Epidemio-Clinical and Paraclinical Profile of Autoimmune Diseases Treated in the Rheumatology Department of Chu of Cocody-Abidjan

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Abstract: *Systemic autoimmune diseases (SAD) are increasingly being described in Africa and their clinical presentation remains polymorphic. The aim of this study is to determine the specific epidemiological, clinical, paraclinical, therapeutic and evolutionary aspects in a rheumatology department. This is a retrospective study realized in a rheumatology service of university hospital center (UHC) of Cocody-Abidjan. The results showed that Rheumatoid arthritis was the most representative of epidemiological profile of patients studied with 47.27%. Cutaneous and phaneromucosal manifestations were present in 44.55% (n=49) of patients. Systemic corticosteroids with 90,91 %, are the standard treatment of cases of lupus erythematosus and rheumatoid arthritis. The general clinical signs revealed 82 cases of weight loss. Relating to the haematological assessment showed that anemia has a strong representativeness with 71.82% of affected patients. The immunological analysis revealed that 30% of patients had positive anti-nuclear factors (ANF).*

Keywords: autoimmune disease; systemic, rheumatology department

1. Introduction

Autoimmunity is the breaking of defence mechanisms that leads to the pathogenic action of the immune system against the natural constituents of the body and the appearance of a disease known as autoimmune disease (AID). It can be defined as the activation of the patient's immune system against its own antigens (Ag) [1].

Autoimmune diseases are multifactorial in origin. Indeed, predisposition to these diseases is most often based on genetic and environmental factors [2].

In Africa, autoimmune diseases have long been considered very rare or instead non-existent because they are unknown and undiagnosed. There are several reasons for this, including: the great variability in the modes of revelation and the often misleading nature of the inaugural presentations; the lack of specific training with the preponderance of infectious pathologies in medical curricula; the inadequacy of the technical platform, often with major difficulties in obtaining reliable and quickly immunological examinations.

The aim of this work is to describe the epidemioclinical and paraclinical aspects of autoimmune diseases encountered in the rheumatology department of the Cocody University Hospital in the District of Abidjan.

2. Materials and Methods

Site and type of study

This is a monocentric and descriptive retrospective study, conducted at the rheumatology department of the Cocody Abidjan University Hospital Center, from August 9 to November 9, 2019.

Criteria for inclusion

Included in the study were the records of 110 patients hospitalized in the rheumatology department of Cocody UHC for systemic autoimmune diseases over a five (05) year period, from 2014 to 2018.

Exclusion criterion

All incomplete records as well as non-exploitable clinical records were excluded.

Technical equipment

The technical equipment used in this work consisted of 110 patient files and a survey sheet.

The survey form (questionnaires) contains the following information:

- Clinical Data: General signs, clinical manifestations;
- Paraclinical data: immunological assessment, haematological assessment (anaemia, leukopenia, neutropenia, lymphopenia, thrombocytopenia, hypereosinophilia).
- Diagnosis: the types of Systemic Autoimmune Diseases assumed
- Therapeutic: the prescribed molecules (corticosteroids, synthetic antimalarial drugs; methotrexate, cyclophosphamide, azathioprine, etc.)
- Evolution: favorable, lost sight, death.

3. Methods

Immunological parameters

The immunobiological exploration consisted of:

- The search for antinuclear antibodies (ANA) carried out by the indirect immunofluorescence (IIF) technique on Hep2 cells (Kallstad slides, Biorad, threshold=1/160).
- The determination of extractable nuclear antigenic specificities or anti ENA (anti SSA, anti SSB, anti Sm) using a combination of immunodot (D-Tek, AESKU) and ELISA (ENA profile, Biorad) techniques.
- The research of rheumatoid factor carried out using an agglutination technique (latex and Waler Rose, threshold = 8UI/ml).
- Detection of native anti-DNA CAs using an ELISA-type enzyme-linked immunosorbent assay and an indirect immunofluorescence technique (crithidialuciliae slides, threshold 1/5).
- Searching for other autoACs according to the clinical manifestations of the patients, using appropriate laboratory methods.

Data entry and analysis

A descriptive analysis of the previously collected data was conducted using EPI INFO version 7.2. and SPSS (Soft Package Social Science) version 25.0. As for the graphical representations, these were carried out using Excel 2016 software.

Ethical aspects

The collection and use of patients' socio-demographic and clinical data was carried out in compliance with the rules of medical ethics regarding patient anonymity and confidentiality.

4. Results

Epidemiological profile

Rheumatoid arthritis was the most representative in 47.28% of cases; followed by lupus erythematosus 23.64%; scleroderma 10.91% of cases; undifferentiated connectivitis 11% of cases and Gourgerot Sjrogen syndrome 0.91% of cases. (**Figure 1**).

The results showed Systemic corticosteroids are the standard treatment of cases of lupus erythematosus and rheumatoid arthritis in 90.91% of case. Synthetic antimalarial drugs are used in 22.73%, methotrexate in 32.73%, cyclophosphamide in 9.09% and azathioprine in 7,27% of cases**. (Table I).**

The results showed that the evolution of the patients was favorable in 74% of the cases followed. 13% died due to complications from corticosteroid therapy and 13% were lost to follow-up**. (Figure 2)**

Clinical signs

- General signs

On general signs, the results showed 69 cases of fever with 62.73%; 82 cases of weight loss with 74.55%; 59 cases of anorexia with 53.64% and 75 cases of asthenia with 68.18%**. (Figure 3).**

- Musculoskeletal Manifestations

On 110 patients, the musculoskeletal manifestation was observed on 106 patients or 96.36%. 95 cases or 86.36% had arthralgia; 76 cases or 69.09% had arthritis and 10 cases or 9.09% had myalgia. **(Figure 4).**
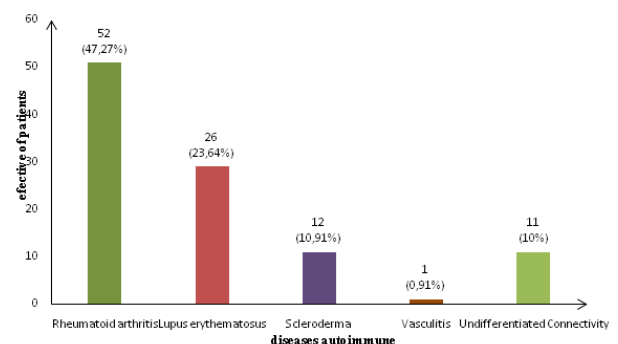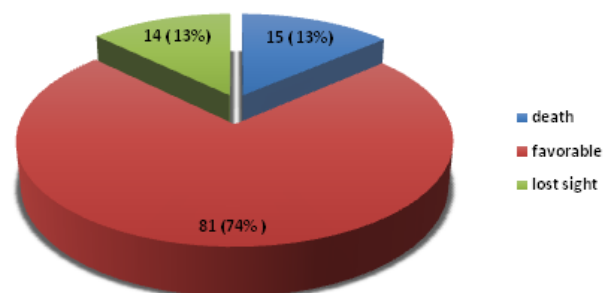

Figure 1: Breakdown of patients by pathology

Figure 2: Evolution of patients

Table I: Treatment

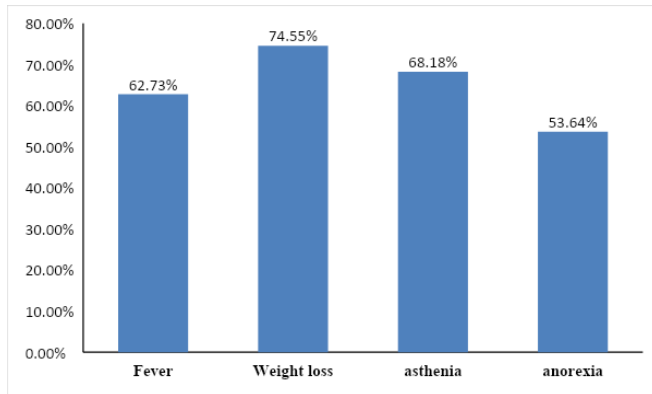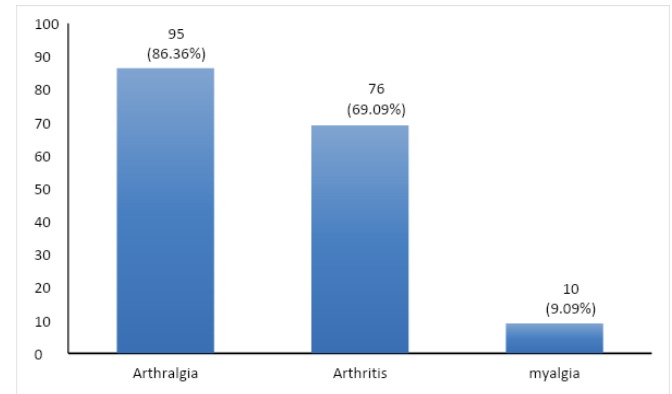|	Frequency		Percentage	
	Yes	**No**	**Yes**	**No**
Corticoids	100	10	90,91	9,09
Synthetic antimalarial drug	25	85	22,73	77,27
Methotrexate	36	74	32,73	67,27
Cyclophosphamide	10	100	9,09	90,91
Azathioprine	8	102	7,27	92,73
Other treatments	18	24	16,5	22

Figure 3: General signs in patients

Figure 4: Musculoskeletal Manifestations

- Cutaneous and phaneromucosal manifestations

Cutaneous and phaneromucosal manifestations were present in 44.55% (n=49) of patients (**Table II**): Erythema in 21 cases or 19.09%, nodosity in 6 cases or 5,45%, alopecia in 14 cases or 12.73%, skin rash in 2 cases or 1.82% and Bullous lesion in 3 cases or 2.73%.

- Neuropsychiatric Manifestations

The results of the neuropsychiatric manifestations are shown in **Table III.** 13.64% of cases presented Psychiatric manifestation, 11.82% of cases presented neurological manifestations and 4.55 % of cases presented convulsions.

Paraclinical signs

- Hematology check-up

The results relating to the haematological assessment showed that anemia has a strong representativeness with 71.82% of affected patients. Leukopenia and thrombocytopenia have obtained respectively 12.73% and 7.27% of affected patients (**Figure 5**).

- Immunological check-up

In our series, 30% of patients had positive anti-nuclear factors (ANF); 18.18% had positive native anti-DNA, 19.09% had positive anti-ENA; 2.73% had positive anti-phospholipids; 22.8% had positive rheumatoid factors and 12.73% had positive anti-ccp2. (**Table IV**).
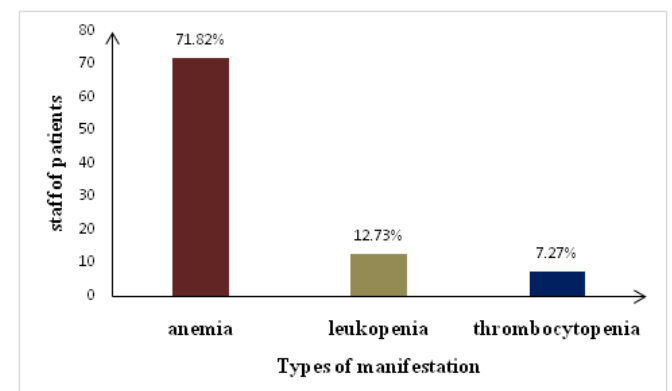
Table II: Cutaneous and phaneromucosal Manifestations

	Frequencies		Percentage (%)	
Erythema	21		19,09	
Nodosity	6		5,45	
Alopecia	14		12,73	
Skin rash	2		1,82	
Bullous lesion	3		2,73	
Photosensitivity	7		6,36	

Table III: Neuropsychiatric Manifestations

	Frequencies	Percentages (%)
Neurological manifestations	13	11, 82
Convulsion	5	4, 55
Psychiatric manifestations	15	13 , 64

Figure 5: Distribution of Patients by Hematologic Events

Table IV: Immunological assessment

Immunological assessment	Frequency / percentage		
	Positive	Negative	Unrealized
Anti-nuclear factor	33 (30%)	20 (18, 18%)	57 (51, 82%)
Native anti-DNA	20 (18, 18%)	17 (15, 45%)	73 (66, 36%)
Anti-ENA	21 (19, 09%)	7 (6, 36%)	82 (74, 55%)
- **Anti-Sm**	9 (8, 18%)	101 (91, 82%)	–
- **Anti-RNP**	13 (11, 82%)	97 (88, 18%)	–
- **Anti-Ro**	13 (11, 82%)	97 (88, 18%)	–
- **Anti-La**	7 (6, 36%)	103 (93, 64%)	–
- **Anti-Ribosome**	–	110 (100%)	–
- **Anti-Scl-70**	4 (3, 64%)	106 (96, 36%)	–

• Anti-centromeres	-	110 (100%)	-
• Anti-Jo1	1 (0, 91%)	109 (99, 09%)	-
ANCA	1 (0, 91%)	5 (4, 55%)	104 (94, 55%)
Anti-phospholipids	3(2, 8%)	7 (6, 4%)	53 (48, 18%)
Rheumatoid factors	25 (22, 73%)	32 (29, 09%)	48, 18
Kà;Anti-CCP2	14 (12, 73%)	30 (27, 27%)	66 (60%)

5. Discussion

Results obtained on the epidemiological, clinical and paraclinical characteristics of patients with autoimmune diseases were discussed.

The results showed that rheumatoid arthritis obtained the highest representativeness with 47.27%. This results obtained are similar to are those of **Mijiyawa et al.** with 29 cases that presented rheumatoid arthritis in study connectivities to Togo [3]. This could be explained by the fact that the osteoarticular symptomatology with pain most often leads patients to consult the internal medicine and rheumatology services. Lupus erythematosus obtained 23.64% and was the second performance after rheumatoid arthritis in this study. These results are similar from those obtained by **Ouédraogo et al.** [4]. Scleroderma was present in 12 cases in our series, against 28 cases in Togo and 14 cases in Burkina Faso [3-4].

Corticoids are the most used in this study for the treatment of autoimmune diseases with 90.91%. These results are similar to those of **Galmiche et al.** with a high representativeness of corticoids to 54% in study autoimmune diseases during major sickle cell syndromes [5]. Methotrexate treatment recorded 32.73%, this treatment is in second position in this study. This result is different to those obtained in study of **Galmiche et al.**, in which methotrexate was found in third position [5].

The results relating to the general clinical signs revealed 82 cases of weight loss. This clinical signs was the highest representativeness. These results are different of those obtained by **Mzabi et al.,** who recorded 50 case of weight loss [6]. This difference could be explained by number of patient different between studies. Indeed, **Mzabi et al.** worked with 50 patient [6].

In this study, 69.09% of arthritis cases were recorded against 50% of arthritis cases in the work of **Noude et al.** [7]. Cutaneous and phaneromucosal manifestations were dominated by erythema with 19.09%. Alopecia and photosensitivity respectively obtained 12.73% and 6.36% in study. This result is different of those **Noude et al.** who obtained 82.50 % of cases of photosensitivity [7].

The result relating to hematological parameter showed that anemia is the most common manifestation with 71,82% of cases. Leukopenia and thrombocytopenia obtained respectively 12.73% and 7.27%. The results obtained are similar to those of **El Euch et al.** in study autoimmune diseases during the Biermer's disease, anemia was found in 15 cases, leukopenia in 4 cases and thrombocytopenia in 3 cases [8].

On immunological assessment, the result showed that positive anti-nuclear factor (ANF) was the most abundant with frequency of 30%. Positive anti-ENA and anti DNA obtained respectively 18.18% and 19.09%.

6. Conclusion

The present study showed that rheumatoid arthritis is most representative of epidemiological profile of patients studied. Systemic corticosteroids are the standard treatment of cases of lupus erythematosus and rheumatoid arthritis. The general clinical signs revealed 82 cases of weight loss. This clinical signs was the highest representativeness. The results relating to the haematological assessment showed that anemia has a strong representativeness with 71.82% of affected patients. The immunological analysis revealed that 30% of patients had positive anti-nuclear factors (ANF). Anti-nuclear factors constitute the most abundant type of antibody. It emerges from this study that the detection of clinical and paraclinical signs would be of great interest for the diagnosis and for immunosurveillance of patients to slow the progression of systemic autoimmune diseases.

Acknowledgement

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