Thyroid Dysfunction and Systemic Rheumatic Diseases

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Introduction

Abnormalities in thyroid function and the presence of thyroid autoantibodies have been frequently described in patients with systemic rheumatologic diseases, like rheumatoid arthritis (RA), systemic lupus erythematosus (SLE) and Sjögren’s syndrome (SS). Clinical and subclinical hypothyroidism is more common than hyperthyroidism in them. Those with subclinical hypothyroidism and presence of thyroid autoantibodies like anti-Thyroid Peroxidase (anti-TPO) and anti-Thyroglobulin antibodies (anti-Tg) are likely to develop hypothyroidism later in the course of disease. Both hypothyroidism and connective tissue diseases often cause muscle and joint pains, and fatigue. Simultaneous occurrence of thyroid disorder with RA or SLE thus bears diagnostic and therapeutic significance. Various mechanisms postulated for thyroid dysfunction are autoimmunity, genetic predisposition, drugs like steroids and NSAIDs interfering with secretion and transport of thyroid hormones.

Rheumatoid Arthritis and Thyroid Disorder

Hypothyroidism is about three times more prevalent in RA patients than age matched controls. Autoimmune thyroid disease (AITD) is characterized by presence of antibodies towards thyroid proteins like thyroperoxidase (anti-TPO) and thyroglobulin (TgAb). Positivity for the thyroid autoantibodies (anti-TPO and anti-Tg antibodies) has been detected in 2%-32% in different case series. In a recent study from Karnataka, thyroid dysfunction is reported in 22% of RA patients, with overt hypothyroidism being most common (15%), subclinical hypothyroidism in 5%, and hyperthyroidism clinical and subclinical in 1% each. The authors also reported weight gain and cold intolerance to be statistically significant predictors of hypothyroidism in RA.

Hypothyroidism is associated with fatigue, arthralgias, myalgias all of which would be attributable to RA. Thus in RA patients with persistent joint pain despite adequate DMARDs and inflammation control, it is important to investigate for hypothyroidism, especially those with history of weight gain and cold intolerance. In RA patients with anti-thyroid antibodies, it is worth repeating thyroid function tests at intervals to detect thyroid dysfunction at the earliest. This will result in better lipid control and thus reduce IHD, which has higher prevalence in RA. In this issue of JAPI, Haridas et al have reported increased prevalence of thyroid antibodies and hypothyroidism in patients of rheumatoid arthritis compared with control population from South India.

SLE and Thyroid Disorder

The association between SLE and thyroid dysfunction was first described in 1961 in reports of the association between SLE and Hashimoto’s Thyroiditis. Clinically overt or subclinical hypothyroidism is reported in 5-6% SLE patients, i.e. about 5 times more common than in general population. Thyroid antibodies are reported in 14-51 % SLE patients. In SLE patients with thyroid disease, Isenberg et al showed that the serological status of a significant minority of patients fluctuates and patients may become thyroid antibody negative with time. This subgroup is unlikely to develop clinical thyroid disease. Many patients of autoimmune thyroid disease have anti-nuclear antibodies (ANA) in their sera (78%, in one study), a fact to be remembered while investigating vague complaints like fatigue, hair loss and arthralgias, all of which may be due to hypothyroidism and ANA positivity too may be due to autoimmune thyroid disease and not SLE.

Sjogren’s Syndrome and Thyroid Disorder

High prevalence of autoimmune thyroid disease and thyroid dysfunction (in almost 1/3rd) is found in primary Sjögren’s syndrome (pSS). In a French study of 137 biopsy proven pSS, with 6 years followup, 30% of pSS patients had thyroid dysfunction and 11% had anti-TPO and 3% and anti-Tg antibodies. This was significantly high compared to OA and sciatica controls in the study group. With pSS patients having chronic aches and pains, fibromyalgia; it is worth investigating for concomitant thyroid dysfunction which may be partly contributing to patient’s symptoms and can be effectively treated.

Autoimmune thyroid disease (AITD) frequently coexists with other systemic autoimmune conditions such as RA, SLE and Sjögren’s syndrome. Due to the overlapping and nonspecific nature of symptoms, it is difficult to clinically uncover thyroidal illnesses in these patients. It is important to perform thyroid function test in patients of RA, SLE, Sjögren’s syndrome with unspecific symptoms, in presence of low disease activity to detect thyroid dysfunction. Both, chronic inflammatory diseases like RA/SLE and hypothyroidism, have associated dyslipidaemia, accelerated atherosclerosis and increased CVD risk. Appropriate management of all co-morbidities is important for comprehensive patient care.

References


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