

Rheumatoid arthritis in Ugandan Africans

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Until recently rheumatoid arthritis has been considered to be rare in the tropics. Gelfand (1957), in his extensive review of disease in Africans, stated that he had rarely seen a true case in a native of Central Africa.

Goodall (1956) described two atypical cases amongst ninety patients with polyarthritis in Malawi. Since then eight cases have been reported from Kenya (Harries, 1962; Hall, 1966), three from Liberia (Hijmans, Valkenburg, Muller, and Gratama, 1964), 39 from Uganda (Kanyerezi, 1969), and 71 from Western Nigeria (Greenwood, 1969).

Lawrence, Bremner, Ball, and Burch (1966) conducted a survey of rheumatoid arthritis in Jamaica (a sub-tropical zone) and concluded that the disease 'occurs at least as frequently as in a Caucasian population in the United Kingdom'.

Material and methods

120 new patients attended the Arthritis Clinic, Mulago Hospital, Kampala, over a period of one year, and 65 of them were diagnosed as cases of rheumatoid arthritis.

The Rome diagnostic criteria (Kellgren, Jeffrey, and Ball, 1963) were used to classify these cases, so that the findings may be compared easily with those of a projected population survey. The authors have been conservative in including cases in this analysis and this is reflected in the relatively small number of 'probable' cases. Patients with a past history of urethritis alone were not excluded, as venereal infection is so very common in Uganda. However, five young men with a history of co-existent urethritis and arthritis were excluded as cases of Reiter's disease.

All patients were examined by one of us (B.R.K.) and all had radiographs taken of the hands and wrists. For economic reasons, other joints were radiographed only when the patient had symptoms relating to those joints. Radiological changes were graded from 0 to 4 initially (0 = none, 1 = doubtful, 2 = mild, 3 = moderate, 4 = severe), but in order to fit in with the Rome Criteria the cases were also divided into positive and negative groups, Grades 0 to 1 being regarded as negative and Grades 2 to 4 as positive. Those patients classified as radiologically

positive had at least two marginal erosions in addition to juxta-articular porosis or other changes.

At least one slide latex test was performed on all 65 patients and search was made for L.E.-cells in nearly all of them.

Findings

Of the 65 cases, 30 were male and 35 female, giving a male : female ratio 1 : 1.2. Before 30 years of age there were more male cases but after 30 years the female cases predominated (Fig. 1).

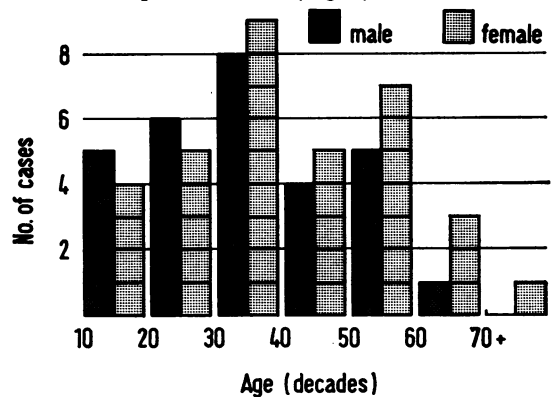


FIG. 1 Age distribution of Ugandan patients with rheumatoid arthritis

The duration of disease among these 65 cases ranged from 4 months to 38 years (Table I), with a mean of 3 years for males and 4 years for females.

Table I Duration of disease (yrs)

Duration	No. of cases
Up to 1	17
1-2	22
3-4	9
5-6	4
7-9	6
10 and over	7

The mean age at onset was 32.5 years in males and 37 years in females.

Criteria of diagnosis (Table II)

Morning stiffness was complained of by all but two of these patients. 62 had pain, tenderness, and swelling of more than one joint. Of the three cases with monoarticular disease, two had wrist involvement and the third had changes in an ankle joint. Subcutaneous nodules were palpated in six patients but none of these was biopsied to prove that they were in fact 'rheumatoid' nodules. None of these patients had evidence of leprosy.

Table II *Signs and symptoms (Rome criteria)*

<i>Symptoms</i>	<i>No. of cases</i>
1 Morning stiffness	63
2 Pain/tenderness in at least one joint	65
3 Swelling in at least one joint	65
4 Swelling in at least one other joint	62
5 Symmetrical joint swelling	53
6 Subcutaneous nodules	6
7 X-ray changes	46
8 Positive agglutination test	35

Classification

Probable = 3 or 4 criteria
 Definite = 5 or 6 criteria
 Classical = 7 or 8 criteria

Positive radiological findings were present in 46 patients. The greatest number of radiological abnormalities were seen in the wrists and hands. Typical examples are shown in Figs 2, 3, and 4.

Other joints were radiographed less often but changes were seen in the ankles and feet in fifteen patients and in the cervical spine in three. No radiological evidence of sacro-iliac involvement was seen in any of these patients. The hips were involved in one case.

The slide latex test was positive in 35 of the 65 cases (54 per cent.).

The 25 patients with 'classical' RA all had positive serology (100 per cent.).

Of the 36 patients with 'definite' RA only ten were latex positive (28 per cent.). In this group there was a predominance of male cases with a male : female ratio of 1.25 : 1, whereas in the 'classical' group there was a male : female ratio of 1 : 2.1.

None of the four patients with 'probable' RA had a positive slide latex test.

None of the patients tested was found to have L.E.-cells.

Juvenile rheumatoid arthritis

Nearly all the patients who attended the clinic were adults, but we were shown two patients in the paediatric department aged 4½ and 5 years respectively, one of whom had typical radiological changes. These two cases have not been included in this series.

Seven of the 65 patients studied were less than 16 years old at the time of onset, but all but one were aged 18 or over at the time of attendance (Table III, opposite). Two of these were graded as 'classical' and the other five as 'definite'; the latter were serologically negative.



FIG. 2 *Radiograph of hands and wrists of a 70-year-old African woman with 'burnt-out' rheumatoid arthritis.*



FIG. 3 Radiograph of hands and wrists of a 43-year-old African man with a 2-year history of rheumatoid arthritis



FIG. 4 Radiograph of hands of a 29-year-old African female with a 10-year history of rheumatoid arthritis.

Table III Clinical findings in seven patients in whom the age at onset was below 16 years

Sex	Age at first attendance (yrs)	Age at onset (yrs)	Radiological changes of rheumatoid arthritis	Latex test	Classification
F	18	13	Moderate	+ve	Classical
F	18	15	Mild	Neg	Definite
F	13	9	Severe	Neg	Definite
M	20	13	Neg	Neg	Definite
M	21	14	Neg	Neg	Definite
M	19	11	Mild	Neg	Definite
M	26	14	Severe	+ve	Classical

Discussion

Overall sex incidence

Population surveys indicate that RA manifests itself in women about three times as often as in men (male : female ratio 1 : 3). This is true in Europe. The Jamaican survey by Lawrence and others (1966) revealed a male : female ratio of 1 : 2. The figure previously reported for Ugandan patients was 1 : 2 (Kanyerezi, 1969). Pooling of the present cases with those of the previous Ugandan report gives a total of 104 cases, of which 43 are males and 61 females (ratio 1 : 1.4). There is a marked difference between the Ugandan and Jamaican findings, though the former are not derived from a population survey.

For traditional and economic reasons Ugandan women may attend hospital clinics less often than men with similar complaints. Certainly several of the women patients who had symptoms for over 10 years had not attended a hospital clinic before.

Slide latex test

It is well known that there is a high incidence of positive latex tests amongst normal people in the tropics (Houba and Allison, 1966; Wells, 1967; Shaper, Kaplan, Mody, and McIntyre, 1968).

Shaper and others (1968) used the Hyland slide screening test on 141 normal people in the Kampala area and found nineteen sero-positive (14 per cent.). There was a higher incidence amongst Rwandans compared with Buganda. As these tests were performed in the same laboratory they can be used as a control series of our own cases.

Despite the use of such a sensitive method only 54 per cent. of patients were latex positive. When the classical and definite cases are combined, the proportion rises to 62 per cent. which is still significantly less than would be expected in a European group (Table IV). This low figure may be a reflection of the relative mildness of the disease as seen in Ugandans. Greenwood (1969) noted a similar low incidence of sero-positivity in West Africans.

Table IV *Results of Latex test*

Diagnosis	Percentage positive	
	Actual	Expected*
Classical } Definite } Probable }	62	85
	0	65

* Copeman (1969)

If the 'classical' and 'definite' groups are analysed separately, marked differences in the sex incidence and sero-positivity emerge (Table V). Only four 'probable' cases have been included and this number is not large enough to be considered (Table VI).

All the 'classical' cases are almost by definition sero-positive. However, the sex ratio in this group approaches the Caucasian figure and tends to confirm that these patients have true RA as seen in Europeans. The disease in these patients is similar clinically, radiologically, and in sex incidence.

By contrast those graded as 'definite' RA using the Rome Criteria have a higher male incidence and a low proportion of sero-positivity (28 per cent.)

Table V *Serology and radiology, by sex*

Diagnosis		Classical	Definite	Probable	Total
Males	Total	8	20	2	30
	Serologically positive	8	4	0	12
	Radiologically positive	8	9	0	17
Females	Total	17	16	2	35
	Serologically positive	17	6	0	23
	Radiologically positive	17	11	1	29
<i>Male : Female ratio</i>		1 : 2.1	1.3 : 1		1 : 1.2

Table VI *Clinical findings in four probable cases*

Age (yrs)	Sex	Clinical criteria for diagnosis				X-ray findings	Duration of disease (yrs)
50	Male	1	2	3	4	Negative	6
31	Male	1	2	3	4	Negative	4
36	Female	—	2	3	—	Positive	0.5
30	Female	1	2	3	4	Negative	1

which approaches that seen in a normal group (14 per cent.). Of these patients 22 (60 per cent.) had radiological evidence of erosive arthropathy. These findings lead us to believe that we have included patients who have a latex negative polyarthropathy which is commoner in males, amongst our 'definite' cases of RA. Reiter's disease would perhaps account for this discrepancy, though periosteal reactions and sacroiliitis were not seen in any of them.

It would seem at first sight that the Rome criteria are inadequate and that some Ugandan patients graded as cases of definite RA may not have rheumatoid disease. In fairness to the criteria, linguistic problems and the high incidence of venereal disease made exclusions difficult. Three of the five patients we regarded as having Reiter's disease would have been grouped amongst the 'definite' RA patients but for the fact that good histories were obtainable in these cases.

Juvenile rheumatoid arthritis

Though seven cases were below 16 years at the time of onset they were clinically similar to the remainder. The use of this age level is arbitrary and in Africans may be irrelevant.

Conclusion

It is apparent that rheumatoid arthritis is commoner in Ugandan Africans than was previously recognized. It may be that Western Nigeria and Buganda are different from the rest of Africa in having a higher incidence of the disease though Dr. Ojiambo in Nairobi states that more cases have been seen there than have been reported in the literature (personal communication).

A population study of rheumatoid arthritis in Uganda similar to that conducted by Lawrence and

others in Jamaica would be valuable. Comparison of the incidence of the disease in different tribal groups and geographical conditions would be possible. The present study emphasizes the need to exclude possible cases of Reiter's disease. If this were done the existence of another non-rheumatoid polyarthropathy might emerge.

Summary

The Rome Criteria for the diagnosis and classification of rheumatoid arthritis were applied to 120 new patients attending the Arthritis Clinic in one year at Mulago Hospital, Kampala. 65 patients were graded as having 'possible', 'definite', or 'classical' rheumatoid arthritis.

The 25 patients graded as 'classical' were 100 per cent. positive in the slide latex test. The male : female ratio was 1 : 2.1. The disease seen in this group was similar clinically and radiologically to that seen in Europeans.

The 36 patients graded as 'definite' showed a reversed male : female ratio of 1.3 : 1 and a low incidence of sero-positivity (28 per cent.) which approached that for normal subjects (14 per cent.). Despite the use of a relatively sensitive method the overall sero-positivity was lower than in a European group with the disease.

Rheumatoid arthritis is commoner in Ugandan Africans than was previously recognized. This study indicates that a population study of RA in Uganda would be of value. Special attention to the exclusion of patients with Reiter's disease would be necessary if such a study was undertaken.

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