

Rheumatologic Perspectives and Therapeutic Interventions of Sarcoidosis

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ABOUT THE STUDY

Sarcoidosis is a multisystem inflammatory disorder characterized by the formation of noncaseating granulomas in various organs. Although sarcoidosis primarily affects the lungs, it can involve other organ systems, including the skin, eyes, heart, liver, and musculoskeletal system.

Musculoskeletal manifestations

Sarcoidosis can present with a wide range of musculoskeletal manifestations, ranging from asymptomatic joint involvement to debilitating arthritis. Joint involvement is the most common musculoskeletal manifestation of sarcoidosis and typically presents as an acute or chronic polyarthritis, predominantly affecting the ankles, knees, wrists, and small hand joints. In addition to joint involvement, sarcoidosis can cause muscle involvement, such as myositis, which may lead to muscle weakness and pain.

Rheumatologic perspectives

Pathogenesis: The exact pathogenesis of sarcoidosis remains unknown, but it is thought to involve dysregulated immune responses and an exaggerated granulomatous reaction. Various genetic and environmental factors, as well as immunologic abnormalities, have been implicated in the development of sarcoidosis. The role of Th1 and Th17 immune responses has been extensively studied in the context of sarcoidosis pathogenesis.

Diagnosis: The diagnosis of sarcoidosis requires a combination of clinical, radiological, and histopathological findings. Rheumatologists play a crucial role in the diagnostic process, as musculoskeletal manifestations often prompt the initial evaluation. Biopsy of affected organs, such as the skin or lymph nodes, may reveal noncaseating granulomas, confirming the diagnosis. Other diagnostic modalities, including chest X-ray, High-Resolution Computed Tomography (HRCT), and serum biomarkers, such as Angiotensin-Converting Enzyme (ACE) levels, are utilized to assess organ involvement and disease activity.

Differential diagnosis: Rheumatologists should consider a broad differential diagnosis when evaluating patients with musculoskeletal symptoms in the context of sarcoidosis. Conditions such as rheumatoid arthritis, systemic lupus erythematosus, and other granulomatous disorders, including tuberculosis and granulomatosis with polyangiitis, should be considered and excluded.

Therapeutic interventions

The management of sarcoidosis requires a multidisciplinary approach, involving rheumatologists, pulmonologists, and other specialists, depending on the organ systems involved.

The goals of therapy are to alleviate symptoms, control inflammation, prevent organ damage, and maintain optimal quality of life. The choice of therapeutic interventions depends on the extent and severity of organ involvement, as well as the patient's symptoms.

Pharmacological interventions

Corticosteroids: Systemic corticosteroids, such as prednisone, are considered the mainstay of therapy for sarcoidosis. They help control inflammation and reduce granuloma formation. However, long-term use of corticosteroids is associated with various side effects, highlighting the need for alternative treatment strategies.

Immunosuppressive agents: In cases of refractory or severe sarcoidosis, immunosuppressive agents, such as methotrexate, azathioprine, or mycophenolate mofetil, may be used as steroid-sparing agents to reduce the corticosteroid dosage and minimize their side effects.

Biologic therapies: Tumor Necrosis Factor-alpha (TNF- α) inhibitors, such as infliximab and adalimumab, have shown promising results in the treatment of sarcoidosis, particularly in cases of articular and cutaneous involvement. Other biologic agents, including rituximab and ustekinumab, are being investigated as potential therapeutic options.

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Non-pharmacological interventions

Physical therapy: It plays a vital role in managing musculoskeletal symptoms in sarcoidosis. It focuses on improving joint mobility, muscle strength, and overall functional ability. Additionally, it helps alleviate pain and stiffness associated with sarcoidosis-related arthritis.

Pulmonary rehabilitation: As pulmonary involvement is common in sarcoidosis, pulmonary rehabilitation programs can be beneficial. These programs include exercise training, breathing techniques, and education on self-management, aiming to improve lung function and overall respiratory health.

Sarcoidosis is a complex systemic disorder that can involve various organ systems, including the musculoskeletal system.

Rheumatologists play a crucial role in the diagnosis and management of sarcoidosis, particularly in cases with musculoskeletal manifestations. A multidisciplinary approach, involving rheumatologists, pulmonologists, and other specialists, is essential for optimal patient care.

Although corticosteroids remain the mainstay of therapy, newer therapeutic interventions, including immunosuppressive agents and biologic therapies, show promise in the management of sarcoidosis.