

## Is There a Seasonal Clustering of Onset of Acute Sarcoidosis in Ankara?

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### Abstract

The etiology of sarcoidosis is not yet known and there are various surveys reported on this issue. Some of this surveys are on the seasonal clustering of the onset, which may be related to the etiology.

Files of 50 patients who were diagnosed sarcoidosis between January 1980 and September 1998 were retrospectively investigated. The ones having erythema nodosum and arthralgia were thought to have acute sarcoidosis and accepted as group I (n=14) and the other as group II (n=36). The onset season of sarcoidosis was spring and summer in 10 (71.4%) patients in

group I and in 22 (61.1%) patients in group II showing no statistically significant difference when the two groups are compared (p>0.05).

As a result, determination of the onset or the diagnosis time in sarcoidosis whether acute or not, is significantly more common in spring and summer which may show that the etiology of sarcoidosis may be related to exposure to some environmental factors.

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**Key words:** etiology; sarcoidosis, seasons

### Introduction

Seasonal clustering of acute sarcoidosis has been reported in various countries previously (1-7). To find out whether this was valid for the patients in Ankara, a retrospective survey was performed between January 1980 and September 1998. Here the clinical features of the patients with sarcoidosis presenting to Hacettepe University Hospital Department of Chest Diseases are reported and the seasonality of the symptoms of the patients referring with erythema nodosum (EN) and arthralgia is investigated.

### Materials and Methods

Files of 76 patients who were diagnosed sarcoidosis in Hacettepe University Hospital Department of Chest Diseases between January 1980 and September 1998 were investigated retrospectively and only 50 were enrolled in the study due to some missing data of the remaining patients. The patients presenting with EN and/or arthralgia were accepted as group I (acute sarcoidosis) and the others as group II. It may not be easy and reliable to determine the onset of the sarcoidosis symptoms other than EN and arthralgia since the disease usually has an insidious beginning, but it is more reliable with

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\* This survey is presented in the Annual Congress of ERS, 1999.

	Group I (n=14) N(%)	Group II (n=36) N(%)
Mean age±SD (yrs) (min-max)	39.3±13.6 (21-70)	41.4±12.8 (18-65)
Females	12 (85.7)	25 (69.4)
Chest X-ray Stage		
0	1 (7.1)	10 (27.8)
I	10 (71.4)	11 (30.6)
II	2 (14.2)	9 (25.0)
III	1 (7.1)	6 (16.7)
Extrapulmonary involvement	12 (85.7)	26 (72.2)
Skin	5 (35.7)	8 (22.2)
Joint	7 (50)	2 (5.6)
Peripheral lymph node	3 (21.4)	16 (44.4)
Liver	1 (7.1)	3 (8.3)
Eye	0	4 (10)
Thyroid gland	1 (7.1)	0
Nervous system	1 (7.1)	1 (7.1)
Spleen	0	1 (7.1)
Stomach	0	1 (7.1)
Kidney	0	1 (7.1)

acute sarcoidosis. Diagnosis had been made depending on the histology and/or clinical appearance. Month of appearance was accepted as the month in which the symptoms had first appeared or when the disease was diagnosed. Spring/summer were considered as the onset season if the symptoms had first appeared from march to august and fall/winter were considered if they had appeared from september to february.

SPSS statistical package (SPSS 95 release) was used for the analysis of the data. The means and the standard deviations for the continuous variables were calculated. Categorical variables between 2 groups were compared by chi square test and Fisher's exact test where indicated. A p value of less than 0.05 was considered for statistical significance.

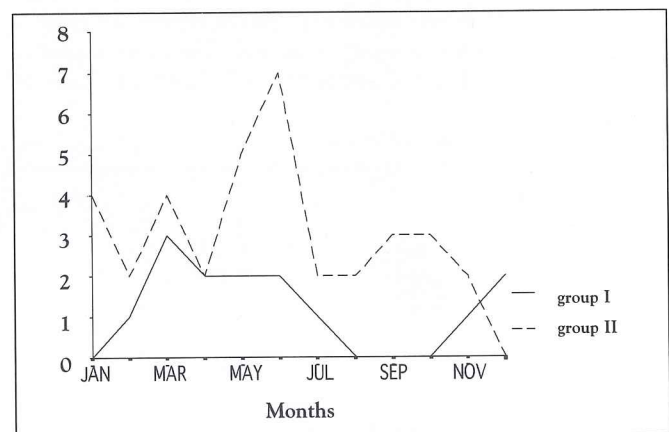
## Results

The mean age of the patients was 39.3±13.6 for group I (n=14) and 41.4±12.8 for group II (n=36). There were 12 (85.7%) females in group I and 25 (69.4%) in group II. (table I). In the whole group (n=50), the referral reasons for the patients had been dyspnea and/or cough in 9 patients (18%), peripheral lymphadenopathy in 8 (16%), EN in 7 (14%), skin lesions in 7 (14%), occasional chest x-ray abnormality in 5 (10%), arthralgia in 5 (10%), constitutional symptoms (fever, sweating, faintness) in 4 (8%), arthralgia and fever in 2 (4%), arthralgia and EN in 1 (2%), EN and dyspnea in 1 (2%) and epigastric pain in 1 (2%). In addition, diagnosis had been confirmed by biopsy in 40 (80%) of the patients. There was extrapulmonary

involvement in 12 (85.7%) patients in group I and 26 (72.2%) patients in group II. Methods of diagnosis are shown in Table 2.

	n=50 (%)
Total	n=50 (%)
Peripheral lymph node biopsy	11 (22%)
Typical clinical appearance and/or Chest X-ray	10 (20%)
Skin biopsy	9 (18%)
Transbronchial needle aspiration from the mediastinal lymph nodes	7 (14%)
Bronchoscopic bronchial mucosa biopsy	5 (10%)
Mediastinoscopic biopsy	3 (6%)
Transbronchoscopic lung biopsy	2 (4%)
Liver biopsy	2 (4%)
Endoscopic gastric mucosa biopsy	1 (2%)

The onset season of the disease was spring and summer in 10 (71.4%) patients in group I and in 22 patients in group II (61.1%) showing no statistically significant difference when compared ( $p>0.05$ ) (figure I).



**Figure 1.** Seasonality of the appearance/diagnosis time of the symptoms for the two groups.

## Discussion

Seasonal clustering of sarcoidosis in spring and summer presenting with EN and/or arthralgia or with other symptoms has been identified previously and verified in some surveys from both southern and northern hemisphere of the world (1-7). Various environmental factors have been suggested as leading to sarcoidosis including exposure to pine trees, farm animals, clay soil and some viruses and bacteria (8,9). In this study we inquired whether there was a seasonal clustering at the beginning of the acute disease in relation to a possible environmental factor or trigger causing sarcoidosis. The seasonality of the appearance or the diagnosis of sar-

coidosis (acute or not) in Ankara, which is in spring and summer, is similar to most of the reports on this topic. In the most recent survey (1), among 59 patients presenting to a center with a new diagnosis of sarcoidosis, 24 had EN and/or acute arthralgia which were referred exclusively in spring months. Similar to our acute sarcoidosis group they also mostly had stage I chest radiography. In a group of patients from Norway who have been diagnosed sarcoid arthritis in spring 10 out of 17 cases had EN (2). In another survey from Greece all 57 sarcoidosis patients had stage I chest x-ray and were diagnosed between december and june each year during 9 years (3). In another cohort from the same center all 8 cases of recent-onset of biopsy-proven scar sarcoidosis and recurrence of local sarcoidosis of axillary lymph nodes were also diagnosed in early spring (3). There was an outbreak of six cases of acute sarcoid arthropathy in may in United Kingdom and all were reported to have stage I chest x-ray (4). In another survey from United Kingdom EN due to sarcoidosis was noted to occur predominantly during february to may (5). In Barcelona 91 patients out of 186 sarcoidosis cases having EN and bilateral hilar lymphadenopathy were first noticed between april and june (6). In a another series of 354 patients with sarcoidosis, 64% of the cases were diagnosed in the first half of the year (7). Hosoda et al, mentioned a significant increase of cases in june and july in a series of 678 patients (6).

There is female preponderance in our survey as a whole group (74%) and when grouped in two depending on presenting with EN and/or acute arthralgia (85.7% and 69.4%, for groups I and II, respectively). Similar to ours in most of the other surveys the majority of the patients were females

(1,5,6), where there was no difference concerning the gender in one of them (2) and the gender frequency was not mentioned in the others. As expected, both in our survey and in the others there was mostly stage I chest x-ray findings. The most important point is that there is seasonal clustering for both acute and non-acute presentation of sarcoidosis in our survey similar to some others (3).

In conclusion, seasonal clustering of sarcoidosis presenting both with EN and/or arthralgia and with other symptoms has also been identified in Ankara, Turkey stressing a common environmental factor/trigger similar to other regions of the world.

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