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Elderly-onset rheumatoid arthritis in Chad: A series of 10 hospital cases

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Abstract

Objective. To describe the clinical, laboratory, comorbid and therapeutic features of elderly-onset rheumatoid arthritis (EORA) in Chad.

Methods. A retrospective single-center study was conducted in the Rheumatology Department of CHURN, N'Djamena, between January 2019 and December 2024. Patients fulfilling the 2010 ACR/EULAR criteria for RA with symptom onset ≥60 years were included. Demographic, clinical, laboratory, comorbidity, treatment, HAQ and DAS28-CRP data were collected and analyzed.

Results. Ten patients were included (mean age 68 ± 4 years; 60% female). Rhizomelic onset was observed in 70% of cases. Rheumatoid factor was positive in 8/10 patients and anti-CCP antibodies in 9/10. The main comorbidities were osteoporosis (60%), hypertension (30%) and diabetes (20%). Methotrexate was prescribed in 80% and corticosteroids in 70% of patients. Mean HAQ score was 25/60 and mean DAS28-CRP was 4.2.

Conclusion. Elderly-onset RA in Chad is characterized by frequent rhizomelic onset, high serological positivity, common comorbidities and significant functional impairment. These findings highlight the need for individualized management and improved access to disease-modifying therapies.

Keywords: Rheumatoid Arthritis; Elderly-Onset; Anti-CCP; Methotrexate; Comorbidities; Chad

1. Introduction

Rheumatoid arthritis (RA) is a chronic, systemic, autoimmune inflammatory disease characterized by destructive polyarthritis and major functional impairment. Although peak incidence occurs between 40 and 60 years, a substantial proportion of cases arise after the age of 60. years [1].This condition is termed elderly-onset rheumatoid arthritis (EORA).

EORA exhibits distinct clinical and biological features. Onset is frequently abrupt and rhizomelic, often associated with systemic manifestations. Anti-CCP antibodies and rheumatoid factor remain valuable diagnostic tools, although their expression varies across populations. Comorbidities (osteoporosis, diabetes, hypertension) are common and complicate therapeutic management, limiting the use of certain treatments, particularly biologics agent. [2,4].

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In sub-Saharan Africa, data on EORA remain scarce. A few series from Senegal,[2]. Guinea, [1].Togo, **[3].** and Benin[4]. have highlighted an increasing frequency of this form as life expectancy rises. However, in Chad, no dedicated study has been reported to date.

1.1. Objective

The aim of this study was to describe the clinical, laboratory, comorbid, and therapeutic features of EORA in a rheumatology department in Chad.

2. Patients and Methods

2.1. Study design and setting

This was a retrospective, descriptive and analytical study conducted in the Rheumatology Department of the University Teaching Hospital of National Reference (CHURN) in N'Djamena, Chad.

2.2. Study period

Data collection covered a 5-year period, from January 2019 to December 2024.

2.3. Study population

All patients diagnosed with rheumatoid arthritis (RA) according to the 2010 ACR/EULAR classification criteria, with symptom onset at ≥60 years of age, were included.

2.3.1. Exclusion criteria

Excluded were:

- patients with other connective tissue diseases (lupus, scleroderma, isolated Sjögren's syndrome, etc.),patients with incomplete medical records,and those whose symptom onset occurred before the age of 60.
- Collected variables. Data included:
- sociodemographic characteristics: age, sex;
- clinical aspects: onset type, tender and swollen joint count, systemic features;
- laboratory and imaging data: erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), rheumatoid factor (RF), anti-CCP antibodies, plain radiographs;
- comorbidities: osteoporosis, diabetes, hypertension, other chronic conditions;
- treatments received: corticosteroids, methotrexate, other conventional DMARDs;
- functional and disease activity assessment: Health Assessment Questionnaire (HAQ), Disease Activity Score (DAS28-CRP).

2.4. Statistical analysis

Data were entered and analyzed using a standard statistical software (Excel® 2019). Results are expressed as mean ± standard deviation (SD) for quantitative variables and as absolute and relative frequencies (%) for qualitative variables.

2.5. Ethical considerations

The study was conducted in compliance with patient data confidentiality. Authorization from the Head of the Rheumatology Department at CHURN was obtained prior to data collection.

3. Result

3.1. Epidemiological and clinical features

Ten patients were included. The mean age was 68 ± 4 years (range: 62–76 years). Most patients were female (6 women, 4 men; M/F sex ratio = 0.6). The onset was abrupt and rhizomelic in 7 cases (70%). The median tender joint count was 7 [3–18], and the median swollen joint count was 3 [0–7]. Three patients (30%) presented systemic signs (fever, fatigue, weight loss). (Table 1)

Laboratory and radiological findings. Inflammatory syndrome (ESR, CRP) was present in all patients. Rheumatoid factor was positive in 8 out of 10 cases, and anti-CCP antibodies in 9 cases. Standard radiographs revealed early erosions in 4 cases. (Table 2)

3.2. Comorbidities.

Comorbidities were frequent: osteoporosis in 6 cases (60%), hypertension in 3 cases (30%), and diabetes in 2 cases (20%).

3.3. Treatment.

Methotrexate was prescribed in 8 patients (80%), corticosteroids in 7 patients (70%), and a combination of conventional DMARDs (leflunomide or sulfasalazine) in 3 patients (30%). None of the patients had access to biologic therapies.

3.4. Functional assessment and disease activity.

The mean HAQ score was 25/60, indicating moderate to severe functional impairment. (Table 3). The mean DAS28-CRP score was 4.2, consistent with moderate disease activity. The distribution of DAS28 scores is shown in Figure 1.

Table 1 Epidemiological and clinical characteristics (n = 10)

Variables	**Résultats**
Nombre de cas	10 (14 % des PR)
Âge moyen (ans)	68 ± 4 (62–76)
Sexe ratio (H/F)	0,6 (6F/4H)
Articulations douloureuses (moyenne)	7 (3–18)
Articulations gonflées (moyenne)	3 (0–7)
Fièvre + altération état général	3 cas (30 %)
Début rhizomélique	7 cas (70 %)

Table 2 Biological data, comorbidities and therapeutics (n = 10)

Variables	**Résultats**
Syndrome inflammatoire	10/10
FR positifs	8/10
Anti-CCP positifs	9/10
Ostéoporose	6/10
Hypertension artérielle	3/10
Diabète	2/10
Méthotrexate	8 cas
Corticothérapie	7 cas
Autres DMARDs (asso.)	3 cas

Table 3 Functional assessment and disease activity(n = 10)

Scores	Résultats
HAQ (moyen)	25/60
SF-36	Non réalisé
NHP	Non réalisé

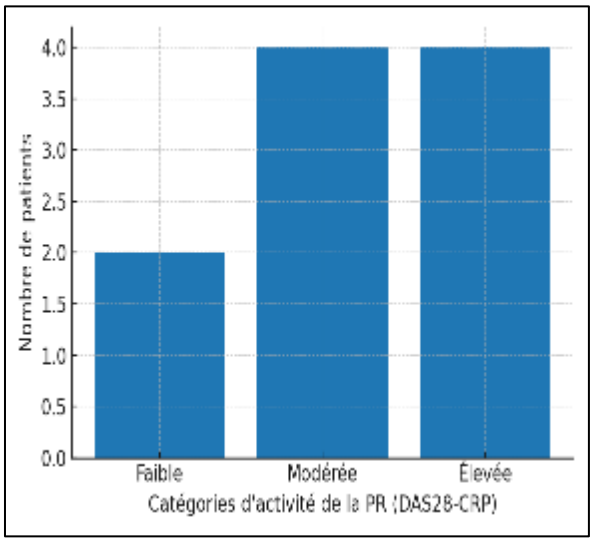

Figure 1 Distribution of DAS28-CRP

4. Discussion

Elderly-onset rheumatoid arthritis (EORA) is a distinct entity, differing from younger-onset RA by its clinical presentation, associated comorbidities, and therapeutic challenges. In our series, the mean age was 68 years, which is comparable to findings from West Africa where the mean diagnostic age ranges between 65 and 70 years [1-3,5]. The female predominance (60%) is consistent with international data,[6], although some African studies report a more balanced sex ratio. [7,8].

Clinically, rhizomelic onset was observed in 70% of our patients, confirming data from Senegal and Guinea where this presentation ranges between 50% and 65%. This abrupt onset with systemic features may mimic polymyalgia rheumatica, leading to diagnostic delay. [9]. Similar findings have been reported in France, where elderly-onset RA is recognized as a distinct subgroup with specific therapeutic challenges [6]. In West Africa, long-term series from Burkina Faso also highlighted the rising burden of chronic inflammatory rheumatism in the elderly [7]. Predictive factors for erosive disease in elderly RA were similarly noted in Ivory Coast [8]. Historical reviews confirmed the under-recognition of elderly RA in sub-Saharan Africa [9].

From a laboratory perspective, high positivity rates of anti-CCP antibodies (90%) and rheumatoid factor (80%) were noted, in line with international reports, [10–13], highlighting the diagnostic utility of serology in EORA. However, lower seropositivity rates have been reported in some Togolese and Beninese studies, [3,4,14], likely due to methodological variations and limited access to laboratory assays.

The first documented cases from Niger also illustrate the diagnostic challenges of RA in Africa [10]. International data emphasize the complexity of managing RA in the elderly due to comorbidities and drug tolerance [11,12]. Quality of life impairment in elderly RA has also been underlined in studies from Guinea and Cameroon [13]

Comorbidities were frequent in our cohort, particularly osteoporosis (60%), hypertension (30%), and diabetes (20%). These findings underscore the heavy burden of chronic conditions in elderly patients and their impact on management [15–17]. Particularities of male RA in elderly patients were reported in Burkina Faso [16]. Population-based US studies

confirm the high prevalence of RA in persons over 60 years of age [17]. In sub-Saharan Africa, osteoporosis is of particular concern due to limited availability of bone densitometry and specific treatments.[18,19]. Methotrexate tolerance in elderly RA has also been evaluated in Benin, showing similar safety issues [18]. The introduction of biologics in Gabon remains limited to a few pilot experiences [19].

Therapeutically, methotrexate remained the cornerstone, prescribed in 80% of cases, often combined with corticosteroids. The lack of access to biologic therapies is a major limitation in our setting, whereas such agents have demonstrated efficacy in EORA in high-income countries. [20–27].

The concept of elderly-onset RA was first well described in seminal studies in the 1990s [20]. Immunogenetic studies suggest overlaps between elderly-onset RA and polymyalgia rheumatica [21]. Age at onset may influence phenotype and prognosis, as demonstrated in British cohorts [22]. Spanish studies have also confirmed specific outcomes in late-onset RA [23]. Updated UK prevalence data reinforce the growing recognition of elderly RA [24]. In Korea, studies highlighted drug retention and safety of TNF inhibitors in elderly RA patients [25]. Reviews on DMARD use in the elderly population underline specific therapeutic challenges [26]. Guidelines recommend methotrexate as the cornerstone of therapy, including in elderly patients [27].

4.1. Study limitations

This study has some limitations: small sample size (10 cases), retrospective and single-center design, and absence of long-term follow-up. Nevertheless, it represents the first Chadian series focused on EORA and provides novel data in the African context.

4.2. Implications

Our findings highlight the need for increased awareness of EORA, systematic screening for comorbidities, and advocacy for improved access to modern disease-modifying therapies in Chad.

5. Conclusion

Elderly-onset rheumatoid arthritis in Chad is characterized by frequent rhizomelic onset, high serological positivity, and a high burden of comorbidities, particularly osteoporosis, hypertension, and diabetes. These factors complicate management and contribute to significant functional impairment.

Although limited by its small sample size and single-center design, this study represents the first Chadian series dedicated to this topic. It highlights the need for early diagnosis, systematic comorbidity screening, and broader access to disease-modifying drugs, including biologics.

Looking forward, better organization of rheumatology follow-up and advocacy for the availability of modern therapies could improve the quality of life of elderly patients with RA in Chad.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflict of interest regarding this work.

Authors' contribution

All authors contributed equally to the design, data collection, analysis, and writing of the manuscript.

Statement of ethical approval

The study was conducted in accordance with ethical principles and was approved by the local ethics committee.

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