Epidemiology of Rheumatic Diseases in Greece

To the Editor:

We read with interest the recent article by Dr. Andrianakos and colleagues, concerning the prevalence of rheumatic diseases in Greece. The study of the descriptive epidemiology of rheumatic diseases in several countries and areas of the world is of interest, as the occurrence of these diseases seems to present significant variations among different populations. Ethnic, racial, and geographic factors have been associated with the frequency and expression of several rheumatic diseases. However, the role of possibly related environmental and genetic factors remains uncertain. There is scarce information on the incidence and prevalence of rheumatic diseases in Southern European and Mediterranean countries. The investigation of the epidemiological profile of rheumatic diseases in these countries would be of interest because of the possible role of environmental and lifestyle factors characterizing their populations.

From this point of view the article by Andrianakos, et al offers interesting data concerning the prevalence of rheumatic diseases in the Greek population. The study was carried out in a sample of 8740 Greek adults, and was based on a standardized questionnaire as well as clinical and laboratory evaluation of participants (ESORDIG Study).

Our study group has implemented a systemic recording system of autoimmune rheumatic diseases in a defined area of northwest Greece with a population of about 500,000 inhabitants, in order to study the epidemiological profile of these diseases in the area. Thus we compared our data to the results of the ESORDIG Study. The prevalence rates we estimated in northwest Greece are similar to those of the ESORDIG study for some autoimmune rheumatic diseases, but differ significantly for some others.

Specifically, the age-adjusted prevalence rate for systemic lupus erythematosus (SLE) was found to be 0.04% in northwest Greece and 0.05% in the sample of the ESORDIG study. However, for rheumatoid arthritis (RA) the prevalence rates estimated in the 2 studies were 0.33% and 0.67%, respectively. For psoriatic arthritis (PsA) the respective prevalence rates were 0.06% and 0.17%, and for ankylosing spondylitis (AS) 0.03% and 0.24% (unpublished data). It is impressive that the 2 studies found very similar rates for SLE, but for the other autoimmune rheumatic diseases the prevalence estimated by the ESORDIG study is 2 to 8-fold higher than the prevalence estimated in northwest Greece. The differences observed are statistically significant, and this is obvious considering the 95% CI presented by the authors. What could be the possible explanations for these differences?

The Greek population is a relatively homogeneous Caucasian population. There are no important ethnic, racial, or socioeconomic differences between the population of northwest Greece and the areas included in the ESORDIG study. Environmental factors such as climate or nutrition are not likely to differ significantly among the areas studied.

The differences observed could represent a possible overestimation by the ESORDIG study or underestimation of the prevalence in northwest Greece studies. Considering the first possibility: (1) The sampling method in the ESORDIG study could be related to a possible selection bias. From an initial target population of 14,233 individuals invited to participate, a total of 8740 were finally examined (total response rate 61.4%). It is possible that subjects with rheumatic disorders or symptoms had an increased probability to respond to the study. However, the authors state that analysis of data of a random sample of nonresponders showed no significant difference from responders with respect to age, sex, and prevalence of rheumatic symptoms or diseases. In any case a possible selection bias cannot explain a 2 to 8-fold higher prevalence of autoimmune rheumatic diseases. (2) Another possible explanation could be related to different application of diagnostic criteria. This is more probable for PsA and AS, as definition criteria are not clear enough for these diseases. Misclassification of cases could partly explain the differences observed. (3) The sample investigated in the ESORDIG study could not be considered as representative of the general Greek population, since it does not include any area of northwest Greece or other departments of Greece (central midland area or the islands area). However, it is unlikely that the areas included in this study represent a population characterized by such a higher prevalence of rheumatic disease.

On the other hand, the systematic recording system implemented in northwest Greece could partly underestimate the prevalence of these diseases, as it is based on diagnosed cases. In our studies the epidemiology of autoimmune rheumatic diseases in this area we estimated that only a small number of mild cases could escape the recording system, as it is relatively complete, using multiple sources of retrieval.

Comparing the findings of the Greek studies to international data, we could say that the ESORDIG study estimated a prevalence rate of RA higher than those found in other southern European countries, and prevalence rates for PsA and AS higher than those found even in northern European countries or in the United States. In contrast, the prevalence estimated for SLE was lower than in other countries. The prevalence rates estimated by our group were about half those found in northern European countries or areas of the USA, for all these diseases. We also found a milder expression of the diseases in our study population. Studies from other southern European countries also indicated a relatively low frequency and milder expression for autoimmune rheumatic diseases, and these findings may be related to environmental and lifestyle factors characterizing these areas.

We consider that the ESORDIG study overestimates the prevalence of autoimmune rheumatic diseases in the Greek population, especially the prevalence of AS. A more complete investigation is needed in order to describe the epidemiological profile of these diseases in the whole country. This includes a representative sample of the general population, and study of the incidence and severity (and not only the prevalence) of cases for each disease, as well as their distribution by sex, age, and socioeconomic groups.

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Dr. Andriamakos, et al reply

To the Editor:

We thank Dr. Alamanos and coworkers for their comments and their interest in our article1. In comparing the results of our cross-sectional population based epidemiological study of rheumatic diseases in Greece (ESORDIG study)2 to the results of their studies3,4 based on diagnosed cases in 2 hospitals and private rheumatologists’ offices in northwest Greece, Alamanos, et al comment on the prevalence rates of some inflammatory rheumatic diseases. Their estimated prevalence rates for rheumatoid arthritis (RA), psoriatic arthritis (PsA), and ankylosing spondylitis (AS) at 0.33%, 0.06%, and 0.03%, respectively, were indeed very low, compared to those we found (0.67%, 0.17%, and 0.24%). We agree that differences in the prevalence rates could be attributed either to a possible overestimation in our study or to underestimation in the northwest Greece studies.

Regarding an overestimation on our part: In stating that the participation rate in our study was 61.4%, leading to a possible selection bias effect, Dr. Alamanos and coworkers are mistaken: the participation rate was 82.1%, as we reported. A more cautious reading of our article reveals that the ESORDIG study population consisted of the total, nonselected adult population of 0.62% and 0.47%, respectively. In a study of 0.62% and 0.47% of adults, respectively, which are almost identical to those of the ESORDIG study (0.67% and 0.49%, respectively). In a study from Spain, Carmona, et al found an RA prevalence of 0.5%. The prevalence rates for AS and PsA, estimated by Braun, et al in Berlin were at the level of 0.86% and 0.29%, respectively. On the other hand, studies in the USA have reported a prevalence rate for RA of approximately 1% and for PsA of 0.1%, although the latter has been considered to be underestimated6.

It is quite clear that methodological differences exist between our population based cross-sectional epidemiological study and the studies by Drs. Alamanos and Drosos and coworkers1,7, which were based on diagnosed cases in 2 hospitals and private rheumatologists’ offices and then extrapolated to the population of northwestern Greece. It is our strong belief that methodological differences are the most likely explanation for discrepancies in RA, PsA, and AS prevalences between the northwest Greece studies and our ESORDIG study traffic.

To our knowledge, the ESORDIG study is the first population based, cross-sectional epidemiological study that has simultaneously assessed the prevalence of all rheumatic diseases in the general adult population. The
study, based on a standardized questionnaire as well as on clinical evaluation and laboratory investigation of the participants, was carried out in both phases exclusively by experienced rheumatologists who visited a representative sample of the Greek general adult population at their homes. Therefore, the estimated age and sex adjusted prevalence of all rheumatic diseases, including RA, PsA, and AS, can be considered to be representative of the prevalence of these diseases in the general adult population of Greece.

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REFERENCES

Correction
Saunders D. Coping with chronic pain: what can we learn from pain self-efficacy beliefs. J Rheumatol 2004;31:1032-4. The author’s correct E-mail address is “douglas.saunders@utoronto.ca” We regret the error.