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Epidemiological and Diagnostic Profiles of Chronic Inflammatory Rheumatism in a Regional University Hospital in Burkina Faso: A Three-Year Study (2020~2023)

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Abstract

Objective: The objective is to describe the epidemiological and diagnostic profile of chronic inflammatory rheumatism (CIR) at the Ouahigouya Regional University Hospital. **Patients and Methods:** We conducted a descriptive cross-sectional study with retrospective data collection over a three-year period from April 1, 2020 to March 31, 2023. Patients received in rheumatology consultations or hospitalizations meeting the diagnostic criteria for chronic inflammatory rheumatism were included. **Results:** Forty patients were included in our study. There were 29 female patients and 11 male patients, resulting in a sex ratio of 0.37. The average age of patients was 46.05 ± 17.98 years, with extremes of 10 years and 76 years. The average disease duration was 29.87 ± 27.95 months, with extremes of 1 month to 120 months. Joint manifestations were mainly polyarthritis in 31 cases (77.5%) and polyarthralgia in eight cases (20%). Dermatological (17.5%), cardiovascular (12.5%) and haematological (10%) symptoms were the most frequent extra-articular symptoms. The pathological history was dominated by arterial hypertension in seven cases (17.5%), and diabetes mellitus in three cases (7.5%). The chronic inflammatory rheumatic diseases found were: rheumatoid arthritis in 24 patients (60%), indeterminate

chronic inflammatory rheumatism disease in five patients (12.5%), systemic lupus erythematosus in three patients (7.5%), spondyloarthritis in two patients (5%), systemic scleroderma in two patients (5%), dermatomyositis in one patient (2.5%), secondary Gougerot-Sjögren's syndrome in one patient (2.5%), remitting seronegative symmetrical synovitis with pitting edema (RS3PE) syndrome in one patient (2.5%) and acute rheumatic fever in one patient (2.5%). **Conclusion:** Our study shows that rheumatic fever is not rare in Ouahigouya. It is dominated by rheumatoid arthritis and indeterminate chronic inflammatory rheumatism diseases.

Keywords

Chronic Inflammatory Rheumatism, Rheumatoid Arthritis, Systemic Lupus Erythematosus, Sub-Saharan Africa

1. Introduction

Chronic inflammatory rheumatism (CIR) is a group of disorders that share joint manifestations and an autoimmune or autoinflammatory process as a pathogenic mechanism [1].

In Western countries, CIR is a public health problem. The prevalence of CIR in France is reported to be 1.55% [2]. Rheumatoid arthritis and spondyloarthritis are the most common CIR, each with a prevalence of 0.3% [3] [4].

Compared with the general population, CIR is associated with a high rate of morbidity and mortality [5] [6]. Mortality in CIR has been linked to cardiovascular, respiratory, and digestive diseases, as well as infections and cancers [5] [6]. These conditions can lead to varying degrees of functional disability [7].

In Sub-Saharan Africa, the available studies are predominantly hospital-based. CIR is likely underdiagnosed in these studies due to a scarcity of specialists and diagnostic resources, coupled with the limited financial means of the population [8]-[10]. Hospital-based studies in Togo and Guinea reported 290 cases over 9 years and 339 cases over 18 months, respectively [8] [11].

In Burkina Faso, a study conducted in the city of Ouagadougou identified 802 cases of CIR over a 14-year period [12]. The most prevalent CIRs were rheumatoid arthritis (434 patients, 51.61%), chronic indeterminate rheumatism (191 patients, 22.71%), systemic lupus erythematosus (71 patients, 8.44%) and spondyloarthritis (63 patients, 7.49 %) [12].

Rheumatology is a relatively new specialty in the northern region of Burkina Faso. The first rheumatology consultation at the regional university hospital in Ouahigouya took place on April 1, 2020. This hospital serves as the referral center for the northern region. Given the absence of prior studies on CIR in Ouahigouya, our work is of significant interest. The aim of our study was to investigate the epidemiological and diagnostic characteristics of chronic inflammatory rheumatism at the Ouahigouya regional university hospital.

2. Patients and Method

We conducted a descriptive cross-sectional study with retrospective collection from April 1, 2020 to March 31, 2023 in the rheumatology department of the Ouahigouya Regional University Hospital in Burkina Faso. Burkina Faso is a landlocked Sahelian country located in West Africa in the Niger loop. All patients meeting the diagnostic criteria for chronic inflammatory rheumatism were included. Patients with incomplete medical record of less than 75% and infectious, microcrystalline, endocrine, degenerative and paraneoplastic arthropathies were excluded. The data were collected using a survey form which included sociodemographic data, history, clinical data, immunological data (rheumatoid factors, anti-CCP antibodies, antinuclear antibodies, anti-native DNA antibodies, anti-ENA antibodies, anti-phospholipid antibodies), radiological data (standard X-ray, osteoarticular ultrasound, CT scan) and the final diagnosis. HLA B 27 typing was not sought in our study. Patient records were reviewed.

The diagnoses of rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), systemic scleroderma (SS), dermatomyositis (DM), polymyositis (PM), spondyloarthritis and Gougerot-Sjögren's syndrome (GSS) were based on the criteria set by the American College of Rheumatology (ACR) and the American College of Rheumatology/European League Against Rheumatism (ACR/EULAR) [13]-[18]. Remitting seronegative symmetrical synovitis with pitting edema (RS3PE) syndrome or benign acute oedematous polyarthritis of the elderly was adopted on the basis of the McCarty criteria [19]. The diagnosis of acute rheumatic fever (ARF) was based on the Jones criteria [20]. When no diagnostic criteria were met, the patient was considered to have indeterminate chronic inflammatory rheumatism. Autoantibodies were not tested in all patients.

Confidentiality of information was ensured by anonymising the data collection forms. The study was conducted in accordance with the ethical recommendations of the Declaration of Helsinki.

Data were entered and analysed using Epi Info 7.2.4.0 software.

3. Results

Forty patients were included in our study. There were 29 female patients (72.5%) and 11 male patients (27.5%) (sex ratio 0.37). The average age of patients was 46.05 ± 17.98 years, with extremes of 10 years and 76 years. Regarding marital status, 25 patients (62.5%) were married, 11 (27.5%) were single and 4 (10%) were widowed. These patients were housewives (32.5%), civil servants (27.5%), farmers (15%), informal sector workers (12.5%) and students (12.5%). The average disease duration was 29.87 ± 27.95 months, with extremes of 1 month and 120 months. The main reasons for consultation were arthritis in 77.5% of cases and arthralgia in 20%. **Table 1** summarises the distribution of patients according to the reason for consultation. The pain was inflammatory in 37 patients (92.5%), mechanical in two patients (5%) and mixed in one patient (2.5%). Extra-articular manifestations were primarily dermatological (17.5%), cardiovascular (12.5%) and haematologi-

cal (10%). Table 2 shows the distribution of patients according to extra-articular manifestations.

Table 1. Distribution of patients according to the reason for consultation.

	Total	Percentage
Polyarthritis	31	77.5
Polyarthralgia	8	20
Rachialgia	6	15
Buttock Pain	2	5
Oligoarthralgia	1	2.5

Table 2. Distribution of patients according to extra-articular manifestations.

	Total	Percentage
Dermatological	7/40	17.5
Erythema	3/7	42.86
Cutaneous Sclerosis	2/7	28.57
Rheumatoid Nodule	1/7	14.28
Alopecia	1/7	14.28
Cardiovascular	5/40	12.5
Cardiac Dyspnea	1/5	20
Palpitation	1/5	20
Heart Failure	1/5	20
Raynaud's Phenomenon	2/5	40
Haematological	4/40	10
Adenopathy	2/4	50
Anemia	2/4	50
Neuropsychiatric	3/40	7.5
Headaches	2/3	66.67
Convulsion	1/3	33.33
Respiratory	2/40	5
Cough	1/2	50
Pulmonary Dyspnea	1/2	50
Digestive	1/40	2.5
Dysphagia	1/1	100
Muscular	1/40	2.5
Myositis	1/1	100

A family history of CIR was found in two patients (Rheumatoid arthritis in a

mother and Rheumatoid arthritis in a sister). Other pathological antecedents and comorbidities were arterial hypertension in seven patients (17.5%), diabetes mellitus in three patients (7.5%), HIV infection (2.5%), dysthyroidism (2.5%) and recurrent angina (2.5%).

Joint deformities were observed in eight patients, all diagnosed with rheumatoid arthritis (40%). Destructive radiographic lesions (erosion, carpitis) were noted in 14 patients (35%). 12 of the 14 patients had rheumatoid arthritis.

The chronic inflammatory rheumatism found was rheumatoid arthritis in 24 patients (60%), indeterminate chronic inflammatory rheumatism in five patients (12.5%), and systemic lupus erythematosus in three patients (7.5%). Table 3 shows the distribution of patients by type of chronic inflammatory rheumatism.

Table 3. Distribution of patients by type of chronic inflammatory rheumatism.

	Total	Percentage	Average Age	Type Gap	Sex Ratio (Male/Female)
Rheumatoid Arthritis	24	60	47.96	16.55	0.41
ICIR*	5	12.5	65.2	5.49	0.25
Systemic Lupus Erythematosus	3	7.5	31.33	3.3	0/2
Systemic Scleroderma	2	5	32.5	2.5	0/2
Spondyloarthritis**	2	5	39.5	5.5	1
Dermatomyositis	1	2.5	15	0	0/1
Secondary Gougerot-Sjögren's Syndrome	1	2.5	15	0	0/1
RS3PE Syndrome***	1	2.5	66	0	0/1
Acute Rheumatic Fever	1	2.5	10	0	0/1

Note: *ICIR: Indeterminate chronic inflammatory rheumatism; **Spondyloarthritis (ankylosing spondylitis, reactive arthritis); ***RS3PE: Remitting seronegative symmetrical synovitis with pitting edema.

4. Discussion

We reported 40 cases of CIR over three years. The main CIRs encountered in our series were rheumatoid arthritis, indeterminate chronic inflammatory rheumatism, systemic lupus erythematosus, systemic scleroderma and spondyolarthritis.

The epidemiological, sociodemographic and diagnostic characteristics of the patients included in our study were similar to those of other African series [8] [11] [12] [21].

Similar to our findings, CIR seems to be less frequent in Sub-Saharan Africa, as reported in hospital-based studies [8] [11] [12] [21]. Our data are significantly lower than the prevalence reported in France [2]. This could be explained by the fact that CIR is under-diagnosed in Africa due to a lack of specialists, diagnostic resources, poverty and reliance on traditional medicine.

Rheumatoid arthritis was the most common form of CIR and was noted in 24 patients in our study. This finding is similar to both African and European studies [8] [11] [12] [21] [22]. The African studies found 434 cases of rheumatoid arthritis in 14 years in Ouagadougou, 119 cases in 9 years in Lomé and 108 cases in 18 months in Conakry [8] [11] [12]. In population-based studies in Africa, the prevalence of rheumatoid arthritis is 0.13% in Algeria, 0.6% in the Democratic Republic of Congo and 0.9% in the black population of South Africa [23]-[25]. This disparity in frequency could be due to differences in methodology, the duration of the different studies and the cultural and geographical diversity in Africa.

Systemic scleroderma appeared to be rare in Ouahigouya. Our data are corroborated by other African series [8] [11] [21]. On the other hand, Erzer *et al.* showed in a meta-analysis that 1884 patients with systemic scleroderma in Sub-Saharan countries, 66% of whom were from South Africa [26]. The majority of publications came from South Africa. Systemic scleroderma is not rare in Sub-Saharan African countries, but its presentation differs from that of Caucasians [26]. The presentation of systemic scleroderma in Sub-Saharan Africa differs from that reported in Europe and America by frequent diffuse skin involvement, focal skin hypopigmentation and a high prevalence of anti-fibrillarin autoantibodies [26]. The majority of patients (66%) were reported in South Africa.

Benign oedematous acute polyarthritis of the elderly or RS3PE syndrome was found in a 66-year-old male patient. This chronic inflammatory rheumatism has not been observed in other African series [8] [9] [11] [12] [21]. RS3PE syndrome is a rare chronic inflammatory rheumatic disease that occurs in people over 65 years of age, with a male predominance [27]. Its pathophysiology is unknown, but a number of hypotheses have been put forward. On the one hand, the decrease in suppressive/cytotoxic T cells and the increase in circulating Th1 cells are likely to promote the development of inflammation [28]. The finding that VEGF levels are higher than in healthy subjects should also be taken into account [27]. VEGF induces synovial inflammation and vascular permeability; this may account for the distal oedema that is so characteristic of this syndrome [29].

Our study is limited by our methodology. Retrospective data collection and monocentric recruitment expose us to recruitment bias. The use of traditional medicine and the management of CIR by other specialties may also introduce us to a possible bias in the recruitment of our patients. The impossibility of carrying out immunological examinations and magnetic resonance imaging (MRI) in Ouahigouya, coupled with the limited resources of the population, meant that a certain number of CIR could not be fully explored. However, further studies, particularly in population-based studies, are needed before the results can be generalised.

5. Conclusion

Chronic inflammatory rheumatism is not rare in the town of Ouahigouya. They are numerous and diverse. This study also reflects the diagnostic problems caused

by the unavailability of immunology laboratories in the town of Ouahigouya. Rheumatoid arthritis and indeterminate chronic inflammatory rheumatism were the most common CIR. Population studies are needed to gain a better understanding of the different CIRs.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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