Autoimmune comorbidities in sarcoidosis: prevalence, predictors, and symptom burden in a large Italian multicenter cohort

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Introduction: Sarcoidosis and autoimmune diseases share several immunological mechanisms, yet the prevalence, clinical characteristics, and impact of autoimmune comorbidities in large Italian sarcoidosis cohorts remain poorly defined. We aimed to investigate the prevalence and distribution of autoimmune diseases in patients with sarcoidosis and to evaluate their association with demographic characteristics, disease phenotype, and symptom burden.

Methods: We performed a retrospective multicenter study including 1,698 consecutive patients with sarcoidosis from six Italian referral centers (Siena, Napoli, Monza, Padova, Bergamo, and Sassari). Demographic, clinical, radiological, functional, and autoimmune disease data were collected from medical records. Associations were explored using Fisher's exact test, while multivariable logistic regression analyses were performed to identify independent predictors of autoimmune diseases and their relationship with baseline symptoms.

Results and conclusions: Autoimmune diseases were identified in 189 patients (11.1%), with autoimmune thyroiditis representing the most frequent comorbidity (4.2%). Female sex was the strongest independent predictor of autoimmune diseases (OR 8.48, 95% CI 3.56–20.23; $p < 0.001$), whereas age at diagnosis, smoking status, radiological stage, extrapulmonary involvement, pulmonary function, and the number of organs involved were not independently associated. At univariable analysis, autoimmune diseases were associated with dyspnea, fatigue, arthralgia, and weight loss. After adjustment for potential confounders, autoimmune diseases remained independently associated with arthralgia (OR 2.76, 95% CI 1.81–4.20; $p < 0.001$) and weight loss (OR 4.14, 95% CI 2.04–8.41; $p < 0.001$), whereas the associations with dyspnea and fatigue were no longer significant. In our study autoimmune comorbidities were common in Italian patients with sarcoidosis and were strongly associated with female sex. Although they were not related to disease severity or pulmonary involvement, autoimmune diseases were independently associated with a greater burden of systemic symptoms, particularly arthralgia and weight loss. These findings support increased clinical awareness of autoimmune comorbidities and reinforce the importance of a multidisciplinary and patient-centered approach in sarcoidosis management.