Scientific Research Publishing

Open Journal of Rheumatology and Autoimmune Diseases, 2023, 13, 8-16
https://www.scirp.org/journal/ojra
ISSN Online: 2164-005X
ISSN Print: 2163-9914

Ankylosing Spondylitis in a West African Hospital

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How to cite this paper: Barry, A., Bah, O.D., Bah, A., Diallo, M.L., Condé, K., Condé, S.F. and Kamissoko, A.B. (2023) Ankylosing Spondylitis in a West African Hospital. *Open Journal of Rheumatology and Autoimmune Diseases*, **13**, 8-16.
https://doi.org/10.4236/ojra.2023.131002

Received: November 7, 2022
Accepted: February 4, 2023
Published: February 7, 2023

Abstract

Introduction: Ankylosing spondylitis (AS) is an inflammatory rheumatic disease characterized by predominant axial and peripheral (enthesitis, sacroiliitis) involvement affecting young subjects aged 30 to 40 years, 80% to 98% of cases are associated with HLA-B27. **Objective:** To determine the epidemiological profile of ankylosing spondylitis in the rheumatology department of the Ignace Deen National Hospital in Conakry (Guinea). **Materials and Methods:** This was a descriptive cross-sectional study carried out within the said department over a period of 18 months from July 1, 2018 to December 31, 2020, including all patients seen in consultation and/or hospitalized in the department in which the diagnosis of ankylosing spondylitis had been retained according to the modified New York criterion. The parameters studied were sociodemographic, clinical, paraclinical and therapeutic. **Result:** We collected 73 cases or 4.1% of ankylosing spondylitis out of a total of 1781 patients seen during the study period. The male gender was represented with 54.8% for a sex ratio of 1.2 M/F. The average age of our patients was 32.18 ± 12.44 years with extremes ranging from 17 to 54 years. Axial involvement was present in 89.9% of cases with a lumbar predominance (95.2%), followed by the sacroiliac seat (35.5%), cervical (14.5%) and dorsal at 4.8%. The pain was chronic in 93.2% of cases. The most common drug treatment was taking analgesics and NSAIDs (100%) followed by cortisone infiltration (41.1%), corticosteroids (30%), and physiotherapy (21.9%). Ankylosing spondylitis represents 83% of spondyloarthritis followed by undifferentiated spondyloarthritis (9.1%) and juvenile spondylitis (3.4%) were the most common conditions.

Keywords

Ankylosing Spondylitis, Rheumatology, Ignace Deen, Guinea

1. Introduction

Ankylosing Spondylitis (AS) is a chronic inflammatory rheumatism seronegative to rheumatoid factor affecting mainly the axial skeleton (spine, sacroiliac) and entheses [1]. It is the leader of a group of inflammatory rheumatism commonly called spondyloarthritis including reactive arthritis, psoriatic arthritis, undifferentiated spondyloarthritis, rheumatism associated with UC enterocolopathy (ulcerative colitis, Crohn's disease, etc.), SAPHO syndrome (Synovitis-Acne-Palmoplantar pustulosis-Hyperostosis and Osteitis) as well as certain forms of juvenile idiopathic arthritis and undifferentiated forms [2]. AS primarily affects the axial joints, mostnotably the sacroiliac joints. Other sites of involvement include the spine, peripheral joints, and entheses. The mostcommon extra-articular manifestations are represented by uveitis, skin and heartinvolvement [1]. They also present the same predisposing genetic background, dominated by the HLA-B27 antigen (Human Leukocyte Antigen) [3] [4].

Epidemiologically, its prevalence depends on many factors including the study population, the frequency of HLA-B27 Ag, the diagnostic criteria and the methodology used. The prevalence in Western literature is around 0.1% to 1.9% in the general population [5], it is 0.02% in Latin America [6], and 0.25% in Asia [6]. As for the work carried out in sub-Saharan Africa, two types of epidemiological profiles emerge from the literature: the rare or even exceptional nature of AS, particularly in the oldest studies [7] [8], contrasting in the most recent studies of an increasing frequency of AS with large cohorts superimposed on those of the Maghreb and the West [9] [10]. Rare studies on this condition have been conducted in Guinea and have reported a hospital prevalence of 3.32% with a male predominance [11] [12]. The objective of this study was to describe the clinical and paraclinical characteristics of ankylosing spondylitis and to identify gender specificities in a black African population.

2. Patients and Methods

We carried out a cross-sectional study in the rheumatology department of the CHU Ignace Deen in Conakry between July 2018 and December 2020. The patients included in the study were recruited from patients followed in our rheumatology department. All participants completed detailed questionnaires on their personal and family medical history and two rheumatologists simultaneously performed a clinical examination and measured the activity and functional impact of the disease. Patients with ankylosing spondylitis according to the ASAS and modified New York criteria [13] [14] were included. For each patient, the following data were collected: demographic (age, sex, ethnicity, geographical location, duration of illness, age at onset of symptoms), clinical (inflammatory lumbo-fessalgia, neck pain, anterior chest pain, heel pain), extra-articular manifestations (uveitis, aortic insufficiency, renal insufficiency), biological (C-reactive protein, presence or not of the HLA B27 antigen (made in France by the Cerba laboratory), radiographic sacroiliitis, cervical and lumbar

involvement according to the mSASSS score (modified Stoke Ankylosing Spondylitis Spinal Score). The activity and functional impact of the disease were assessed according to the bath Ankylosing Spondylitis Functional Index (BASFI), the bath Ankylosing Spondylitis Disease Activity Index (BASDAI). The results were analyzed on SPSS 22 and processed in Excel 2007. Qualitative data was expressed as count and percentage Quantitative data was expressed as mean ± standard deviation Chi-square test and student test e were used for statistical analysis, with a significance level of 5%. Ethics clearance was obtained from the Research Ethics Committee of Gamal Abdel Nasser University in Conakry, Guinea, and the Research Ethics Committee of CHU Ignace Deen. All patients were informed and signed a consent form before inclusion in the study.

3. Results

Seventy-three patients diagnosed with AS out of a total of 2481 during the study period (Figure 1). That is a hospital prevalence of 2.94%. The mean age was 32.18 ± 12.44 years with extremes (17 and 54), thirty-three (33: 45.2%) were female with a male-female ratio of about 1.2.

The distribution of patients with ankylosing spondylitis by ethnicity is shown in Figure 2.

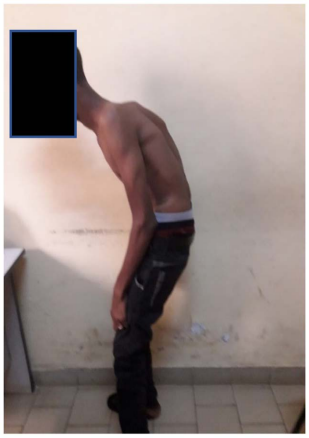

Figure 1. 25-year-old student with ankylosing spondylitis with positive HLA B27 and dorsal kyphosis.

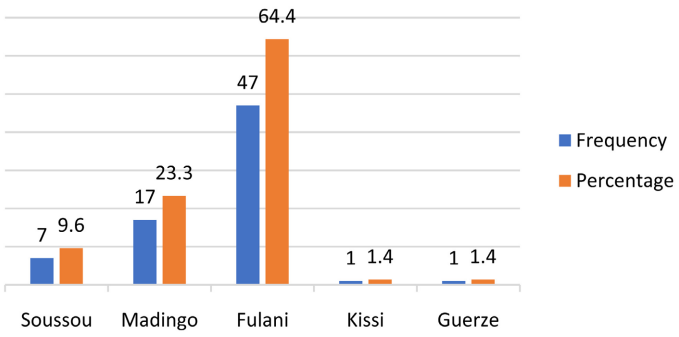

Figure 2. Distribution of patients with ankylosing spondylitis according to ethnicity.

The clinical characteristics of the patients are presented in Table 1. The mean diagnostic delay was 7.6 ± 12.5 years. Thirty-five (47.9%) of 73 patients had a family history of AS.

Lumbar involvement was present in 93.1% of cases and eighteen patients (24.7%) had peripheral joint involvement. Forty-five patients (61.6%) had plantar heel pain, which was the most frequent enthesitic symptom in this study. Twenty-one patients (28.8%) had a history of uveitis. Involvement of other extra-articular organs, such as the heart and the kidney, was relatively uncommon with 4.1% and 12.3% of cases respectively. Coxitis was present in twelve patients (16.4%) of cases and the mean mSASSS score at diagnosis was 34.45/72. Sacroiliitis was present in 84.91% (Figure 3). Sedimentation rate (ESR) was present in all patients. Out of forty-two patients who achieved the HLAB27 antigen, thirty patients (41.1%) were HLA-B27 carriers. Twenty-one patients (28.8%) had a history of uveitis. The average BASFI and BASDAI were respectively 4.6/10 and 3.93/10.

The mean age of the patients was almost the same between the sexes, the women had a later age of onset of the disease but there was no significant difference for the mean age (p = 0.124). However, there was a statistically significant difference for ethnicity between genders (54.8% male vs 45.2% female, p = 0.031). Men described a family history of AS more frequently than women (21 (60%) vs 14 (40%)). The frequency of buttock pain was statistically different between the sexes (60.3% of men vs 39.7% of women, p = 0.017). There was no statistically significant difference in peripheral joint involvement, heel pain or HLA-B27 positivity between men and women (Table 2). A total of sixty (82.19%) patients received nonsteroidal anti-inflammatory drugs (NSAIDs); twelve (16.44%) were treated with methotrexate; ten (13.69%) patients with salazopyrine and only two (2.74%) of the patients received treatment with anti-TNF alpha (Enbrel®). The activity and functional impact of ankylosing spondylitis measured by BASFI and BASDAI were not significantly different between men and women.

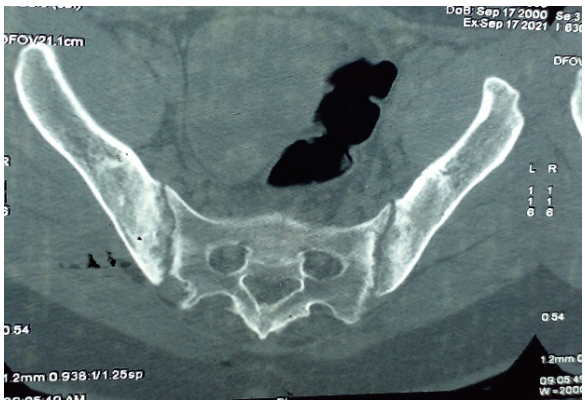

Figure 3. CT scan of the pelvis showing bilateral Forestier stage 3 sacroiliitis in a patient with ankylosing spondylitis in the rheumatology department of the CHU Ignace Deen in Guinea.

Table 1. Clinical characteristics of patients with ankylosing spondylitis.

	Effective	Percentage (%)	Mean ± SD
Sex			
Male	40	54.8	
Feminine	33	45.2	
Middle age			32.18 ± 12.44
Geographic origin			
Urban area	40	54.8	
Rural area	33	45.2	
Diagnostic delay			6.8 ± 7.44
Family history	35	47.9	
Spine injury			
Cervical involvement	9	12.3	
Back injury	3	4.1	
Lumbar injury	68	93.1	
Buttock pain	63	86.3	
Talalgia	45	61.6	
Anterior chest pain	15	20.5	
Peripheral involvement	18	24.7	
History of uveitis (n = 35)	21	28.8	
Heart attack	3	4.1	
Kidney damage	9	12.3	
HLAB27 antigen (n = 42)	30	41.1	
BASFI			4.6 ± 1.29
BASDAI			3.93 ± 0.91

Table 2. Male/female comparisons with characteristics of ankylosing spondylitis.

Clinical features	Men (n = 40)	Women (n = 33)	p-values
Middle age	30 ± 12.8	34.82 ± 11.62	0.124
Family history (n = 35)	21 (60%)	14 (40%)	0.391
Ethnic group	40 (54.8%)	33 (45.2%)	**0.031**
Lumbar injury	37 (54.4%)	31 (45.6%)	0.676
Buttock pain	38 (60.3%)	25 (39.7%)	**0.017**
Peripheral involvement	9 (50.0%)	50 (50.0%)	0.226
History of uveitis (n = 35)	10 (47.6%)	11 (52.4%)	0.434

Continued

HLAB27 antigen (n = 42)	20 (66.67%)	10 (33.3%)	0.200
BASFI	3.95 ± 0.81	3.89 ± 1.03	0.475
BASDAI	4.71 ± 1.34	4.5 ± 1.25	0.651

4. Discussion

During the study period, we collected seventy-three cases of ankylosing spondylitis out of a total of 2481 patients with a hospital prevalence of 2.94%. This result is close to that found in Guinea by Kamissoko AB *et al.* in 2021 (3.32%) [12]. However, it is higher than that found in Senegal (0.83%) by Abba A and in 2014 [9] and in Burkina by Tiendrebeogo *et al.* (0.61%) [15]. The high hospital frequency of AS in our context could be explained by the influx of patients in the only rheumatology department which constitutes a pole of attraction for all rheumatic pathologies in Guinea. The mean patient age (32.18 ± 12.44 years) was similar to that reported in Korea (33.2 ± 10.1 years) by Kim *et al.* in 2010 [16]. The predominance of this pathology in young subjects is reported in Western and African literature [5] [17] [18] [19]. Men dominated in our study with 54.8% of cases, unlike the study conducted in Senegal by Condé K *et al.* [20] which reported a female predominance (68%). However, several studies have shown a male predominance of ankylosing spondylitis [8] [10] [12] but this tendency tends to disappear with age. Patients in urban areas were the most represented with a frequency of 94.50%. The rarity of SA in rural areas can be explained by the lack of health facilities. Inflammatory low back pain was almost constant (93.1%) with damage to the sacroiliac joints resulting in buttock pain in 86.3% of cases. Our results were comparable to studies by Condé K *et al.* in Senegal [21] and Kim *et al.* in Korea which found 87.7% and 47.1% LBP respectively [16]. Uveitis was the most common extra-articular manifestation (28.8%) consistent with what was observed in our previous work [11] [12]. The mean diagnostic delay (6.8 ± 7.44 years) was higher than that found in Senegal by Diallo S *et al.* at 5.1 years [22]. This long delay before diagnosis favors the occurrence of severe forms as described in the literature [17] [19] [23]. This significant diagnostic delay could be the result of different factors including: the delay in consultation by lack of financial means, ignorance of disease by some practitioners and a plateau limited technique. Patients with positive HLA B27 (41.1%) were close to the result of Condé K *et al.* in Senegal (50.7%) [9] whereas this genetic background is reputed to be rare in black subjects [8] [24] [25]. According to the literature, the HLA B27 antigen is present in approximately 90% - 95% of patients with AS and the risk of developing AS is 6% in HLA B27 positive individuals [3] [4] [21]. The link between the HLAB27 antigen and spondyloarthritis could explain this [26]. The inflammatory syndrome had been objectified in all our patients. However, the presence of an inflammatory syndrome is not constant; it is a sign of disease activity but has no diagnostic value. In our study, nine patients (12.3%) had kidney problems. However, we did not regularly mon-

itor kidney function, so the nephropathies observed may be explained by a number of undiagnosed cases. The clinical presentation of the disease is similar to that of the Caucasian subject [27]; however, the extra-articular manifestations seem to be dominated by uveitis. There was no statistically significant difference by sex except for ethnicity and buttocks. The treatment was based on NSAIDs and DMARDs (methotrexate, salazopyrine), due to their accessibility. For the measurement of BASFI and BASDAI, our results were lower than those found by Kim *et al.* in Korea [16] who found a BASFI score of 1.8/10. This difference could probably be due to the diagnostic delay which was 6.8 years in our study. The difficulties and limitations encountered in our study related to the cost of additional examinations (HLAB27 antigen, scanner) and the low socioeconomic level. These difficulties (insufficient technical facilities) prevented us from understanding all the aspects of this problem.

5. Conclusion

Ankylosing spondylitis is not uncommon in Guinean hospitals. It is especially common in young people and the HLA B27 antigen is present in half of the cases. The diagnosis of AS was late and its clinical and radiological presentation severe.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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