Epidemiology of Sarcoidosis: Ethnic and Geographic Considerations

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OVER 100 years after the description of sarcoidosis by Dr. Jonathan Hutchinson, the disease continues to remain an enigma, its etiology unknown. The prevalence varies.

Estimations in New York City's predominantly black neighborhoods among blacks by Siltzbach[1] are as high as 64 per 100,000 while in white neighborhoods, it was as low as seven per 100,000. In the Scandinavian countries where there are only a few blacks, it is common among whites. The highest prevalence rates observed in the course of the international survey of Kveim testing were recorded in Sweden where rates were 64 per 100,000 based on x-ray study of approximately two million persons observed from 1953 to 1960. World wide and focally concentrated, sarcoidosis is common in Japan, but uncommon on the Asian continent and rare in Africa.

The reservoir of prevalence is related to the incidence of chest x-rays taken in the community and this reservoir may be an ocean instead."[2] The number of asymptomatic persons harboring epitheliod granulomata of sarcoidosis who improve without residua may never be known. Patients seen clinically, therefore, represent only a small fraction of the total number, and many of these are discovered incidental to a chest x-ray taken to satisfy a job requirement or accident, rather than because of symptoms due to sarcoidosis.[2]

The early concept of sarcoidosis being a severe disease has yielded to that of a mild disease in most who are afflicted. The exceptional patient has severe chronic unrelenting illness.

The latest epidemiologic studies of sarcoidosis were presented in Tokyo during the VIth International Conference on Sarcoidosis, September 9-16, 1972.[3] Hasada and associates presented data on prevalence of sarcoidosis in Japan. Using mass survey chest x-rays on elementary and high school pupils, they found the prevalence to be one or two per 100,000 pupils with northern districts having a higher prevalence than southern. Hiraga and associates conducted a similar study on a Japanese working group, predominantly male throughout the country. Their study began in 1961. They confirmed the geographic distribution and noted that incidence rates were one per 100,000 per year but climbed to two in 1968 and 1969. Lee conducted a search for sarcoidosis in Korea. Some tuberculin positive cases of BHL were detected. He plans to Kveim-Siltzbach test the tuberculin negative ones. Wu and Yang commented on the rarity of sarcoidosis in Taiwan, only six cases having been discovered in the past 15 years. Bivornkitti reported finding only "a few cases" of sarcoidosis in Thailand.

In Eastern Europe, Virsik and associates from Czechoslovakia reported on a longitudinal study in West Slovakia, along the left bank of the Danube River. Chest x-rays of the largely agricultural population were carried out over three year intervals from 1963 to 1970. The preva-

lence there is 9.6 per 100,000 persons. The incidence being one case per 100,000 per year. Centea reported on epidemiological studies from Northwest Romania which began in 1950. He studied 120 cases, most of which were diagnosed during the later years and were attributed to better methods for diagnosis. Prevalence and incidence rates were not given. Likewise for Yugoslavia, Goldman and Djuric reviewed 293 cases up until 1966 and added 670 cases during the 1967 to 1971 period. Base population figures of the survey were not given. Data collected in Italy was reviewed by Blasi and Olivieri on a limited sample study of five northern continental cities and four southern peninsular cities over a five year period. They used the registration form of Ole Horwitz in Denmark. The prevalence in the North based on mass x-rays was 14.1 per 100,000 while in the South it was only 1.31 per 100,000. They also indicated the usefulness of mass chest x-rays in making the diagnosis. The similarity in prevalence of sarcoidosis in North-South geographic oriented Italy and Japan is noteworthy. Behrend found the prevalence of sarcoidosis in a city in West Germany to be 1.85 per 100,000 population. Denmark, like Czechoslovakia, is a country where sarcoidosis is a reportable disease. Selroos has shown the incidence to be 9.2 per 100,000/year from 1967-1970. In previous years, 1962-1967, the incidence was 5.3 per 100,000 per year. The increasing incidence of sarcoidosis in Finland was thought to be due in part to improved diagnostic methods and better knowledge of the clinical features of sarcoidosis.

Reports from the Fifth International Conference on Sarcoidosis, Prague, 1969[4] contained a section on epidemiology. Israel analyzed sarcoidosis discovered in veterans in various geographic areas. He found the incidence 12 times higher in blacks. Brett has shown that sarcoidosis is being diagnosed more frequently among Irish women and West Indians living in north London, than those born in the United Kingdom. The prevalence rate of sarcoidosis among persons born in the United Kingdom was 27 per 100,000 and there was no difference between the sexes. The prevalence of persons of Irish nativity, but living in North London was 155 per 100,000 with a greater case rate 2:1 in women. The prevalence of north London dwellers of West Indian nativity was even higher, 183 per 100,000. The data was based on output from a static mass x-ray unit in north London. When observed over 10 years—persons of Irish and West Indian origin had higher incidence and prevalence of sarcoidosis than the indigenous English population.

Delormas, Coulibaly, and Pignol reported four observations of biopsy diagnosed sarcoidosis from the Ivory Coast. The authors believed their findings did not coincide with the idea that sarcoidosis was scarce in African blacks but frequent among American blacks. Also rare in India, Chakravarty reported only two biopsied cases and seven probable cases.

Steinbruck and Zaumseil of East Germany reported on prevalence of sarcoidosis in 1967 to be 31.3 per 100,000, again based on mass survey data and registration. Behrend in West Germany has ascertained active sarcoidosis in 273 of 545,342 persons in Marburg, 50 cases per 100,000. The peak prevalence was found in the Biedenkopf district with a prevalence of 98 cases per 100,000. All reporting was again discovered by mass radiography and reported to the investigators. "Acute Sarcoidosis" (BHL with Arthralgia) was found in the above patients with increasing frequency.

Beskow and Wiman in Sweden reported on familial sarcoidosis. They reported on a family in which 11 persons in two generations had the disease and another family in which three members of one generation had it.

Bourilkov of Bulgaria noted the infrequency with which sarcoidosis is associated with silicosis in miners. Levinsky and associates in Czechoslovakia announced that the Ministry of Public Health is preparing a compulsory notification of sarcoidosis parelleling the reporting of tuberculosis.

World-wide epidemiologic studies are based on techniques most likely to yield results, that is, the mass chest x-ray and the reporting forms. Unfortunately, in the U.S., mass x-ray for the detection of tuberculosis is no longer effective for that means and most mass radiography programs are being phased out.[5] This will necessitate a revival of the mobile 14x17 teleoroentgenogram using acceptable techniques.[6]

Epidemiologic reporting reveals with few exceptions in countries in the Northern Hemisphere reported with a predominent North-South geographic orientation, sarcoidosis is more prevalent in the northern halves of the countries.

It is unlikely that epidemiologic studies alone will discover the etiology of sarcoidosis, whose etiology has remained as elusive as a willow-the-wisp. Collaboration involving many scientific disciplines may be necessary.

The NHLI Panel on Granulomatous Lung Diseases[3, 6] considers sarcoidosis in the United States *prevalent enough to be a national health problem.* Recommendations for future study of this disease include the development of a reliable and specific invitro test for sarcoidosis, and epidemiologic studies to determine late consequences of immunologic abnormalities. Determination of the frequency of allergic disorders, viral, bacterial, fungal infections, neoplasia and autoimmune diseases is essential. It has been further recommended by the panel, that the immunologic status of several population groups be determined prior to development of sarcoidosis. They recommended study of comparable ethnic groups in the rural south and urban north to determine the effects of air pollution and geographic factors. Further study of genetic mechanisms in the familial occurrence of sarcoidosis was urged and a determination as to whether the greatest age incidence of the disease is reflection of constitutional factors or exposure to infectious agents.

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IMMUNIZATION ACTION MONTH

As part of a continuing effort to reduce the incidence of childhood diseases and eliminate the threat of widespread epidemics, the U.S. Center for Disease Control has designated October, 1974, as "Immunization Action Month." The goal of the program is to increase the number of children immunized against polio, measles, mumps, rubella, diphtheria, tetanus and pertussis.

Several major medical organizations have joined the CDC in its program to increase the immuni y levels among inadequately or unimmunized preschool children. These include the American A:ademy of Ped atrics, the American Medical Association, the American Academy of Family Physicians, the National Medical Association, the American Osteopathic Association, the American Nurses' Association, and the National League for Nursing. The American Academy of Pediatrics is coordinating the activities of the major medical organizations in the 1974 IAM program.