

Chronic Inflammatory Rheumatic Diseases in Rheumatological Practice in Lomé (Togo)

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Abstract

Chronic inflammatory rheumatism is a pathology of variable frequency and severity with a significant impact on the socio-economic, personal and family level. **Study Aim:** To describe the epidemiological, clinical, laboratory, radiological, therapeutic and evolutive features of chronic inflammatory rheumatic diseases in rheumatological practice in Togo. **Patients and Methods:** This was a multicenter cross-sectional study conducted from January 2011 to December 2019 on patients examined in the three rheumatology departments in Lomé (Togo). Patients 18 years old and above who have presented joint pain with or without synovitis, and/or rachialgia (back pain) for at least three months were included. The diagnosis of chronic inflammatory rheumatic diseases was made according to international consensus criteria. **Results:** Out of the 20333 patients whose files were collected during our study period, 290 (1.43%) suffered from chronic inflammatory rheumatic diseases. There were 226 (77.93%) females and 64 (22.07%) males. The mean age of the patients was 42.79 ± 15.18 years. The mean duration of symptoms was 40.80 ± 54.09 months. Arthritis (67.24%) was the main reason for consultation, followed by joint pain (31.38%). rheumatoid arthritis (41.03%), unclassified chronic inflammatory rheumatic diseases (38.62%), spondyloarthropathies (15.17%) and systemic lupus erythematosus (2.41%) were the major clinical forms. The immunological tests performed in 13.79% of cases were positive in 52.94% of cases. Carpalitis (57.55%) and diffuse osteoporosis (45.28%) were the commonest radio-

graphic features of the hands. 289 patients (99.66%) received symptomatic treatments such as NSAIDs (73.36%) and corticosteroids (51.90%) and 90 patients (31.03%) were treated with synthetic DMARDs such as methotrexate (88.89%). The outcome was favorable in 27.93% of cases. **Conclusion:** Chronic inflammatory rheumatic diseases are common diseases in rheumatological practice in Togo that deserve special attention. The establishment of a specialized immunology laboratory could be very useful for the diagnosis and early management of these diseases.

Keywords

Chronic Inflammatory Rheumatic Diseases, Rheumatoid Arthritis, Spondyloarthropathies, Sub-Saharan Africa

1. Introduction

Chronic inflammatory rheumatic diseases (CIRDs) are conditions that exhibit an autoimmune and/or autoinflammatory process as pathogenic mechanism. They constitute a public health issue in developed countries [1] [2]. In sub-Saharan Africa, few epidemiological studies have been devoted to them. Most studies were conducted in urban areas and were the result of hospital consultations [3] [4]. Very little information is available about these diseases due to the scarcity of studies conducted on them, which might also be associated to the poor coverage of the African continent in terms of physician specialists and well equipped rheumatology and immunology units [5] [6]. In Togo, most studies on CIRD were monocentric and focused either on CIRDs in general or on one particular CIRD [7] [8] [9] [10] [11]. The scarcity of epidemiological surveys explains the fragmentary nature of the data currently available. The aim of our work was to determine in a larger population of rheumatic patients, the distribution as well as the epidemiological, clinical, laboratory, radiological, therapeutic and evolutive features of the different CIRDs observed in the rheumatology units of Lomé.

2. Patients and Methods

This was a multicenter, cross-sectional study on patients' files, conducted from January 1, 2011 to December 31, 2019 in the rheumatology units of Lomé: *CHU Sylvanus Olympio* (Sylvanus Olympio Teaching Hospital), *CHR Lomé-Commune* (Lomé-Commune Regional Hospital) and *Hôpital de Bè* (Bè Hospital). The study was approved by the ethics committee. Patients who have been suffering from inflammatory rheumatic diseases for more than three months were included in the study. Patients who were suffering from osteoarthritis, infectious arthritis, metabolic and endocrine arthropathies, and arthropathies related to hematologic diseases were not included in the study. The medium for collecting information was an individual information sheet with the following parameters studied: so-

ciodemographic data (age, sex, occupation, place of residence, socioeconomic level), medical history, clinical data (reason for consultation, general signs, physical signs), laboratory and radiological data (erythrocyte sedimentation rate (ESR), full blood count (FBC), creatinine, hemoglobin electrophoresis, Human Immunodeficiency Virus (HIV) serology, radiographs of painful joints and frontal lungs radiographs), diagnostic criteria (rheumatoid arthritis (ACR/EULAR 2010 criteria [12]); spondyloarthritis (modified New York criteria [13]), systemic lupus erythematosus (ACR 1982/1997 [14], systemic scleroderma (criteria of systemic sclerodermia [15]), polymyositis (criteria of Hoogendijk [16]), Adult Still's disease (criteria of Fautrel [17]), Psoriasis arthritis (criteria of CASPAR 2006 [18]), Reactive arthritis (any episode of peripheral arthritis associated with an underlying infection (conjunctivitis, urethritis, cervicitis)); patients who did not meet these criteria were classified as having undifferentiated chronic inflammatory rheumatic diseases (UCIRD)), therapeutics used (corticosteroids, NSAIDs, analgesics, synthetic Disease Modifying Anti Rheumatic Drugs (DMARDs); no patient received biotherapy) and evolutive data (clinical course). Some patients underwent immunological testing: rheumatoid factor, anti-cyclic citrullinated peptide antibody (anti-CCP), screening and identification of antinuclear antibodies (ANA). HLA typing was not performed in any patient.

Fever was defined as body temperature above or equal to 38° celsius. The patient's general appearance was described as ill when there was fatigue, anorexia, weight loss, and pallor, or at least two of these symptoms. Anaemia was defined as a hemoglobin level below 10 g/dl; leukocytosis was defined as a white blood cell count of more than 10,000 per mm³ on the FBC, while leukopenia was defined as a white blood cell count below 4000 per mm³; thrombocytosis and thrombocytopenia were defined as a platelet count above 400,000 per mm³ and below 150,000 per mm³ respectively. The ESR was considered accelerated when above 20 mm at the first hour. C-reactive protein level was considered high for a value above 6 mg/L. Anti-nuclear antibodies were considered high when the titer is above 160 IU/ml. Rheumatoid factor, anti-cyclic citrullinated peptide (anti-CCP) antibodies and anti-Ro antibodies were considered positive when titer is above 10 IU/ml. Anti-native DNA were positive when titer is above 15 IU/ml. Anti-Jo1, anti-La and anti-Scl70 were considered positive when titer is above 7 IU/ml. Anti-RNP was positive when titer is above or equal to 5 IU/ml. Data analysis was performed using Epi Info software version 7.2.3.1.

3. Results

Out of the 20333 patient files collected during our study period, 290 patients suffered from CIRD, with an incidence of 1.43%. They comprised 226 females (77.93%) and 64 males (22.07%) (**Table 1**). Their mean age at consultation was 42.79 ± 15.18 years. The mean duration of the symptoms before consultation was 40.80 ± 54.09 months. Sixty patients (20.69%) had a personal medical history (high blood pressure (51.67%), diabetes (25%), ulcer (13.33%), sickle cell

Table 1. Socio-demographic data of patients with chronic inflammatory rheumatism.

| | Number of patients | Percentage |
|--------------------------------|--------------------|------------|
| Sex | | |
| Female | 226 | 77.93 |
| Male | 64 | 22.07 |
| Residential area | | |
| Urban | 238 | 82.07 |
| Rural | 52 | 17.93 |
| Niveau socio-économique | | |
| Low | 213 | 73.45 |
| Medium | 72 | 24.83 |
| High | 5 | 1.72 |
| Statut matrimonial | | |
| Married | 177 | 61.03 |
| Single | 72 | 24.83 |
| Widower | 26 | 8.97 |
| Divorced | 15 | 5.17 |
| Occupation | | |
| Trader | 166 | 57.24 |
| Civil servant | 57 | 19.66 |
| Student | 36 | 12.42 |
| Housewife | 22 | 7.59 |
| Farmer | 9 | 3.1 |

anemia (5%), HIV infection (3.33%), asthma (1.67%) and five (1.72%) had a family history of chronic inflammatory rheumatism. Arthritis (67.24%) was the first reason for consultation, followed by joint pain (31.38%) and large joints were the most affected in 60.49% (**Table 2**). Knees (59.31%), wrists (54.48%) and ankles (49.31%) are the joints commonly affected. joint deformities were observed in 18.97% of cases with a clear predominance of patients suffering from rheumatoid arthritis (33.61%). Ulnar finger cupping (40%) and buttonhole fingers (21.82%) were the most observed deformities (**Figure 1**). The extra-articular features were mostly dermatological manifestations (52.83%) and pulmonary involvement (28.30%) (**Table 3**). The ESR was accelerated in 87.60% of cases and the C-reactive protein was elevated in 50.62% of cases. The immunological tests performed in 13.79% of cases were positive in 52.94% of cases. Rheumatoid factor performed by 31 patients (77.50%) was positive in 54.84% of cases and Anti-citrullinated cyclic peptides, performed by 24 patients (60%) were positive

Table 2. Distribution of patients according to clinical features of chronic inflammatory rheumatic diseases (CIRD).

| | Number | Percentage |
|-----------------------------|--------|------------|
| Reasons for consultation | | |
| - Arthritis | 195 | 67.24 |
| - Joint pain | 91 | 31.38 |
| - Rachialgia | 34 | 11.72 |
| - Functional impotence | 11 | 3.79 |
| Inflammatory pain timeline | 277 | 95.52 |
| Progressive onset | 260 | 89.66 |
| Ill general appearance | 149 | 51.38 |
| Fever | 49 | 16.90 |
| Joint damage | 286 | 98.62 |
| - Large joints | 173 | 60.49 |
| - Mixed | 105 | 36.71 |
| - Small joints | 8 | 2.80 |
| - Bilateral and symmetrical | 180 | 74.69 |
| - Bilateral and asymmetric | 61 | 25.31 |
| Extra-articular involvement | 106 | 52.83 |
| Joints deformities | 55 | 18.97 |

Table 3. Distribution of patients according to extra-articular features.

| | Number (n/N) | Percentage (%) |
|----------------------|---------------|----------------|
| Dermato-mucosal | 56/106 | 52.83 |
| Alopecia | 20/56 | 35.71 |
| Erythema of the skin | 16/56 | 28.57 |
| Oral ulceration | 9/56 | 16.07 |
| Cutaneous sclerosis | 3/56 | 5.36 |
| Rheumatoid nodules | 2/56 | 3.57 |
| Skin achromia | 2/56 | 3.57 |
| Psoriasis | 1/56 | 1.78 |
| Malar Rash | 1/56 | 1.78 |
| Eschar | 1/56 | 1.78 |
| Raynaud | 1/56 | 1.78 |
| Respiratory | 30/106 | 28.30 |
| Dyspnea | 14/30 | 46.67 |

Continued

| | | |
|-------------------------|---------------|--------------|
| Cough | 12/30 | 40.00 |
| Chest pain | 4/30 | 13.33 |
| Ocular | 21/106 | 19.81 |
| Conjunctivitis | 19/21 | 90.48 |
| Glaucoma | 1/21 | 4.76 |
| Keratitis | 1/21 | 4.76 |
| Digestive | 19/106 | 17.92 |
| Dysphagia | 8/19 | 42.10 |
| Diarrhea | 6/19 | 31.58 |
| Odynophagia | 3/19 | 15.79 |
| Vomiting | 1/19 | 5.26 |
| Gastroesophageal reflux | 1/19 | 5.26 |
| Urogenital | 17/106 | 16.04 |
| Urethritis | 8/17 | 47.06 |
| Leukorrhea | 7/17 | 41.18 |
| Hematuria | 1/17 | 5.88 |
| Dysuria | 1/17 | 5.88 |
| Hematological | 5/106 | 4.72 |
| Adenopathy | 3/5 | 60.00 |
| Anemia | 2/5 | 40.00 |
| Myalgia | 1/106 | 0.94 |
| Sjogren's syndrome | 1/106 | 0.94 |

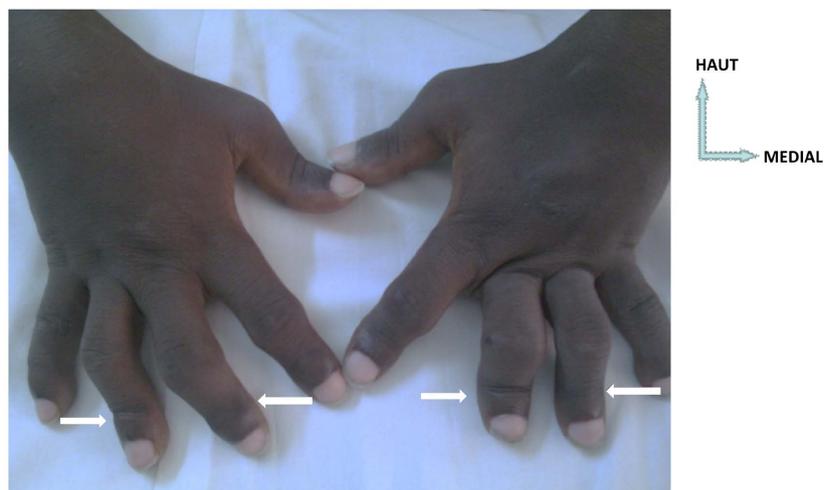


Figure 1. Buttonhole deformities of the 3rd and 4th fingers in a patient suffering from rheumatoid arthritis (white arrows).

in 58.33% of cases (**Table 4**). Carpalitis (57.55%) and osteoporosis (45.28%) were the main radiographic lesions observed (**Figure 2**). Rheumatoid arthritis (41.03%), undifferentiated chronic inflammatory rheumatic disease (UCIRD) (38.62%), spondyloarthritis (SpA) (15.17%) and systemic lupus erythematosus (2.41%) were the common clinical forms. The average age at consultation of the 119 patients (41.03%) with rheumatoid arthritis was 46.68 ± 14.73 and their average duration of evolution was 53.33 ± 55.06 months (**Table 5**). 289 patients



Figure 2. Frontal X-ray of the hands taking the wrists of a patient suffering from rheumatoid arthritis showing bilaterally a demineralization, erosions of the articular surfaces of the carpus bones, a global pinching of the radiocarpal space, a pinching of the spaces located between the various carpus bones leading to a fusion of the carpus bones realizing the image of fusing carpal tunnel (white arrows).

Table 4. Distribution of patients according to positivity of the immunological markers.

| | Positive | | Negative | | Totals | |
|-------------------|----------|-------|----------|--------|--------|-------|
| | N | % | N | % | N | % |
| Rheumatoid Factor | 17 | 54.84 | 14 | 45.16 | 31 | 77.50 |
| Anti-CCP* | 14 | 58.33 | 10 | 41.67 | 24 | 60.00 |
| ANA α | 3 | 33.33 | 6 | 66.67 | 9 | 22.50 |
| Anti-DNA natives | 3 | 42.86 | 4 | 57.14 | 7 | 17.50 |
| Anti-RNP** | 2 | 66.67 | 1 | 33.33 | 3 | 7.50 |
| Anti-Scl70*** | 2 | 66.67 | 1 | 33.33 | 3 | 7.50 |
| Anti-Sm**** | 2 | 66.67 | 1 | 33.33 | 3 | 7.50 |
| Anti-La | 1 | 50.00 | 1 | 50.00 | 2 | 5.00 |
| Anti-Ro | 1 | 50.00 | 1 | 50.00 | 2 | 5.00 |
| Anti-Jo1 | 0 | 0.00 | 1 | 100.00 | 1 | 2.50 |

*Anti-citrullinated cyclic peptides; **Anti-Ribonucleoprotein; ***Anti-topoisomerase I; ****Anti Smith; α Anti-Nuclear Antibodies.

Table 5. Distribution of patients according to their diagnosis.

| | Number (%) | Sex ratio (M/F) | MAP ^a ± SD* (years) | MTP ^o ± SD* (months) |
|------------------------|-------------|--------------------|-----------------------------------|------------------------------------|
| Rheumatoid arthritis | 119 (41.03) | 8/111 | 46.68 ± 14.73 | 53.33 ± 55.06 |
| UCIRD*** | 112 (38.62) | 30/82 | 41.81 ± 15.66 | 30.27 ± 46.05 |
| Reactive arthritis | 23 (7.93) | 9/14 | 40.52 ± 12.69 | 10.86 ± 13.61 |
| Ankylosing spondylitis | 20 (6.90) | 15/5 | 34.65 ± 14.64 | 62.5 ± 85.74 |
| SLE** | 7 (2.41) | 1/6 | 32.71 ± 8.51 | 36.71 ± 36.02 |
| Systemic scleroderma | 4 (1.38) | 0/4 | 34.24 ± 13.15 | 15.75 ± 14.15 |
| Adult Still's disease | 2 (0.69) | 1/1 | 28 | 116 |
| Polymyositis | 2 (0.69) | 0/2 | 34 | 19 |
| Psoriasis arthritis | 1 (0.34) | 0/1 | 56 | 12 |

*Standard deviation; **Systemic lupus erythematosus; ***Undifferentiated Chronic Inflammatory rheumatic diseases; ^aMean age at presentation; ^oMean time of progression.

(99.66%) received symptomatic treatments namely NSAIDs (73.36%) and corticosteroids (51.90%), and 90 patients (31.03%) received synthetic DMRDs, mostly methotrexate (88.89%). The mean follow-up time was 13.36 ± 13.12 months (extremes: 1 and 42 months). One hundred and seventy-one patients (58.97%) were lost to follow-up. The evolution was favorable in 81 patients (27.93%) and unfavorable in 37 patients (12.76%). The only case of death (0.34%) recorded in our series occurred as a result of septic shock.

4. Discussion

We observed 290 cases of CIRD among the 20333 patients examined in nine years. Rheumatoid arthritis (RA), UCIRD, SpA and systemic lupus erythematosus (SLE) were the commonest CIRDs observed in Lome. Rigorous interpretation of these results requires taking into account the shortcomings related to selection bias and limited technical platform. This was a hospital-based study which only took into account patients examined in rheumatology units, thus constituting a bias which makes it impossible to generalize our results. The limited technical platform (absence of an immunology laboratory) did not allow us to specify the nature of some inflammatory rheumatic diseases. On the other hand, not all rheumatic patients consult the health centers because of the frequent recourse to traditional healers. However, the shortcomings of our study do not affect its epidemiological importance. In our study, incidence of CIRD in hospital setting was 1.43%. This rarity of CIRD in our context can be explained by several reasons: inaccessibility to health facilities, the clinical polymorphism of these pathologies and the lack of medical specialists. The demographic, clinical, laboratory and radiological features in our sample are similar to other African studies [19] [20] [21] [22]. RA is the most frequent CIRD in our sample. Its peculiarity

is the predominance of erosive deforming forms with a higher activity of the disease, mostly due to delays in diagnosis [9]. It represents 41.03% of all CIRDs, ahead of UCIRD and SpA. Similar results have been reported in other Western and Central African countries [21] [23]. This result contrasts with other African studies where SpA was at the first [19] [22] or second [24] [25] position after UCIRD. This high frequency of UCIRD is due to the limited technical platform on the one hand, and on the other hand to the low income level of the population whose financial means do not allow them to afford immunological tests, at often very high costs. In Congo-Brazzaville, the establishment of a specialized immunological medical laboratory has made it possible to perform immunological tests on all the 90 patients [26]. In contrast to Caucasian SpA, which are dominated by ankylosing spondylitis, reactive arthritis is the primary entity of this group in sub-Saharan Africa due to the high frequency of endemic infectious diseases in tropical areas and the poor community and individual hygiene measures [22]. The rarity of the HLA-B27 gene susceptibility is commonly recognized in black people, regardless of continent [27]. Although a relation between HIV infection and reactive arthritis or psoriatic arthritis is sometimes observed, its low frequency does not allow HIV infection to be considered as risk factor for SpA in Africa [28].

The other connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, Still's disease, polymyositis) are relatively rare in sub-Saharan Africa [8] [10] [29] [30] [31]. The frequent prescription of methotrexate could be explained on the one hand by the affordable cost and the availability of the drug in our areas and on the other hand by the high frequency of RA, methotrexate being the first-line background treatment in the management of RA according to the 2018 recommendations of the French Society of Rheumatology [32]. No patient has been treated with biotherapy, although the efficacy of biological DMARDs has been demonstrated in developed and developing countries [33]. Difficulties in its access, high cost and major side effects including high risk of infection could explain this.

5. Conclusion

Chronic inflammatory rheumatic diseases are common diseases in rheumatological practice in Togo and deserve special attention. The establishment of a specialized immunology laboratory would be very useful for diagnosis and for early management of these diseases.

Conflicts of Interest

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

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