Prevalence of Rheumatoid Arthritis in the South-Transdanubian Region of Hungary Based on a Representative Survey of 10,000 Inhabitants

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ABSTRACT. ***Objective.*** To assess the prevalence of rheumatoid arthritis (RA) in a representative study of the South Transdanubian region of Hungary.

Methods. Ten thousand individuals aged between 14–65 years were interviewed. The stratified sample was representative for age, sex and urban/rural residence structure of the regional population of the South-West Hungarian region. As a second step, all individuals with possible RA were asked to undergo a clinical investigation to confirm the diagnosis of RA according to the American Rheumatism Association (ARA) 1987 criteria. Of 10,000 interviewed individuals, 632 reported having RA or symptoms including digital pain, stiffness, and/or swelling. Two hundred and twenty-four individuals were investigated clinically. Individuals fulfilling the 1987 ARA criteria were considered as having definite RA, and their clinical data were evaluated.

Results. RA was confirmed in 13 cases. The male/female ratio was 3/10. The prevalence of RA among individuals aged 14–65 years was 0.37% (95% confidence interval, CI: 0.26–0.51), 0.23% (95% CI: 0.15–0.35) in men and 0.48% (95% CI: 0.35–0.64) in women.

Conclusion. The prevalence of RA in the South Transdanubian region of Hungary is similar to those of other recent studies from other regions around the world. (J Rheumatol 2005;32:1688-1690)

Key Indexing Terms:
RHEUMATOID ARTHRITIS PREVALENCE EPIDEMIOLOGY

The prevalence of rheumatoid arthritis (RA) strongly depends on the diagnostic criteria and epidemiological methods used, and estimation of the prevalence may also differ significantly in various studies depending on ethnicity, time period, and age group investigated. It is therefore difficult to compare findings of different studies because of differences in criteria used to define RA and in methods of recruiting patients. The need for more standardized methods has been stressed[1]. Despite these difficulties, a large number of studies on RA prevalence using the revised 1987 American Rheumatism Association (ARA) criteria show a remarkable consistency with the exception of only a few areas in the world[2,3].

Our aim was to provide relevant, extensive, population-based Hungarian data on the prevalence of RA.

MATERIALS AND METHODS

Study participants. We interviewed 10,000 inhabitants of the South-Transdanubian region of Hungary aged between 14-65 years. The refusal rate was 21.5%. The sample was representative of the demographic and social characteristics of the regional population regarding age, gender, and type of residence. The quoted sample was provided by the Hungarian Central Statistical Office of Baranya County by a multistep procedure.

Responders were visited by professional interviewers. Data recording was performed in May and June 2002.

Questionnaire. RA-related questions in this questionnaire were (1) Do you know whether you have rheumatoid arthritis? and (2) Have you ever experienced joint swelling or pain in both hands lasting at least a week, or joint stiffness in both hands in the morning lasting at least 30 minutes?

Evaluation. Individuals answering positively to one of these questions were asked to undergo a clinical investigation comprising a history and physical examination. Hand radiographs and laboratory tests were also performed. For the diagnosis of RA, the revised ARA criteria were used[4]. The same interview and clinical examination were performed on a control sample giving a uniform negative answer to all of the RA–related questions.

Analysis. Data were analyzed using SPSS for Windows 11.01, and SPSSP Answer Tree 2.1.1[5].

RESULTS

Ten thousand people (5515 women, 4485 men) were inter-

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viewed. The mean age (± standard deviation, SD) of the women was higher (43.4 ± 14.3) compared to the men (40.6 ± 14.3). Table 1 summarizes the age and sex distribution of the study population. Fifty-six percent of the population lived in 34 towns and 44% lived in 619 villages in the area.

Clinical investigation of suspected cases. Table 2 shows the percentages of individuals with different symptoms. Among women joint complaints were more frequently experienced compared to men. The proportion of cases with joint symptoms increased with age especially in women.

More than 95% of the 14–19 year age group had never experienced these symptoms compared to 62–74.6% of the 60–65 year age group. Seventy percent (7301 people) reported never having joint pain, swelling of the hands, or joint stiffness.

All 3 symptoms were frequently found in 410 cases (4.1%); 311 of these gave informed consent for further clinical investigation, and 171 underwent clinical and laboratory investigations in our department.

Three hundred and ten cases reported having RA. During the interview, 228 of these consented to a clinical investigation and 104 individuals attended the clinic.

Table 1. Age and sex distribution of the study population.

Age, yrs	Male	Female	Total
14–19	367	297	664
20–29	859	860	1719
30–39	862	1051	1913
40–49	980	1112	2092
50–59	910	1255	2165
60–65	507	940	1447
Total	4485	5515	10000

Combining those reporting symptoms and those who reported having RA, there was a total of 632 cases; 471 provided informed consent and 224 individuals participated in a clinical investigation at our department (Figure 1).

RA was confirmed in 13 cases. The male/female ratio was 3/10. The prevalence of RA between 14–65 years was 0.37% (95% CI: 0.26–0.51), 0.23% (95% CI: 0.15–0.35) in men and 0.48% (95% CI: 0.35–0.64) in women.

For other reasons another 181 individuals were also investigated. These cases participated in a different part of the study and had complaints unrelated to RA (Figure 1). None of these latter cases had RA by clinical investigation.

DISCUSSION

Our approach was to start with a large population-based representative study to identify all individuals who either believed they had RA or presented the triad of symptoms including morning stiffness, joint swelling, and joint pain in both hands. A "redundant" strategy was followed, and a large number of individuals were investigated. We believe this approach made it possible to identify all potential cases because we did not find any patients with RA among the individuals who did not report any of the symptoms (Figure 1).

In our study RA was confirmed in 13 cases, which represents a prevalence of 0.37%. This is similar to studies using revised 1987 criteria for RA[6-14]. One cause of lower prevalence could be that the 1987 ARA criteria are more specific for RA[4,15]. On the other hand there have been several epidemiological studies examining the role of genetic factors, sex hormones, contraceptive hormones, postmenopausal estrogen use, and infectious and non-infectious environmental factors in the incidence and prevalence of RA.

Results from our large population-based study indicate

Table 2. Percentages of individuals with different symptoms. Results are expressed as percentages.

	Joint Swelling[a]	Joint Pain[b]	Morning Stiffness[c]
Complaint was present			
Do not know	0.8	0.7	0.9
Frequently	7.2	9.7	14.0
Occasionally	8.9	11.7	—[d]
Never	83.1	78.0	85.1
Sex distribution			
Female	21.1	26.4	17.3
Male	9.9	15.1	10.1
Joint symptoms in different age groups			
Male			
14–49 yrs	12.1	13.9	13.5
50–65 yrs	15.7	17.9	18.6
Female			
14–49 yrs	25.5	25.1	24.7
50–65 yrs	46.8	43.1	43.2

[a] Have you ever experienced joint swelling in both your hands lasting at least a week? [b] Have you ever experienced joint pain in both your hands lasting at least a week? [c] Have you ever experienced morning joint stiffness in both your hands lasting at least 30 minutes? [d] For morning stiffness, the only possible responses were: do not know, yes, or no.

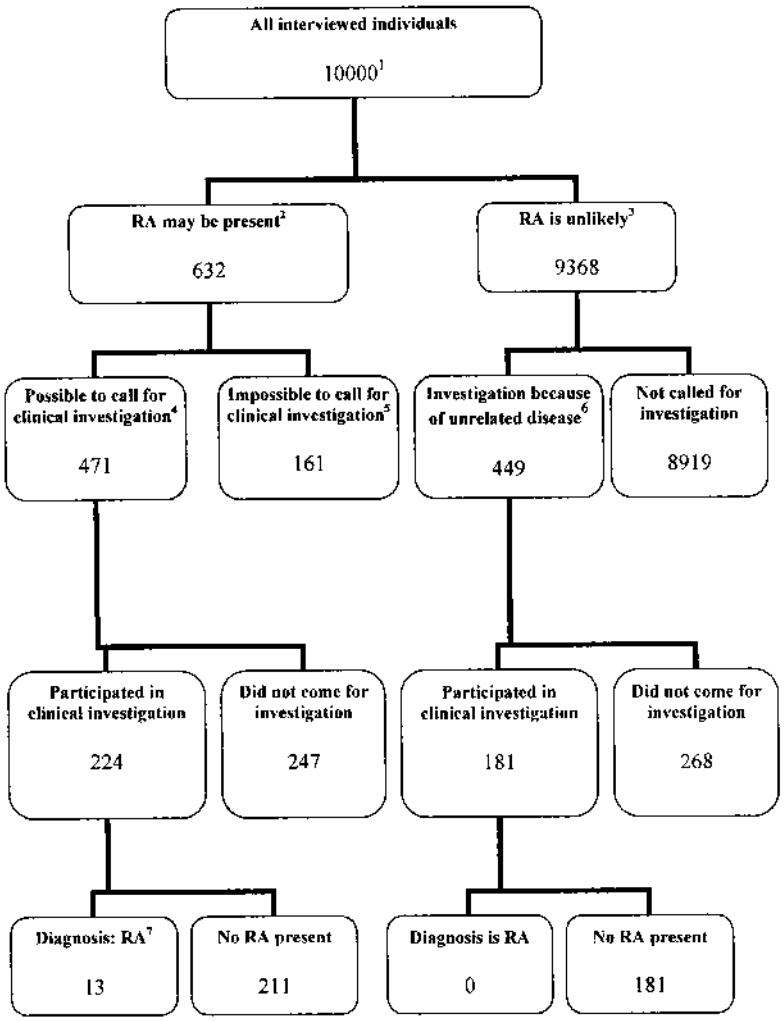

Figure 1. Investigation strategy for the identification of cases with rheumatoid arthritis. [1]Number of cases; [2]suspected cases who either declared the presence of RA or mentioned RA related complaints, or both; [3]interview probands who did not declare any information to indicate the presence of RA; [4]individuals who provided informed consent for a further clinical investigation; [5]individuals who wanted to remain anonymous; [6]individuals who provided informed consent for a further clinical investigation of an unrelated arm of the study [these cases came for clinical investigation due to a disease unrelated to RA (predominantly Raynaud's phenomenon)]; and [7]individuals in whom RA was confirmed based on ARA criteria by an experienced investigator, and further confirmed by another expert.

that the prevalence of RA in our Central European region is similar to that found around the world.

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