

# Etiology of Arthritis in Lomé (Togo)

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## ABSTRACT

**Aim:** Determine the frequency and respective proportion of the various etiological forms of arthritis in Lomé (Togo). **Patients and Methods:** Transversal study carried out over 15 years on files of arthritis infected patients and submitted to rheumatologic consultation. **Results:** 1081 out of 13,517 patients examined (8%) were suffering from arthritis. Those 1081 patients (456 women, 42.2% and 625 men, 57.8%) were in average 38 years old and enjoyed an average duration of evolution of three years. The chronic inflammatory rheumatisms (CIR) (602 cases, 56.9%), the metabolic arthropathies (233 cases, 22%) and the infections (198 cases, 16.6%), were the main etiologies that were observed. The average age of 198 patients with infectious arthritis was 36 years and the average duration of 9 months. Infectious arthritis was preferably located at the knee (34.3%), and was essentially caused by a banal germ (157 patients; 79.3%) and associated with HIV in 25 patients (15.9%). The remaining 233 patients (9 women, and 224 men) suffering from metabolic arthritis were in average 52 years old and enjoyed an average duration of evolution of five years. The chronic inflammatory rheumatisms were mainly represented by spondyloarthropathies (90 cases, 14.9%) and the arthritis rheumatoid (64 cases, 10.6%). 399 out of 602 cases of the CIR were not classified while 52 cases were associated with HIV. The connective tissue diseases were dominated by the polymyositis (9 cases, 18.7%). **Conclusion:** The chronic inflammatory rheumatisms were the first causal form of arthritis in rheumatologic consultation in Lomé.

**Keywords:** Black Africa; Arthritis; Etiology of Arthritis

## 1. Introduction

Arthritis is a common reason for consultation in rheumatology [1-3]. In the Sub-Saharan Africa, little epidemiological research has been devoted to arthritis [2,4,5]. The infectious disease is still common in sub-Saharan Africa because of the underdevelopment and poor hygiene. The reputation of the extreme rarity of gout in sub-Saharan Africa was contradicted by the work undertaken over the last 30 years [6]. The Spondyloarthropathies (SPA), in particular ankylosing spondylitis is rare in Africa and the link between HIV and the SPA in this region seems now well known [7]. Rheumatoid arthritis (RA) is frequent in Eastern and Southern Africa while in West and Central Africa it seems rare [8]. Systemic lupus erythematosus (SLE) is deemed rare in black Africa unlike scleroderma which seems frequent [8]. The studies conducted in hospitals focused on relatively small samples [4,5,9,10]. The aim assigned to this study was to determine in a large population suffering from rheumatism, the respective proportion of the different etiological forms

of arthritis during a rheumatologic consultation in Lomé (Togo).

## 2. Patients and Methods

It has been a transversal study conducted from October 1989 to December 2005 of which the subject matter was to focus on the files of the patients suffering from arthritis and seen in clinical consultation of rheumatology. This springs from the study of a series of case records of patients admitted in the Department of Rheumatology, University Hospital Sylvanus Olympio, of Lomé, Togo's capital. The patients suffering from congestive osteoarthritis were not part of the sample study. The demographic (sex, age of the patient at diagnosis), clinical (arthritis characteristics, systemic manifestations associated), and paraclinical (radiographic, biologic, immunologic) data of patients were collected from their records. The patients suffering from gout perfectly answered to the criteria of ARA [11]. The spondyloarthropathies answered the criteria of Amor [12] and the rheumatoid arthritis pa-

tients on their side answered to the criteria of ACR [13]. The connective tissue diseases on their part answered to the various diagnostic criteria. The positive diagnosis of the infectious arthritis has essentially been radio-clinical. The infection has been considered as certain in case of isolation of the causal germ in the organism or due to the underlining of evocative historical lesions in the suspected site. Otherwise, it was probable. Each patient has been the subject of a radiographic test of the infected part, of a hemogram, of a measurement of the speed of sedimentation, creatinine, and of a retroactive serology. A plasma creatinine greater than 115  $\mu\text{mol/L}$  was considered as evidence of renal failure. The overweight has been defined as a corporal mass index (CMI) higher than 25  $\text{kg/m}^2$  while obesity is defined as a CMI higher than 30  $\text{kg/m}^2$ . The immunologic tests undertaken had not been systematically conducted because of economic and technical limitations.

### 3. Results

#### 3.1. General Characteristics of the Patients

One thousand and eighty one of the 13.517 patients examined (8%) were suffering from arthritis. Those 1081 patients (made up of 456 women, 42.2%; and 625 men, 57.8%) were about 38 years old at the beginning of the disease and enjoyed an average duration of evolution of three years. The chronic inflammatory rheumatism (602 cases, 55.7%) and the metabolic arthropathies (233 cases, 21.6%), were the main etiologies of arthritis observed in Lomé (**Table 1**).

#### 3.2. Chronic Inflammatory Rheumatisms (CIR)

The average age of the patients suffering from chronic inflammatory rheumatism was 34.6 year old while the average duration of evolution is 2.2 year. The chronic inflammatory rheumatism were essentially represented by: the spondyloarthropathies (90 cases, 14.9%), the rheumatoid arthritis (64 cases, 10.6%), and the juvenile chronic arthritis (10 cases, 1.66%) (**Table 2**). Out of the 602 cases of CIR 399 cases were not classified. The 399 cases of CIR Unclassified fell into 295 cases (73.9%)

**Table 1. Distribution of arthritis according to different clinical forms of arthritis.**

	Number of cases	Percentage
Chronic inflammatory rheumatism	602	55.7
Metabolic arthropathies	233	21.6
Arthritis infectious	198	18.3
Connective tissue diseases	48	4.4
Total	1081	100

**Table 2. Demographic data of the patients infected with inflammatory rheumatism and the connective tissue diseases according to the diagnosis.**

	Number (%)	Sex W/M*	Age (years) $m \pm ET^{**}$
Unclassified CIR***	399(63.7)	226/173	36.9 $\pm$ 14.5
Rheumatoid arthritis	62 (9.9)	52/10	41.8 $\pm$ 18.2
Unclassified spondyloarthropathies	53 (8.5)	7/46	34.4 $\pm$ 10.1
Unclassified connective tissue	26 (4.2)	23/03	34.9 $\pm$ 15.3
Ankylosing spondylitis	22 (3.5)	0/22	32.5 $\pm$ 7.6
Reactional arthritis	17 (2.7)	08/09	34.7 $\pm$ 10.2
Polymyositis	09 (1.4)	07/02	39.4 $\pm$ 09.5
Chronic juvenil arthritis	07 (1.1)	02/05	08.8 $\pm$ 04.9
SLE****	07 (1,1)	07/00	42.6 $\pm$ 08.2
Scleroderma	06 (0.9)	04/02	40.8 $\pm$ 13.5
Horton disease	05 (0,8)	04/01	63.5 $\pm$ 20.1
Dermatomyositis	04 (0.6)	02/02	35.3 $\pm$ 12.7
Still disease	03 (0,5)	02/01	29.0 $\pm$ 18.7
Unclassified vasculitis	03 (0.5)	01/02	39.0 $\pm$ 32.5
Rheumatic fever	02 (0.3)	01/01	18.0 $\pm$ 14.1
Psoriatic rheumatism	01 (0.1)	00/01	45.0 $\pm$ 00.0
Total	626 (100)	346/280	36.9 $\pm$ 14.9

\*Women/Men, \*\* average  $\pm$  standard deviation, \*\*\* unclassified chronic inflammatory rheumatism, \*\*\*\*Systemic lupus erythematosus.

of chronic polyarthritis, 80 cases (20.1%) of isolated oligoarthritis and 24 cases (6%) of isolated mono-arthritis. These 295 patients with chronic polyarthritis had an average age of 37.2 years and the average duration of the disease was 3 years. The chronic polyarthritis were characterized by the absence of deformation, joint destruction and systemic manifestations. The isolated oligoarthritis was sensitive to anti-inflammatory non-steroidal and had no radiological destruction. The 62 patients with rheumatoid arthritis had an age between 27 and 70 years. The average duration of evolution ranged from 3 months to 23 years. A distal joints location was observed in all patients (**Table 3**). The most frequent clinical forms of spondyloarthropathies were the ankylosing spondylitis (22 cases) and the reactional arthritis (17 cases). The chronic inflammatory rheumatism were associated with HIV in 52 patients (spondyloarthropathies: 22 cases of which 17 cases of reactional arthritis, not classified inflammatory rheumatism: 22 cases and rheumatoid arthritis: two cases).

The connective tissue diseases were dominated by the polymyositis (9 cases, 18.7%), the systemic lupus erythematosus (7 cases, 14.6%), and the scleroderma (6 cases,

**Table 3. Clinical and paraclinical manifestations observed in 62 patients with rheumatoid arthritis.**

	Number	Percentage
Distal joint location	62	100
Coxitis	4	6.5
Cervical spine affected	5	8.1
Erythrocyte sedimentation rate $\geq$ 20 mm (ranged from 25 to 131 mm in the first hour)	62	100
Present of a rheumatoid factor in 40 patients explored	25	40.3
Present of bilateral carpalis	43	69.3
Present of a demineralization in band of the hands and wrists	19	30.6

12.5%). The symptomatology of 13 patients with polymyositis-dermatomyositis was dominated by muscle weakness (13 cases), myalgia (10 cases), arthralgia and swelling of the face (8 cases). The erythrocyte sedimentation rate was between 40 and 121 mm in the first hour. Creatinine phosphokinase was increased in 10 patients explored with a value between 1300 and 4500 IU/L (normal range 15 - 110 IU/L). The most frequent clinical manifestations of systemic lupus erythematosus were alteration of general condition (five cases), polyarthralgia (seven cases), discoid lupus (six cases), malar rash (four cases), alopecia (three cases), and seritis (three cases). Laboratory findings included haemolytic anemia (five cases), and leucocytopenia (three cases), Antinuclear and anti-DNA antibodies were detected in three patients explored.

### 3.3. Metabolic Arthritis

Among the 233 patients (9 women and 224 men) with metabolic arthritis, 229 were suffering from gout (98.3%) and the four others suffered from chondrocalcinosis (1.7%). The average age of the patients suffering from metabolic arthritis was 52 years old and the average duration of evolution five years. The average age of the 229 patients (six women, 223 men) suffering from gout was 52 years. The average duration of evolution of gout upon diagnostic was five years. Fifty patients (21.8%) had tophus; one patient had a nephritic colic. No risk factor has been found with eight patients (3.5 %). Each of the 221 other patients (96.5 %) had at least one risk factor (**Table 4**).

### 3.4. Arthritis Infectious

The 198 patients (100 women and 98 men) suffering from infectious arthritis had an average age of  $36.26 \pm 17.47$  years and an average duration of evolution of  $9.28 \pm 9.84$  months. The knee (34.3%) was the most affected joint. The reach was essentially mono-articular (159 pa-

tients: 80.3%). Clinical signs were associated with a joint stiffness (180 patients, 90.9%) together with local inflammatory signs (97 patients, 49%) (**Table 5**). The infectious gate was essentially cutaneous (30 patients, 15.2%), uro-genital (23 patients, 11.6%), and pleuro-pulmonary (18 patients, 9.1%). The arthritis was caused by a banal germ in 157 cases (34 certain cases, and 123 probable cases) and by bacillus of Koch in 41 other cases (10 confirmed cases and 31 probable cases). The causal germ of the infection has been isolated in 39 of the 198 patients (19.7%). The *staphylococcus aureus* has been for most of the time the cause (42.5%). Apart from the weak economic level and the insufficiency of hygiene that has been observed in 172 patients (86.9%), the other risk factors that have been identified were the HIV infection source (28 cases), alcoholism (10 cases), Sickle-cell anemia (eight cases), a malignant tumor (three cases), and the diabetes (two cases).

**Table 4. Risk factors for gout and co-morbid conditions in 229 patients with gout.**

	Number of patients	Percentage
Alcoholism	193	84.3
Overweight/obesity	96	41.9
Arterial high blood pressure	65	28.4
Family history of gout	27	11.8
Renal failure	21	9.2
Hypertriglyceridemia	18	7.9
Hypercholesterolemia	12	5.2
Diabetes mellitus	5	2.3

**Table 5. Clinical and paraclinical manifestations observed in 198 patients with infectious arthritis.**

	Banal germ arthritis (157 cases)	Tuberculous arthritis (41 cases)
	Number (%)	Number (%)
Inflammatory pain	157 (100)	18 (43.9)
Monoarticular infectious	121 (77.1)	38 (92.7)
Olygoarticular infectious	34 (21.6)	3 (7.3)
Joint stiffness	157 (100)	23 (56.1)
High fever	79 (50.3)	0 (0.0)
Leucocytosis	106 (67.5)	11 (26.8)
Erythrocyte sedimentation rate $\geq$ 20 mm	146 (92.9)	35 (85.4)
Infectious arthritis associated with HIV	25 (15.9)	3 (7.3)
Radiological signs of joint infection	118 (75.1)	41 (100)

#### 4. Discussion

This study shows the crucial importance of arthritis in rheumatologic consultation in Lomé. Arthritis has, for 15 years, motivated the study of the consultation of 8% of the patients suffering from rheumatism. Despite the fact that there are insufficiencies (hospital recruiting, narrowness of the technical scale), this study, like those conducted in other countries, testifies the importance of the CIR in spite of the weight of the infectious pathology in Africa [11,12]. The importance of the CIR is the reflection of the epidemiologic transition that is observable on the African continent. The unclassified chronic inflammatory rheumatism has been identified as the first cause of arthritis. This high frequency can be explained by the insufficiency of the facilities of investigation; contrary to other countries where this rate in decrease is probably linked to the progress of the diagnostic refinement [5]. Like in Congo, the retroviral infection seems to be the first cause of reactional arthritis [14,15]. The rheumatoid arthritis seems less frequent in the black race and unevenly apportioned from one area to another [16,17]. The scarcity of the connective tissue diseases observed in this series seems to reinforce previous researches. [18-20].

The gout represents the second etiologic form of arthritis in our study. The high frequency of this affection in the black patients is henceforth established [3,6,9,10,]. The scarceness of renal colic seems to perpetuate the unique clinical particularity in this part of the world [6].

The demographic and semiologic characteristics of the patients suffering from infectious arthritis are comparable to those found with other African studies [21-24]. The risk factors found with our patients superpose themselves to those obtained by other researchers [22,23]. The high susceptibility at joint infections in HIV infected patients has not been found in our series. The same goes with the HIV-tuberculosis co-infection. Prospective researches with rigorous statistic analysis will allow establishing the existence of an eventual link of causality between the frequency of this affection in our countries, the conditions of life of the populations and the increase of the infection by the HIV.

#### 5. Conclusion

The chronic inflammatory rheumatism were the first causal form of arthritis in rheumatologic consultation in Lomé. This study demonstrates the importance of chronic inflammatory rheumatism despite the weight of the infectious disease in Africa and reflects the scarcity of the connective tissue diseases in black Africa.

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