

Rheumatoid Arthritis in Hospital Consultation in Guinea

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Abstract

Introduction: Rheumatoid arthritis (RA) is a systemic autoimmune disease characterized by polyarticular involvement with predominantly distal, peripheral, bilateral, symmetrical, erosive features and extra-articular manifestations. The objective of this study was to determine the epidemiological, clinical and therapeutic characteristics of patients with rheumatoid arthritis in the Rheumatology Department of the Ignace Deen National Hospital in Conakry. **Patients and Methods:** This was a descriptive cross-sectional study lasting 18 months from January 1, 2019 to June 18, 2020. Patients with rheumatoid arthritis diagnosed on the basis of clinical and paraclinical arguments in accordance with the ACR/EULAR criteria (2010) were included in this study. **Results:** We collected 60 cases of RA, representing a hospital prevalence of 5.6%. The mean age of patients was 46.6 ± 17.35 years. Rheumatoid arthritis mainly affected adult women with 78.33%. Symptomatic treatment was dominated by the use of NSAIDs and corticosteroid therapy. MTX was the most used long-term treatment, representing 68.3%, with a therapeutic combination of MTX, HCQ and AIS with 65%. We recorded 23.3% of MTX-related side effects, followed by AIS 11.6% and HCQ 8.3%. After 3 months of treatment, 38.4% of patients had low disease activity and 23.3% were in remission. **Conclusion:** RA is a serious disease because it can affect the functional prognosis due to its joint consequences and the vital prognosis due to its visceral damage. Methotrexate and other conventional background treatments still have their place.

Keywords

Rheumatoid Arthritis, Chronic Inflammatory Rheumatism, MTX, Guinea

1. Introduction

Rheumatoid arthritis (RA) is a systemic autoimmune disease characterized by

predominantly distal, peripheral, bilateral, symmetrical, erosive polyarticular involvement and extra-articular manifestations [1]. It can be life-threatening due to its systemic extra-articular manifestations. It has a significant socio-economic impact due to the functional disability, but also the costs of its treatment [2].

The principles of treatment for rheumatoid arthritis have evolved considerably since the advent of biotherapies [3]. Early diagnosis is a key element in patient management. In sub-Saharan Africa, diagnostic delay is significant, due, among other things, to a small number of rheumatologists [4]. Due to unfavorable socio-economic conditions in sub-Saharan Africa and the unavailability of biotherapies [5], therapeutic choices depend on local availability, which is limited [6]. Methotrexate and hydroxychloroquine (HCQ) are the main DMARDs used in sub-Saharan Africa [4] [6] [7]. The assessment of disease activity by validated composite scores must be regular (tight control) to achieve the therapeutic objective, which is remission [5]. Our study aims to describe the socio-demographic, clinical, therapeutic and evolutionary characteristics of rheumatoid arthritis in a Guinean hospital environment.

2. Patients and Methods

We conducted a descriptive cross-sectional study in the Rheumatology Department of the Ignace Deen National Hospital between January 2019 and June 2020. Patients followed for rheumatoid arthritis diagnosed according to the ACR/EULAR 2010 criteria [8] were included. For each patient, the clinical and paraclinical characteristics of rheumatoid arthritis were sought after a rheumatological examination and then the following data were collected: demographic (age, sex, diagnostic delay), clinical (number of painful joints, number of swollen joints, number of night awakenings, Visual Analogue Scale (VAS) which evaluates the intensity of the patient's pain on a scale of 0 (no pain) to 10 (unbearable pain)), extra-articular manifestations (fever, deterioration of general condition, renal, cardiac, pulmonary insufficiency, dry syndrome), biological (Erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), rheumatoid factors (RF), anti-nuclear antibodies, anti-ECT and anti-CCP antibodies). On standard radiography, soft tissue swelling, demineralization of bands, erosion and geodes according to the Steinbrocker score. Treatment: NSAIDs (nonsteroidal anti-inflammatory drugs), DMARDs (disease-modifying anti-rheumatic drugs), anti-TNF alpha, steroid injections. Disease activity was assessed by the Disease Activity Score (DAS28), which evaluates the activity of rheumatoid arthritis in 28 joints. Rheumatoid arthritis is considered in remission if $DAS\ 28 \leq 2.6$; mildly active if $2.6 < DAS\ 28 \leq 3.2$; moderately active if $3.2 < DAS\ 28 \leq 5.1$; and highly active if $DAS\ 28 > 5.1$. The Health Assessment Questionnaire (HAQ) assesses the functional impact of RA on the patients' quality of life. The score varies from 0 (patient maintains activities without difficulty) to 3 (patients unable to do activities). Ethical approval was obtained from the Research Ethics Committee of Gamal Abdel Nasser University in Conakry, Guinea, and the Research Ethics Committee of Ignace Deen University Hospital. All pa-

tients were informed and signed a consent form before inclusion in the study.

Data analysis was done using SPSS Statistics 21.0. Categorical variables were expressed as numbers and percentages. The mean and standard deviation were calculated for quantitative data.

3. Results

We collected sixty cases of rheumatoid arthritis from a total of 1064 patients during the study period, representing a hospital prevalence of 5.6%. The mean age of patients was 46.6 ± 17.3 years. Rheumatoid arthritis mainly affects adult women with 78.3%. More than half of the patients lived in urban areas (55%) (**Table 1**).

Table 1. Epidemiological characteristics of patients with rheumatoid arthritis.

	Effective	Percentage (%)
Sex		
Man	13	22
Women	47	78
Age group (years)		
<20	3	5
20 - 39	20	33.3
40 - 59	23	38.3
60 - 79	13	21.6
80 and over	1	1.6
Geographic location		
Urban area	33	55
Rural area	27	45

Average age = 46.6 ± 17.3 years. Ranges between 18 and 82 years.

The notion of familial rheumatism was the most reported antecedent (20%). Tobacco poisoning was noted in 7 patients (**Table 2**).

Table 2. History and comorbidities in patients with rheumatoid arthritis

	Effective (n = 60)	Percentage (%)
Overweight/obesity	8	13.3
Diabetes	4	6.6
HTA	6	10
Nephropathy	3	5
Heart disease	3	5
Concept of familial rheumatism	12	20
Alcohol	5	8.3
Tobacco	7	11.6
Dry eye syndrome	19	31.6

Table 3 shows the different clinical characteristics of functional joint symptoms. Polyarthritis was the mode of disease presentation in 86.6% of patients. The average diagnostic delay was 8.6 ± 7.5 years [1 month - 41 years]. Upon admission, we found in our series, on average, 10.4 ± 8.6 painful joints and 3.6 ± 4.8 swollen joints. Thirty-one patients, or 52%, already had deformities at admission. The most common deformity was ulnar deviation (**Figure 1**).



Figure 1. Joint deformities during RA in ulnar deviation. (Collection of the Rheumatology Department of the Ignace Deen National Hospital)

Table 3. Clinical characteristics in patients with rheumatoid arthritis.

	Effective	Percentage (%)	Mean \pm SD
Mode of revelation			
Polyarthritis	52	86.6	
Oligoarthritis	6	10	
Monoarthritis	2	3.3	
Morning rust removal			
<15 min	11	18.3	
15 - 30 min	18	30	
30 min - 1 h	20	33.3	
>1 h	11	18.3	
Night awakening			1.78 ± 1.7
Number of painful joints			10.45 ± 8.6
Number of swollen joints			3.6 ± 4.7
Deformations			
Present	31	52	
Absent	29	48	
Number of deformities per patient			
1 deformation	8	25.8	
2 - 4 deformations	13	41.9	
5 or more deformations	10	32.3	
Evolution of the disease			8.6 ± 7.5 years

Biologically, the inflammatory syndrome was almost constant with an accelerated sedimentation rate in 58 patients with a mean rate of 96.6 ± 27.9 [28 - 150] and an increased C-reactive protein in all examinations carried out with a mean rate of 26.6 ± 77.1 mg/l. Rheumatoid factors were present in 49 patients out of 60 or 81.6% and ACPA were present in forty-three patients out of 50 patients who had the examination or 86% with a mean rate of 267.2 U/ml.

Joint ultrasound was carried out in six patients and showed pannus (Szkudlarek Grade 3) and bone erosions. Standard radiographs in 47 patients were evaluated according to the Steinbrocker score. Stage I was found in 7 (14.9%) patients, stages II and III in 18 patients (38.29%) respectively and stage IV in 22 (46.8%) (**Figure 2**).



Figure 2. X-ray of the hands taking the wrists (frontal incidence): Band demineralization, joint space narrowing, ankylosis of the wrist bones, right radioulnar and left first proximal interphalangeal subluxation. (Collection of the Rheumatology Department of the Ignace Deen National Hospital)

Regarding therapeutic management, all patients received non-pharmacological treatment (information and therapeutic education) but also local symptomatic treatment for pain (gel or ointment). Ten patients (16.6%) received additional corticosteroid infiltration. Corticosteroids were prescribed in 54 patients (90%), including four cases in mini-bolus, and synthetic antimalarials in 38 patients (63.3%). Immunosuppressive treatment was administered in 6 patients on salazopyrine (10%), 12 patients on azathioprine (20%), and 34 patients on methotrexate (MTX) (56.66%). The main therapeutic combination was MTX and hydroxychloroquine (HCQ) with corticosteroids in 39 patients (65%). One patient was under biotherapy (1.66%) and physiotherapy was prescribed in 30 patients (50%). At reception, 63.4% of patients had moderate activity and 31.6% had high activity (**Table 4**). The functional impact assessed by the Health Assessment Questionnaire (HAQ) highlighted a clear deterioration in quality of life. At admission, the HAQ was on average 2.17 ± 0.24 [0.615 - 2.825] and at 6 months of treatment, 0.84 ± 0.68 [0.145 - 2.5].

Table 4. Distribution of patients with RA according to disease activity at reception and after 6 months of treatment.

	At the reception	After 6 months
RA in remission	0	14 (23.3%)
Low activity	3 (5.0%)	23 (38.4%)
Moderate activity	38 (63.4%)	21 (35%)
High activity	19 (31.6%)	2 (3.3%)
Total	60	100

The Average of the Visual Analogue Scale (VAS) on reception was $6.8/10 \pm 2.4$.

4. Discussion

This study focused on patients with rheumatoid arthritis whose socio-demographic, clinical and therapeutic characteristics were studied in the only rheumatology department in Guinea. Sixty cases of rheumatoid arthritis were collected out of a total of 1064 patients received during the study period, giving a hospital prevalence of 5.64%. This hospital frequency is higher than that reported in Burkina Faso [9], Togo [6] and Madagascar [10]. The high hospital frequency in our context could be explained by the influx of patients in the only rheumatology department which constitutes a center of attraction. The mean age of 43.05 ± 18.04 years was similar to the data in the literature [2] [10]-[12]. Women dominated with 56.63% of cases with a sex ratio M/F of 0.76. Female predominance had already been reported in Africa [12]-[15]. This result could be explained on the one hand by the preferential production of INF α in women and on the other hand by a reduction in the proliferation of B and T lymphocytes, a reduction in macrophage activity and a protective effect of testosterone [16]. The long diagnostic delay (8.6 years) was comparable to those in Senegal [2] and Togo [17]. This is linked to sociocultural factors (the doctor is sometimes consulted after marabouts and traditional healers) and socio-economic factors (poverty of the populations and lack of knowledge of the disease by some practitioners, delaying diagnosis and treatment). As described in the literature [14], Rheumatoid arthritis is the most common chronic inflammatory rheumatic disease. In Africa, similar frequencies are reported [18]. On the other hand, Kakpovi K *et al.* in Togo had reported a relatively low frequency (0.3%) [17]. This may be linked to poor access to care, a lack of medical education, and an environment without health insurance, particularly for people living in rural areas. The large number of deformities (32%) found is due to the delay in consultation, but also to the high cost of certain additional examinations. Given the inadequacy of our technical platform and the financial cost of the immunological test (anti-cyclic citrullinated peptide antibodies), a test which is still carried out abroad, some patients were unable to perform it. The activity of the disease, assessed by the DAS 28, showed that at reception 63.4% of patients had moderate activity and 31.6% high activity. Meanwhile, Ndongo S, in Senegal, found a DAS 28 of 6.8 [19]. The treatment was based on symptomatic

treatment and background treatment, sometimes accompanied by adjuvant treatments. Analgesics were limited to levels I and II. Only one patient benefited from anti-TNF alpha. The inaccessibility of these molecules in our context is an obstacle to disease management in patients whose remission is impossible with the use of DMARDs. Conventional background treatments were used to the detriment of biotherapies. The use of methotrexate is common in Africa [4] [5] [19]. Biotherapies are inaccessible in Guinea due to their high cost and the absence of a universal medical coverage system. The weakness of Biotherapy is a lack of management that should be remedied, given its importance in rheumatology [20]-[22].

5. Conclusion

RA is a common condition in rheumatology hospitals in Guinea. It is potentially serious because it can affect functional prognosis due to its deformities and vital prognosis due to its visceral damage. Methotrexate and other conventional disease-modifying treatments still have their place in our context.

Conflicts of Interest

The authors declare no conflicts of interest.

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