Treatment with Methotrexate and Low-dose Corticosteroids in Sarcoidosis Patients with Cardiac Lesions

Key words: sarcoidosis, ejection fraction on echocardiography, cardiothoracic ratio on plain chest radiograph, N-terminal fragment pro-brain natriuretic peptide (NTproBNP), methotrexate, corticosteroid


The Authors Reply There are several weaknesses of the study in respect to the examined number of patients. However, regarding the diagnosis of sarcoidosis, we carefully checked the involved lesions (including the sites and severity) according to the 2006 Japanese guidelines (1). The patients cannot be diagnosed with any other disease, even if sarcoidosis is removed from the differential diagnosis. Based on our experience with more than 2,000 sarcoidosis patients, we selected typical cases that have a substantial amount of clinical evidence of sarcoidosis lesions.

All cases satisfied the major criteria according to the 2006 Japanese guidelines (1). This guideline is approved by another reviewer (2). In addition, basal thinning of the interventricular septum was detected in 15 patients; two patients without basal thinning had other positive findings that satisfied the diagnostic criteria. Positron emission tomography negative cases also showed abnormalities related to the presence of the cardiac lesions due to sarcoidosis. Ischemic heart diseases were actively differentiated during their time courses.

We explained the specific treatment for all patients with cardiac sarcoidosis. The importance of the new treatment was to reduce the adverse effects of standard corticosteroid therapy. However, some patients showed a hesitation to receive the novel therapy using methotrexate and therefore were treated with corticosteroid therapy only. Other patients were treated with the two drugs. We selected age-matched patients between two groups. Therefore, after removing the age-mismatched patients (younger patients), the number of the cases became smaller.

In the comparison between the two groups, there were no statistically significant differences in the forced expiratory volume one second (FEV1) or any other parameters. Regarding the FEV1, the smallest value in our patients was 1.39 L and this patient showed mild airflow limitation with mild fibrotic lesions. Therefore, it was difficult to relate the airflow lesion to heart dysfunction. We analyzed differences in the outcome indices (including the left ventricular ejection fraction) between the groups at various time points and found statistical significance after 3 years. There were no clear results that stabilized the cardiac function two years after treatment with either the standard dose or a high dose of corticosteroid therapy (3).

There was also a slight increase in the cardio-thoracic ratio associated with an increase of the N-terminal fragment pro-brain natriuretic peptide. These findings may be attributed directly to the treatment method, as there was no apparent ischemic heart disease or hypertension.

The authors state that they have no Conflict of Interest (COI).

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