

Prevalence of systemic lupus erythematosus in central Saudi Arabia

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ABSTRACT

Objectives: Although systemic lupus erythematosus of varying severity has been seen in our clinics, there is no information regarding the prevalence of the disease among Saudi nationals. We conducted this study to determine the prevalence of systemic lupus erythematosus in Al-Qaseem region of the Kingdom of Saudi Arabia.

Methods: A community survey of towns and villages in the Al-Qaseem area of central Saudi Arabia was conducted in 3 phases to determine the prevalence of systemic lupus erythematosus in the region.

Results: Of the 10,372 studied, 2 cases of systemic lupus erythematosus were identified using the criteria set

for the diagnosis of systemic lupus erythematosus by the American College of Rheumatology. Based on that, the prevalence of systemic lupus erythematosus was estimated to be 19.28 per 100,000 population in the region.

Conclusion: The estimated prevalence of systemic lupus erythematosus in Al-Qaseem area is similar to that found in western countries.

Keywords: Systemic lupus erythematosus, epidemiology.

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Systemic lupus erythematosus (SLE) is a global disease with varying reported prevalence. Most estimates of prevalence came from case finding studies using physician or clinic data, while community surveys of the prevalence of SLE were carried out only occasionally.¹⁻⁶ In the Kingdom of Saudi Arabia, a number of studies looked at the pattern of SLE in certain hospitals.⁷⁻⁹ However, the prevalence of the disease in the community was not explored. We set out to ascertain the prevalence of SLE in the central area of Saudi Arabia (Al-Qaseem) through a community survey as a part of a study on the prevalence of rheumatic disease in that area.

Methods. The Al-Qaseem province has a population of 660,000 based on 1992 census with an expected yearly population growth rate of 5%. The region was divided into 3 strata according to the

population density; large (>20,000 population), medium (5,000-20,000) and small (<5,000). Random samples were selected from each of the large and medium-sized population. While the 3rd stratum of 5 villages was selected with probability proportionate to their size. Each village was treated as a cluster and the number of households in each cluster or village was noted. The work was divided into 3 phases. During the first phase, trained nurses administered personal interviews to all inhabitants of the selected households so as to identify the symptoms of rheumatic diseases. This involved obtaining answers to questions on age, sex, musculoskeletal complaints, skin rashes, photosensitivity, mouth ulcers, alopecia, seeking of specialist opinions and what diagnosis was given by the specialist. In the 2nd phase, a more discriminatory detailed questionnaire was

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administered by trained nurses to those who were identified in Phase 1 as having symptoms and signs suggestive of rheumatic diseases. The questionnaires required answers to more specific questions about the type of joint pain, their site, time of onset, period of pain, course, number of painful joints, pattern of joint involvement, skin rashes and their sites, fever, fatigue, hair loss and Raynaud's phenomenon. During the 3rd and final phase, the individuals identified in Phase 2 were interviewed and examined by one of the participating consultant rheumatologists. The individuals in phase 2 had determination of antinuclear antibodies (ANA) in serum samples obtained at that stage using indirect immunofluorescent technique on Hep 2 substrate. The 1982 American College of Rheumatology criteria for diagnosing SLE was utilized in the diagnosis.¹⁰

Results. A total of 10,372 individuals were screened with ages extending from one year to 85 years. Four thousand, four hundred and eighty-one were under the age of 16 years while 5,891 were older than 16 years. There were 5,035 males (48.5%) and 5,337 females (51.5%). Out of 10,372, who were in the first phase of study, 1721 entered the 2nd phase and out of this, 180 individuals entered into the 3rd phase. After full interview and examination by a consultant rheumatologist of those 180 individuals, and after combining the results of ANA testing carried out in phase 2 with rheumatologist's interview and examination in phase 3, only 2 patients were found to have SLE according to the ACR. The 2 patients were young females - ages 25 and 31 years, with history of polyarthritis, facial rash, positive ANA, Raynaud's phenomena and thrombocytopenia. One of them also tested positive for anti-double stranded deoxy-ribonucleic acid antibodies (anti-DNA(ds)). The finding of 2 cases among 10,372 would make an estimated point prevalence of SLE in this community to be 19.28 per 100,000 population.

Discussion. Our study utilized a 2-way approach culminating in a more personalized examination by a consultant rheumatologist of individuals and results of laboratory examination. In the first stage, we sought to find the rheumatic complaints which are present in the community by means of an all embracing questionnaire which later on was narrowed to questions about symptoms and signs of SLE and finally, we focused by means of a rheumatologist interview and examination coupled with the serological test data on finding those individuals who satisfied the SLE diagnosis. The finding of only 2 cases among the 10,372 makes a point prevalence of 19.28 per 100,000. These figures fall within the range of prevalences reported from

different parts of the world.¹⁻⁶ Our figures are similar to those obtained in Denmark (21.7/10,000).¹¹ However, it is much less than that reported from some parts of the United States of America (USA) (372/100,000).¹² This USA study was based on self-reported diagnosis of SLE which may have greatly overestimated the occurrence of SLE. On the other hand, the study by Malaviya et al found a low rate of prevalence (3.2/100,000) in their community survey in India utilizing a 2-way approach somewhat similar to ours.¹ The etiology of SLE is still unknown and thought to be due to an interplay of genetic and environmental factors.¹³⁻¹⁵ These environmental factors are more common in more urbanized and industrialized communities.¹⁵ The Qaseem region studied here is mostly rural and non-industrialized. This may partly explain the lower rates of prevalence found in this region. It is unlikely that mild cases have been missed in this survey since the questionnaires in the first phase were all embracing to rheumatic diseases. Although cases with non-joint or skin presentations of SLE may have been missed by our survey which may have lowered our figures of prevalence, we think this is unlikely since the questionnaire included questions regarding other non-rheumatic illness and questions regarding seeking medical advice and diagnosis given by medical practitioners in the past.

In conclusion, the prevalence of SLE in this large region of Saudi Arabia is within the range of prevalence recorded elsewhere.

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