجابي في ٪97.93 و ٪34.53 من المرضى على التوالي. مع تأكيد تعدد الأشكال السريري لـ.SLE

الخلاصة: تم تأكيد تعدد الأشكال السريري لـ SLE من خلال دراستنا ، وشدته وتعقيده وحتى أوجه التشابه الكبيرة مع سلسلة الاختلافات في الأدبيات حول العالم ، يحثنا على مواصلة البحث لتحسين العلاجات من أجل تشخيص أفضل من خلال الإدارة المبكرة وتعزيز متوسط العمر المتوقع لمرضى الذئبة.

الكلمات المفتاحية: الذئبة الحمامية الجهازية ، الوبائيات ، تعدد الأشكال الإكلينيكي ، الجزائر