Annals of the Rheumatic Diseases, 1978, **37**, 73–75

Rheumatoid arthritis in population samples in Iraq

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SUMMARY A prevalence survey for rheumatoid arthritis was carried out during the summer of 1975 in persons aged 16 years and over in areas of Iraq representative of differences in geography and ethnicity. Definite rheumatoid arthritis was observed in 1% of the 6999 individuals studied, but differences in occurrence rates in relation to various associated characteristics were not detected. It is concluded that present rheumatological services in Iraq have not developed in response to the magnitude of the existing burden. Morning stiffness was reported fairly frequently by individuals without rheumatoid arthritis, but the significance of this observation is not easy to determine. Raynaud's phenomenon was also recorded, but comparative evaluation of the findings is not possible.

The impression is widespread in Iraq that rheumatic disorders are rare. This leads to the health authorities making relatively little provision for rheumatic patients, there is only one rheumatology unit in a country with a population in excess of 10 million,* and little teaching on these diseases is included in the medical curriculum. Our clinical experience in Baghdad (Al-Rawi *et al.*, 1977) led us to think that this impression was incorrect. Rheumatoid arthritis (RA) was encountered not infrequently, and in general the clinical picture was similar to that seen in Europe and North America. However, the hands were usually affected more frequently than the feet, and severe systemic and extra-articular manifestations and radiographic changes appeared to be less common. In view of the implications of this clinical record, we decided to undertake population surveys to establish the prevalence of RA on a more representative basis.

Methods

Iraq is divided into 16 Muhafada or counties. 10 of these Muhafada were selected for study so as to represent differences in ethnicity and in geography. With the advice of the local medical health service administrator, one town and its immediate environs were chosen in each Muhafada. The local inhabitants were informed of the aim of the study and other pertinent details by leaflet distribution by the local authorities and public health staff a few days before starting the study. The whole adult population of the first author's home town, Rawa in Alanbar Muhafada, was studied, and every third household by street address in selected areas in the towns in the other 9 Muhafada. If some inhabitants of a house were working far away or were otherwise difficult to see, that house was omitted and the one immediately adjacent was substituted.

The survey group consisted of the four authors, each of whom was accompanied by a social worker or nurse and by a public health officer. Each team visited the selected houses and recorded demographic data on all persons aged 16 years or more. Questions were asked about the presence of back or joint complaints, experience of joint swelling, which joints were affected and the duration, morning stiffness, and the presence of Raynaud's phenomenon. The hands and feet were examined routinely, but other joints only if the history was suggestive. Individuals suspected of having rheumatoid arthritis were referred to the local hospital for further study by one of us (Z.S.A.), and radiographs of the hands and feet and a Rheumaton test were carried out. Radiographs were evaluated in four grades according to the *Atlas of Standard Radiographs of Arthritis* (1963). The Rheumaton test is a modified Rose-Waaler technique that yields positive or negative results without an array of dilutions.

Results

A total of 6999 of the adult residents of 10 Iraqi towns were examined (Table 1). A minimum sample

Accepted for publication May 20, 1977
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*This takes no account of facilities available to the armed services, and since this paper was written, two additional rheumatology units have been established.

Table 1 *Prevalence of definite rheumatoid arthritis in 10 counties in Iraq*

Muhafada (county)	*No. in sample*	*No. with definite rheumatoid arthritis (%)*
Alanbar	2387	27 (1·13)
Alqadisiya	369	3 (0·81)
Arbil	601	5 (0·83)
Babylon	486	5 (1·02)
Baghdad	518	5 (0·96)
Basrah	801	7 (0·87)
Diala	403	3 (0·74)
Kerbala	672	8 (1·19)
Kirkuk	301	3 (0·99)
Nineveh (Mosul)	461	4 (0·86)
All Muhafada	6999	70 (1·00)

Table 2 *Age-specific prevalence of joint complaints and rheumatoid arthritis in Iraqi population samples*

Age group (yr)	*No. in sample*	*No. with joint complaints (%)*	*No. with definite rheumatoid arthritis (%)*
16–24	2200	140 (6·4)	1 (0·05)
25–34	1455	192 (13·2)	7 (0·48)
35–44	1235	212 (17·2)	15 (1·21)
45–54	996	213 (21·4)	14 (1·41)
55–64	604	142 (23·5)	16 (2·65)
65+	509	110 (21·6)	17 (3·34)
All ages	6999	1009 (14·4)	70 (1·00)

of 300 individuals was seen in each town, and completion rates ranged between 79 and 92%, the overall figure being 88%. The most representative sample was in Rawa, comprising 92% of the total adult population of the town. The age composition of the combined samples is shown in Table 2, and corresponds closely to that of the country as a whole as determined in the 1973 study (Alimam, 1973); 50% of the total population was under the age of 16 years.

Joint complaints were reported by 1010 individuals (14%, Table 2), being slightly commoner in females. They increased in frequency with age but did not show any appreciable difference between different occupational groups. A total of 89 people (1·3%) had probable or definite RA; only 19 of these had probable RA by the ARA criteria (Ropes *et al.*, 1957) and they are not considered further. The overall frequency of definite RA did not differ appreciably between the different Muhafada (Table 1), ranging from Basrah near the Arab Gulf to Arbil 500 m above sea level in the mountains of Kurdistan. The expected increase in frequency with age was seen (Table 2), and even more striking was the increase in frequency as a proportion of all joint complaints, rising from less than 1% in the youngest group to 16% of those aged 65 years and more. In these tables the sexes have not been shown separately; the relative proportions were fairly consistent in each of the samples, averaging 3·4 females for each male with RA.

Almost half those with joint complaints experienced problems at more than one site. The knees and the back were both affected in 43% of those complaining, the feet in 16%, the hands in 14%, and the shoulders in 5%. 10% of those with complaints had suffered for 5 years or more, although the majority, 70%, had experienced trouble for short periods up to a year. As would be expected, the rheumatoid individuals had suffered for longer periods, only 7% with durations up to one year and 26% for 5 years or more. Respondents were assigned to seven occupation groups, but when account was taken of age and sex there was no appreciable difference between the observed frequencies of RA. The groups were also combined into three classes representing social status. Numbers in the upper income class were very small; between the other two classes there was no significant difference in the prevalence of RA. Most of the respondents were Arab, but 9% of the samples were Kurd, 4% Turkuman, and 1·4% of other minority ethnic groups; RA was encountered with similar frequency in each of these four ethnic groups.

Three of the 70 individuals with definite RA declined to attend hospital for further investigation, and in those who were referred the Rheumaton test was not carried out in 4 and radiographs were not taken in 6. Of the 67 who did attend hospital the Rheumaton test was positive in 12 (18%), there were radiographic changes of grade 2 or more in 18 (27%), and both these tests were positive in 29 (43%) —the latter thus fulfilling the criteria for classical RA; of the 61 individuals who were *x*-rayed 5% had grade 4 abnormalities, 25% had grade 3 changes, and 48% showed grade 2 characteristics.

Morning stiffness was recorded in five times as many individuals as suffered from RA, and in two-thirds of these its duration exceeded 30 minutes. Raynaud's phenomenon was observed in 1% of male respondents and in 3% of female respondents.

Discussion

It is understandable that a country with major public health problems reflected by a high mortality in infancy and childhood is unlikely to pay much attention to the chronic conditions developing in older members of the community. Certainly such was the situation in Iraq, although there have been striking advances in most medical services recently. However, with only one rheumatology unit in the country, a majority of the patients that do come to the attention of the health services have to be dealt

with by orthopaedic surgeons, internists, or even neuropsychiatrists. Moreover, these specialists will usually have had little specific training in rheumatology; such training has been available at the Baghdad University Medical College only within the last 3 years.

In common with experience in other developing countries, however, the results of this survey show that improvements in life expectancy are rapidly associated with a prevalence of RA in the survivors that approximates to that in industrialised countries with much older populations. Thus our observed frequency of RA, 1% in those aged 16 years or more, is similar to that recorded in Northern Europe (e.g. Lawrence, 1961) and in the USA (e.g. O'Sullivan *et al.*, 1968).

While this survey has shown the same disappointing lack of differences previously reported in relation to geography, climate, ethnicity, and occupation, the results are nevertheless valuable. In the first place, this is the first large survey carried out in an Arab population, and the similar susceptibility to RA of this ethnic group is important to establish. The high completion rate accomplished in a population unaccustomed to this type of inquiry is also encouraging. Perhaps more important, though, and certainly so as far as the authors are concerned, is that the evidence gained in regard to RA and other articular problems should influence the health authorities to improve the provisions for rheumatological care in Iraq. This would be in accord with the recent deliberations of the World Health Assembly.

One other aspect of the results also calls for comment. The frequency of morning stiffness is fairly high, occurring in 4% of individuals without RA. The relationship between morning stiffness and other articular disorders, particularly arthrosis, remains somewhat confused. However, in the present survey there were other difficulties in the way of satisfactory interpretation. An appreciable proportion of the respondents had a very low level of literacy and a physically demanding way of life. Their ability, first to conceptualize and then to identify in themselves, a phenomenon that may well have been strange to them, to say nothing of its other possible connotations, is therefore open to question.

We are indebted to Dr I. Mustaffa, Minister of Health, for help and facilities; to the individual respondents and to the local authority and public health staff in each Muhafada who co-operated in the survey; to our colleagues, Drs N. H. Marjana, H. Alshakarchi, A. F. Aljobori, and other staff of the Rheumatology Unit, and Dr N. M. Behjet and the staff of the Rehabilitation Institute, for much help; to Mr A. S. Alrubaei, Director of Vital and Health Statistics, Ministry of Health; and to Dr Philip Wood of Manchester for advice on the conduct of the survey and assistance in the preparation of this report.

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