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A single-center rheumatology experience of sarcoidosis: Observations from 70 patients

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Abstract. *Background*: The aim of this study is to determine the demographic, clinical and laboratory characteristics of the patients who followed up with the diagnosis of sarcoidosis, to investigate the distribution frequency of rheumatological findings and to examine the disease management from the perspective of rheumatology. *Methods*: Patients who were followed up with the diagnosis of sarcoidosis in the rheumatology clinic of Ankara City Hospital between November 2019 and November 2022 were evaluated. Demographic, clinical, radiological, serological, laboratory, and histopathological findings, and rheumatological, systemic, and locomotor system examination findings of the patients were obtained from the medical data registered in the hospital. *Results*: A total of seventy sarcoidosis patients (48.98 ± 11.78 years, %75 female) were included in the study. Joint involvement was observed in 64.3% of cases, skin involvement in 48.6% of cases, and ocular involvement in 25.7% of cases. The ankle was the most frequently involved joint, followed by the knee and small joints in the foot. Corticosteroids were the most used therapeutic agent, and pulmonary and joint findings were the most common reasons for starting treatment. *Conclusions*: Sarcoidosis is a disease that mimics many diseases, misdiagnosis and treatment should be avoided with a good and fast differential diagnosis. Clinicians, especially rheumatologists, should remember sarcoidosis more frequently and keep it in mind in the differential diagnosis.

Key words: sarcoidosis, rheumatology, arthritis, erythema nodosum

Introduction

Sarcoidosis is a multisystem inflammatory disease of unknown etiology, which is characterized by non-caseating granulomas. The clinical scenario usually comprises bilateral hilar lymphadenopathy (LAP), pulmonary infiltrations with or without involvement of various other organ systems (1, 2). Since it is a multisystemic disease sharing clinical, laboratory and imaging similarities with numerous other conditions, differential diagnosis is vast. There is no universal criterion for the diagnosis, therefore, the diagnosis is made based on clinical and radiological findings with histopathological demonstration of the hallmark non-caseating epithelioid granulomas with CD4 T lymphocyte domination at the peripheral zone in the tissue and most importantly, exclusion of other granulomatous conditions with similar features (3-5). Although not specific, increases in serum angiotensin converting enzyme (ACE), serum calcium levels and, if possible, the increased CD4/CD8 lymphocyte ratio in the bronchoalveolar lavage cytology are contributory (6-8).

The most common form of sarcoidosis, including the lungs and/or mediastinal and/or hilar lymph nodes, affects 80–90% of sarcoidosis patients (9, 10).

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Additionally, extrapulmonary manifestations occur in up to 30% of patients (11). Basically, skin, eye, liver, secondary lymphoid organs, liver, spleen, heart, nervous system, kidney, joint, exocrine glands (parotid and salivary), and bone marrow involvement can be seen (11-13). Applications to rheumatology clinics are often due to these extrapulmonary presentations. Malignancies (lymphoma, carcinoma), connective tissue disorders (systemic lupus erythematosus, Sjögren's syndrome, primary biliary cirrhosis, familial granulomatous arthritis), infections (human immunodeficiency virus, tuberculosis), vasculitis (granulomatosis with polyangiitis, Takayasu arteritis, giant cell arteritis), hypersensitivity pneumonia, and immunoglobulin (Ig) G4-related disease may be confused with sarcoidosis (14, 15). As a notorious 'mimicker', the clinical presentations of sarcoidosis can be unpredictable and can vary from a disabling chronic disease to a self-resolving condition or even asymptomatic disease. Symptoms may be acute, subacute or chronic. This phenotypic variability may vary according to the genetics, environmental exposure and socioeconomic status of sarcoidosis patients (16). Clinical and medical management differ depending on which organs are involved when the disease first manifests itself. For this reason, it should be kept in mind as a differential diagnosis in patients who apply to the rheumatology outpatient clinic with various rheumatological symptoms and joint involvement, and patients diagnosed with sarcoidosis should be evaluated in detail in terms of systemic involvement.

The aim of this study is to determine the demographic, clinical and laboratory characteristics of the patients who attended to our rheumatology clinic and followed up with the diagnosis of sarcoidosis, to investigate the distribution frequency of rheumatological findings and to examine the disease management from the perspective of rheumatology.

Methods

The study was planned retrospectively and cross-sectionally. It was done with the approval of the ethics committee of Ankara city hospital (E1-22-3022) and in accordance with the Declaration of Helsinki and later ammendments.

Patients who were followed up with the diagnosis of sarcoidosis in the rheumatology clinic of Ankara City Hospital between November 2019 and November 2022 were evaluated. Patients with clinical manifestations and a tissue biopsy compatible with sarcoidosis were included. Among patients without a confirmed tissue biopsy, the ones with a classical clinical presentation (Löfgren's or Heerfordt's syndromes) and the ones with a highly probable diagnosis of sarcoidosis according to 2014 consensus criteria of *World Association of Sarcoidosis and Other Granulomatous Disorders* (WASOG) were included (17). Patients with concomitant conditions that may cause granulomatous disease (e.g., bacterial, fungal, parasitic, and fungal infections; foreign body reaction; silicosis; granulomatous polyangiitis; and polyarteritis nodosa, etc.) were excluded from the study.

Demographic, clinical, radiological, serological, laboratory, and histopathological findings, and rheumatological, systemic, and locomotor system examination findings of the patients were obtained from the medical data registered in the hospital. Radiographic staging of sarcoidosis was determined based on the presence of hilar or mediastinal lymphadenopathies and/or lung infiltration with or without fibrosis. The modified Scadding staging system was used to classify lung radiographs (18). Sarcoidosis tissue biopsy results were recorded. Organ involvement and medical treatments associated with sarcoidosis were noted. Patients who have not active complaints and have regression or stabilization in the findings related to the involved organ and normal acute phase responses were considered in remission.

Statistical analyses were made by Statistical Package for Social Sciences (SPSS) software version 22 (IBM Corp., Armonk, NY). Normality of variables were evaluated visually by plots and histograms, and analytically with Kolmogorov-Smirnov test. Categorical variables were presented as numbers and percentages and compared by x^2 test. Continuous variables were presented either as means ± standard derivations (SD) or medians with interquartile range (IQR) according to normality and compared between groups either with Mann-Whitney-U test or student-t test.

Results

A total of seventy sarcoidosis patients were included in the study. The mean ± SD age was 48.98 ± 11.78 years and 75% of the patients were female. The mean ± SD age of symptom onset was 43.44 ± 11.32,

Table 1. Demographic characteristics of sarcoidosis patients.

	Patients (n:70)
Female, n(%)	50(71,4)
Age, years, mean±SD	48.98±11.78
BMI, mean±SD	26,89±3,36
Smoking, n(%)	18(25,7)
Age of symptom onset, years, mean±SD	43,44±11,32
Age at diagnosis, years, mean±SD	43,5±11,01
Delay in diagnosis, months, median (IQR)	3(2,25)
Disease duration, months, mean±SD	64,75±49,75
Comorbidities, n(%)	
Hypertension	17(24,3)
Diabetes mellitus	14(20)
Chronic renal failure	3(4,3)
Coronary artery disease	3(4,3)
COPD/Asthma	6(8,6)
Hypothyroidism	6(8,6)
Malignancy, n(%)*	2(2,8)

*1 thyroid papillary ca,1 hepatocellular ca
SD: standard deviation, n:number, IQR: interquartile range, COPD: chronic obsturctive pulmonary disease

Table 2. Laboratory characteristics of sarcoidosis patients.

	Patients (n:70)
Serum ACE (U/L), median(IQR)	66(53,5)
Elevated serum ACE, n(%)	48(68,6)
Calcium(mg/dl), median (IQR)	9,55(0,90)
Hypercalcemia, n(%)	12(17,1)
Hypercalciuria, n(%)	14(20)
Elevated CRP, n(%)	43(61,4)
Elevated ESR, n(%)	38(54,3)
ANA positivity, n(%)	21(30)
RF positivity, n(%)	4(5,7)

SD: standard devaiation, n:number, IQR: interquartile range, CRP: C-reactive protein, ESR: Erythrocyte Sedimentation Rate

and the delay in diagnosis was median (IQR) 3 (2.25) months. Demographic and clinical data of the patients were presented in Table 1. Serum ACE levels was elevated in 68.6% of patients at the time of diagnosis, and the remaining laboratory characteristics at the time of diagnosis were shown in Table 2. The most frequently involved organ was lung (94.3%), followed by skin (48.6%) and musculoskeletal involvement (48.6%). 50% of patients were admitted to the hospital for lung symptoms, 14.3% for skin symptoms, and 14.3% for musculoskeletal symptoms.

Joint involvements

Arthralgia was present in 64.3% of patients with a confirmed diagnosis of sarcoidosis. In addition, arthritis was detected in 48.6% of them. When the patients with arthritis were examined, the most frequently involved joint was the ankle (27.1%), followed by the knee joint (17.1%) and the small joints of the foot (8.6%).

Pulmonary involvements

Pulmonary involvement was present in 95.7% of the patients. 51.4% of the patients were in Stage 1, 34.3% were in Stage 2, 8.6% were in Stage 3, and 1.4% were in Stage 4.

Other extrapulmonary involvements

Erythema nodosum was detected in 19 (27.1%) of the patients, while eye involvement was found in 18 (25.7%). In addition, 4 (5.7%) patients had liver involvement, 4 (5.7%) had bone marrow involvement, and 4 (5.7%) had central nervous system involvement. Bone marrow involvement was determined either in presence of confirmative biopsy or in presence of F-fluorodeoxyglucose (FDG) uptake in positron emission tomography/computerized tomography (PET/CT) reported as bone marrow involvement. Detailed organ involvements are shown in Table 3.

Lymphadenopathy excision sites and applied diagnostic methods

Sixty-five patients were diagnosed with sarcoidosis by tissue biopsy. The most common biopsy site was mediastinal LAP; the second most common was peripheral lymphadenopathy. 10 patients had more than one organ tissue biopsy. Of the 5 patients without a tissue diagnosis, 3 were diagnosed with posterior uveitis suggestive of sarcoidosis, mediastinal LAP, and high ACE levels, while 2 patients were diagnosed with Löfgren's syndrome (hilar LAP, arthritis, and erythema nodosum).

Table 3. Clinical features of sarcoidosis patients.

	Patients (n:70)
First symptom, n(%)	
Lung	35(50)
Skin	10(14,3)
Erythema nodosum	6(8,6)
Joint	10(14,3)
Eye	6(8,6)
Peripheral LAP	2(2,9)
Neurological	1(1,4)
Tissue diagnosis, n(%)*	
Mediastinal LAP	36(55,38)
Peripheral LAP	15(23,07)
Skin	11(16,9)
Bone marrow	4(6,15)
Liver	2(3,07)
Lung parenchyma	1(1,53)
Other **	
Involved organ, n(%)	
Pulmonary	67(95,7)
Extrapulmonary	58(%82.85)
Joint	45(64,3)
Arthralgia	45(64,3)
Arthritis	34(48,6)
Skin	34(48,6)
Erythema nodosum	19(27,1)
Eye	18(25,7)
Peripheral LAP	19(27,1)
Liver/Spleen	4(5,7)
Bone marrow	4(5,7)
CNS	4(5,7)
PNS	2(2,9)
Parotid	3(4,3)
Kidney	4(5,7)
Heart	2(2,9)
Other ***	

	Patients (n:70)
Stage of sarcoidosis, n(%)	
Stage 1	36(51,4)
Stage 2	24(34,3)
Stage 3	6(8,6)
Stage 4	1(1,4)
Arthritis, n(%)	
Ankle	19(27,1)
Knee	12(17,1)
Foot joints	6(8,6)
Elbow	1(1,4)
Wrist	3(4,3)
Hand joints	4(5,7)
Reason for treatment, n(%)	
Lung involvement	29(41)
Joint involvement	17(24,2)
Eye involvement	9(12.8)
Skin involvement	7(10)
Neurological involvement	3(4,28)
Liver involvement	2(2,85)
Treatments, n(%)	
Corticosteroid	66(94,3)
Methotrexate	32(45,7)
Azathioprine	12(17,1)
Mycophenolate mofetil	1(1,4)
Cyclophosphamide	1(1,4)
Hydroxychloroquine	10(14,3)
Colchicine	14(20)
TNF-a inhibitor	3(4,3)
Untreated	3(4,3)
Mortality, n(%)	1(1,4)
Disease activity	
Remission	68(98,6)
Active	1(1,4)

*65 patients had tissue biopsy, 10 patients had tissue biopsy from more than one organ
**1 nasal mucosa, 1 pharyngeal wall, 1 parotid, 1 peritoneum, 1 minor salivary gland
***1 nasopharynx, 1 vertebra involvement
CNS: central nervous system, PNS: peripheral nervous system, TNF-a: tumor necrosis factor alfa

Evaluation according to arthritis

Characteristics of patients with and without arthritis were compared in Table 4. It was found that patients with arthritis had higher C-reactive protein and erythrocyte sedimentation rate levels and more frequent skin and bone marrow involvement.

Treatment choices after diagnosis

Considering the distribution of treatments after diagnosis, 99.4% of patients received corticosteroids (CS), 45.7% methotrexate (MTX), and 17.1% azathioprine (AZA). 3 (4.3%) patients were under tumor necrosis factor alfa (TNF-a) inhibitors. Lung involvement was the most common reason for treatment (41%), followed by joint involvement (24.2%) and eye involvement (12.8%). Table 3 contains detailed treatment distributions. The treatments according to organ involvements are summarized in Table 5. While corticosteroids were the most preferred treatment agent in all involvements, the most preferred immunosuppressant was methotrexate.

Disease activity, end stage organ damage and mortality

One of the patients followed-up died due to acute renal failure. While the disease of 68 patients was stable or regressed, one patient followed up with neurosarcoidosis had progressive disease.

Table 4. Comparison of sarcoidosis patients with and without arthritis.

	Patients with arthritis (n:34)	Patients without arthritis (n:36)	p
Female, n(%)	26(76,5)	24(66,7)	0,364
Age, years, mean±SD	49,73±11,80	48,27±11,88	0,609
Age of symptom onset, years, mean±SD	42,82±11,44	44,02±11,34	0,660
Age at diagnosis, years, mean±SD	43,17±11,40	43,80±10,78	0,813
Delay in diagnosis, months, median (IQR)	3±3	3±2	0,302
Smoking, n(%)	8(23,5)	10(27,8)	0,684
Serum ACE (U/L), median(IQR)	60,50±50,50	80±48,50	0,062
Elevated serum ACE, n(%)	20(58,8)	28(77,8)	0,088
Calcium(mg/dl), median (IQR)	9,55±0,92	9,55±0,84	0,832
Hypercalcemia, n(%)	5(14,7)	4(11,1)	0,653
Hypercalciuria, n(%)	6(17,6)	8(22,2)	0,632
Elevated CRP, n(%)	25(73,5)	18 (50)	**0,043**
Elevated ESR, n(%)	23(67,6)	15(41,7)	**0,029**
ANA positivity, n(%)	11(32,4)	10(27,8)	0,676
RF positivity, n(%)	1(2,9)	3(8,3)	0,331
Pulmonary involvement, n(%)	33(97,1)	34(94,4)	0,589
Eye involvement, n(%)	9(26,5)	9(25)	0,888
Skin involvement, n(%)	22(64,7)	12(33,3)	**0,009**
CNS involvement, n(%)	1(2,9)	3(8,3)	0,331
Liver involvement, n(%)	2(5,9)	2(5,6)	0,953
Bone marrow involvement, n(%)	4(11,8)	0(0)	**0,034**
Stage of sarcoidosis, n(%) Stage 1 Stage 2 Stage 3 Stage 4	 18(52,9) 9(26,5) 5(14,7) 1(2,9)	 18(50) 15(41,7) 1(2,8) 0(0)	 0,244

SD: standard deviation, n: number, IQR: interquartile range, CRP: C-reactive protein, ESR: erythrocyte sedimentation rate

Table 5. Treatments of sarcoidosis patients according to organ involvements.

	Lung (n:67)	Joint (n:45)	Eye (n:18)	Skin (n:4)	CNS (n:4)	Liver (n:4)	Bone marrow (n:4)
KS, n(%)	62(93,9)	43(95,6)	18(100)	32(94,1)	4(100)	4(100)	4(100)
MTX, n(%)	31(47)	27(60)	9(50)	19(55,9)	2(50)	2(50)	3(75)
AZA, n(%)	12(18,2)	9(20)	6(33,3)	5(14,7)	1(25)	2(50)	1(25)
MMF, n(%)	1(1,5)	0(0)	0(0)	1(2,9)	0(0)	0(0)	0(0)
CYX, n(%)	1(1,5)	1(2,2)	1(5,6)	0(0)	0(0)	1(25)	0(0)
HCQ, n(%)	9(13,6)	8(17,8)	3(16,7)	4(11,8)	0(0)	1(25)	1(25)
Colchicine, n(%)	14(21,2)	10(22,2)	2(11,1)	7(20,6)	0(0)	0(0)	0(0)
TNF-α inhibitor, n(%)	3(4,5)	3(6,7)	2(11,1)	1(2,9)	1(25)	2(50)	2(50)

Abbrevetions: AZA: azathioprine; CNS: central nervous system; CYX: cyclophosphamide; HCQ: hydroxychloroquine; MMF: mycophenolate mofetil; MTX: methotrexate; TNF-α: tumor necrosis factor alfa.

Discussion

In our dataset, 92% of patients were diagnosed with tissue biopsy, 2 with Löfgren's syndrome, and 3 with clinical, radiological, and laboratory findings highly suggesting sarcoidosis. Joint involvement was observed in 64.3% of cases, skin involvement in 48.6% of cases, and ocular involvement in 25.7% of cases. The ankle was the most frequently involved joint, followed by the knee and small joints in the foot. Corticosteroids were the most used therapeutic agent, and pulmonary and joint findings were the most common reasons for starting treatment.

The diagnosis of sarcoidosis is not standardized, it is based on three main criteria: a compatible clinical presentation, non-necrotizing granulomatous inflammation in one or more tissue samples, and the exclusion of alternative causes that may cause granulomatous disease (19). However, a few clinical conditions in which a biopsy is not required for diagnosis are considered diagnostic (20). These conditions include Löfgren's syndrome (erythema nodosum, hilar adenopathy, polyarthralgia, and fever), Heerfordt's syndrome (uveoparotid fever), and asymptomatic bilateral hilar adenopathy (19). Löfgren's syndrome is a self-limiting condition that manifests as acute sarcoid arthritis, bilateral hilar LAP, fever, and EN in 5-10% of sarcoidosis patients (21). Joint involvement in Löfgren's syndrome is the most common presentation of acute sarcoid arthritis. It most commonly involves the ankles, usually bilaterally, followed by other larger joints of the lower extremity, and may be confused with reactive arthritis(22). Joint symptoms can persist for up to two years, and about a third of patients have more persistent arthritis(22). Rarely, isolated involvement of the small joints of the hands may mimic acute-onset rheumatoid arthritis(23). In such patients, the diagnosis of acute sarcoid arthritis is often made retrospectively when other, more common features of the disease appear. Sarcoid arthritis can also resemble rheumatic fever when the polyarthritis is migratory(24). In addition, crystal arthritis, which tends to involve the lower extremities, can also be confused with sarcoid arthropathy(25). In our study, five (7.14%) patients presented with Löfgren's syndrome. While tissue diagnosis was found present in two of them, three patients were clinically diagnosed without tissue diagnosis.

Musculoskeletal system involvements are seen in approximately 15–25% of patients with sarcoidosis and often present as joint and muscle involvements(14, 15, 22). Arthritis manifestations are acute and chronic, often manifesting as synovitis of the large joints of the lower extremities(22). When the literature is examined, it is reported that arthralgia is up to 70% and the incidence of arthritis is around 25% (15, 26, 27). In our study, arthralgia was found in 45 (64.3%) patients, and arthritis was found in 34 (48.6%) patients. In accordance with the literature, the most frequently affected joint in our study was the ankle, followed by the knee and foot small joints. Ten (14.3%) patients in our series applied to our clinic for the first time with joint complaints and were diagnosed with sarcoidosis. Therefore, it is essential to suspect sarcoidosis, especially in patients presenting with lower extremity involvement. Acute sarcoidosis, as well as other rheumatological diseases, should be considered in patients who present with acute symmetrical oligo- or polyarthritis.

Specific and non-specific skin lesions associated with sarcoidosis may occur at baseline or at diagnosis(28). Lupus pernio, erythema nodosum, maculopapular lesions, and subcutaneous nodules are some of the skin manifestations of sarcoidosis(29, 30). In our study, skin lesions were observed in 48.6% of the patients, and erythema nodosum was observed in 27.1% of them. Erythema nodosum draws attention as one of the findings that occur initially or during the disease course. In a study conducted in Turkey, the frequency of skin involvement in sarcoidosis was reported at 33%. In the same study, it was reported that erythema nodosum constituted 20% of patients with skin involvement(15, 31, 32). In our series, the first reason for six (8.6%) patients to apply to the clinic was erythema nodosum, while five patients were diagnosed with sarcoidosis after a skin biopsy for erythema nodosum. As a result, in patients presenting with EN, the presence of accompanying hilar lymphadenopathy should be investigated, and other factors causing EN (e.g., drugs, inflammatory bowel disease, Behçet's disease, malignancy) should be ruled out for diagnosis.

Ocular involvement may occur in up to 25% of patients with sarcoidosis and is the first presenting symptom in 5% of patients(33). Intraocular or extraocular eye involvement may be present in sarcoidosis. Uveitis is the most common ocular manifestation(34). Uveitis associated with sarcoidosis may occur before systemic manifestations or in the first year of the disease(35). In a study investigating the etiology of uveitis, the rate of sarcoidosis was reported

as 5%(36). In our series, the rate of eye involvement was 25.7%, and the first organ involved in 8.6% of the patients was the eye. According to the consensus guidelines of the International Workshop on Ocular Sarcoidosis (IWOS), the precision of the diagnosis of ocular sarcoidosis is based on the combination of intraocular findings and systemic evidence of sarcoidosis(37). In our series, 3 patients were diagnosed with sarcoidosis based on ocular involvement, hilar LAP, and other clinical and laboratory features without tissue diagnosis. Therefore, the diagnosis of sarcoidosis should be kept in mind in patients presenting with uveitis, and a basic eye examination should be performed to screen for ocular sarcoidosis, even in patients with sarcoidosis without ocular symptoms, as recommended by the American Thoracic Society.

A variety of laboratory abnormalities may be seen in patients with sarcoidosis. Nonspecific laboratory abnormalities such as anemia, leukopenia, thrombocytopenia, and increased erythrocyte sedimentation rate and C-reactive protein (CRP) may be observed that do not distinguish sarcoidosis from other inflammatory diseases(38-40). Also, Hypercalciuria and hypercalcemia are quite common anomalies in sarcoidosis patients(41) . According to studies, hypercalcemia affects 7-18% of patients with sarcoidosis and hypercalciuria affects 20-40%(42-44). In our study, similar to the literature, hypercalciuria was seen in 20% and hypercalcemia in 17.1%. Serum angiotensin converting enzyme (ACE) level is elevated in 75 percent of untreated patients with sarcoidosis(45). However, serum ACE has limited utility as a diagnostic test, due to poor sensitivity and specificity(45, 46). In our study, 68.6% of the patients had elevated serum ACE at the time of diagnosis.

In general, the course of the disease is highly variable, ranging from mild courses that resolve spontaneously within a few weeks to irreversible organ damage requiring transplantation in the case of progressive pulmonary or cardiac sarcoidosis(47, 48). It is difficult to decide on the management of the disease and when and how to start treatment. Some patients with sarcoidosis do not require treatment because they have asymptomatic, non-progressive disease or experience spontaneous remission. In our study, 95.7% of our patients were receiving treatment. The fact that patients who applied to the rheumatology clinic present with extrapulmonary involvement such as arthritis explains why patients in our cohort receive treatment more frequently compared to other cohorts. Similar to our study, in a sarcoidosis cohort with a high prevalence of uveitis, more than half of the patients were receiving any treatment (49). In our cohort, CS are used as the first treatment option in patients with a disease requiring treatment (50). Other treatment options such as MTX, AZA, hydroxychloroquine (HCQ), and TNF-a inhibitors are used in the treatment of diseases resistant or unresponsive to corticosteroids(51). In our series, 94.3% of the patients received CS, 45.7% MTX, 17.1% AZA, 20% colchicine, 14.3% HCQ, and 4.3% TNF-a inhibitors. The most common reason for patients to receive treatment was lung involvement (41%), followed by joint involvement (24.2%), eye involvement (12.8%), and skin involvement (10%).

There were some limitations in our study. The first limitation of our study is the small sample size. In addition, the cross-sectional and retrospective design of the study prevented us from clearly evaluating the long-term prognosis of the disease and the results of the treatments used.

Conclusions

Sarcoidosis patients may attend to rheumatology outpatient clinics with non-specific musculoskeletal complaints, arthritis, arthralgia, or skin findings. They may be referred from other clinics for differential of uveitis. Since sarcoidosis is a disease that mimics many diseases, misdiagnosis and treatment should be avoided with a good and fast differential diagnosis. Therefore, clinicians should remember sarcoidosis more frequently and keep it in mind in the differential diagnosis.

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