

THE ASSOCIATION OF AUTOIMMUNE THYROIDITIS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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ABSTRACT:

We determined the degree of overlap between autoimmune thyroiditis disease and Systemic Lupus Erythematosus (SLE). Forty one SLE patients with twenty age- and sex-matched controls were included in this study. Twenty-one (51%) of the SLE patients had anti thyroglobulin (anti-TG) antibodies. Ten SLE patients had elevated TSH levels, usually in association with the presence of anti-TG. These results suggest that SLE is associated with autoimmune thyroiditis and that many patients with SLE have minor hypothyroidism.

KEY WORDS: Systemic lupus erythematosus, Thyroiditis, Hypothyroidism, Thyroglobulin antibodies.

INTRODUCTION:

Hashimoto's thyroiditis is an organ specific autoimmune disease. In this disorder, there is a specific lesion in the thyroid associated with infiltration of mononuclear cells and damage to follicular cells. Antibody to thyroid constituents can be demonstrated in nearly all cases (1). It is an inflammatory disorder of unknown cause, which results in progressive destruction of the thyroid gland. Found mostly in the middle aged and elderly, it also occurs in other groups, including children in whom it may cause goiter (2). A thyroid gland is made up of a series of sac-like follicles lined with cuboidal epithelium. Within the follicles is found homogeneously stained colloid, the principal constituent of which is a glycoprotein. This high molecular weight protein (about 650,000) (3). Thyroid autoimmune diseases are associated with the occurrence of differentiated autoantibodies and are thought to be related to a genetic pre-disposition. These autoantibodies are directed against membrane-located and/or extracellular antigens of the thyroid

cells: thyroglobulin, microsomal antigen, TSH receptors and colloid antigen. An association between thyroid and rheumatic disorders has been known for over a century and is of three types. Hypothyroidism or thyrotoxicosis may produce a variety of musculoskeletal symptoms, drug treatment of thyrotoxicosis is occasionally followed by rheumatological sequelae and lastly there may be an association between organ-specific autoimmune thyroid diseases and non-organ-specific rheumatological disorders [4]. Recognized associations with thyroiditis include Sjogren's syndrome [5] and giant cell arteritis [6,7]. A clinical association of Hashimoto's thyroiditis with (SLE) has been suspected for some time [8,9] and is supported by the finding of a positive antinuclear factor (ANF) in 13% of Hashimoto patients [10]. One of the 40 patients in the last quoted study had clinically-apparent SLE. Moreover, 28% of patients with juvenile autoimmune thyroiditis also had a positive ANF [9]. However, others have found only an equivocal association between autoimmune thyroiditis and SLE [11]. This lack of association has

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also been suggested by others on theoretical grounds. Links between various autoimmune diseases have been regarded as an overlap of a general autoimmune diathesis, associations being increasingly likely when the conditions are close together in the organ-specific to non-organ specific disease spectrum. For diseases at the opposite ends of the spectrum, such as thyroiditis and SLE, overlap should be extremely unusual and it has been claimed that the cases reported in which the two conditions occur together are highly selected because of this rarity [12]. To clarify the situation we have determined the prevalence of thyroiditis in patients with

SLE using sensitive ELISA methods for thyroglobulin (Tg) and for TSH.

MATERIALS & METHODS

Patients

Serum was obtained from 41 randomly selected patients with SLE [2 male, 39 female; mean age ($\pm$ SD), 36 ($\pm$ 10)] and compared with 20 age- and sex-matched controls derived from hospital staff. All patients with SLE fulfilled the criteria for the diagnosis of SLE[13]. The patients were admitted to Monther Mustafa, Al-Fanar Clinical Laboratories and Rheumatology Department in Baghdad Teaching Hospital. All samples of patients and control were clotted at room temperature, centrifuged at 3000 rpm. for 45 min. and the sera stored at -20 °C until used in the assay.

Anti thyroglobulin Antibody(anti-TG) : were assayed by ELISA method Biomeghrib(Tunisia) diagnostics that is based on double antibody sandwich technique, table(1) show cut off values of anti-TG.

RESULTS:

Age Distribution: In our study, the mean age of clinically autoimmune thyroiditis in SLE patients was 50 years figure (1).

Anti-TG Antibody:

The distribution of anti-TG amongst patients is shown in (figure 2). Overall, 21 (51%) of the SLE patients had anti-TG whereas no healthy subject had a positive results for anti-TG antibody or ANF.

TSH levels:

None of the patients or controls had TSH values in the hyperthyroid range. All control group have a normal value TSH level, while SLE patients had levels (6-25 mU/L), 10(24%) of the SLE patients had TSH levels above the upper limit of the normal reference range (0.5-5mU/L). All eight of SLE patients with elevated TSH levels had anti-TG antibody. Two SLE subjects with elevated TSH levels (6.0 and 6.8 mU/L) had neither antibody. Figure(3)

DISCUSSION:

In this study we have examined the prevalence

of thyroid antibodies in patients with SLE compared to age- and sex-matched controls. In our study, the mean age of the clinically autoimmune thyroiditis in SLE patients was 50 years , figure (1) others (14) the mean age was 53.6 yr. These results strengthen the hypothesis of slow universal progression of the autoimmune process (15)This model suggests a 'disease pyramid' in autoimmune thyroiditis, in which patients progress from mild thyroiditis to clinical disease over time. The half-time for progression from mild thyroiditis to clinical disease is estimated to be 80 years (15). SLE may accelerate progression up this disease pyramid. These antibodies were associated with unsuspected thyroid failure (as marked by elevation of TSH) in 24% of this randomly selected group of SLE patients, our results agree with Chan(14) and Kausman(16)their results were 23.2% and 21% respectively . It is established that thyroid antibodies correlate strongly with lymphocytic thyroiditis and, in the absence of any clinical or biochemical change, the presence of these antibodies is

nonetheless likely to reflect morphological changes within the thyroid [17]. Two of the SLE patients had modestly elevated TSH levels without detectable Tg antibody. This could be the result of spontaneous fluctuations in TSH [18], thyroiditis in the absence of Tg . antibody [17] reflecting another type of thyroid autoimmunity [19]. Another uncontrolled prospective study found thyrotoxicosis or hypothyroidism in 12 (3.8%) of 319 SLE patients and nine of these patients had Tg or Mic antibodies [20]. The reason for this association between SLE and thyroiditis is not clear. It may represent an overlap of some general tendency towards autoimmunity, although this would not fit into the concept of an organ-specific/non-organ-specific spectrum [12]. A similar genetic predisposition may be implicated, since SLE and autoimmune atrophic (but not Hashimoto's) thyroiditis are associated with HLA-DR3 [21, 22]. Thyroid function and Thyroid antibodies tests should be performed as part of the biochemical and immunological profile in SLE patients. Those who are at high

risk (female, raised TSH, positive thyroid Ab) should have thyroid function follow-up and should be given appropriate treatment in due course. As thyroid serology follows a fluctuating course, often dependent on disease activity, follow-up of larger numbers of SLE patients with age- and sex-matched controls would be of interest.(14) In conclusion, these results from a controlled study support an association between SLE and autoimmune thyroiditis and indicate that many patients with SLE have minor hypothyroidism, which in some will progress to overt thyroid failure [16]. Recognition of this may be of clinical importance.

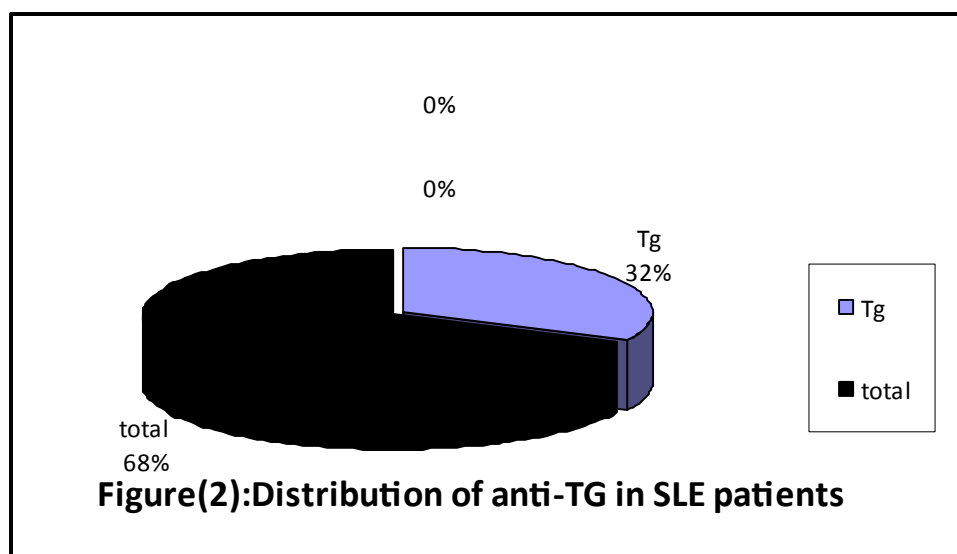
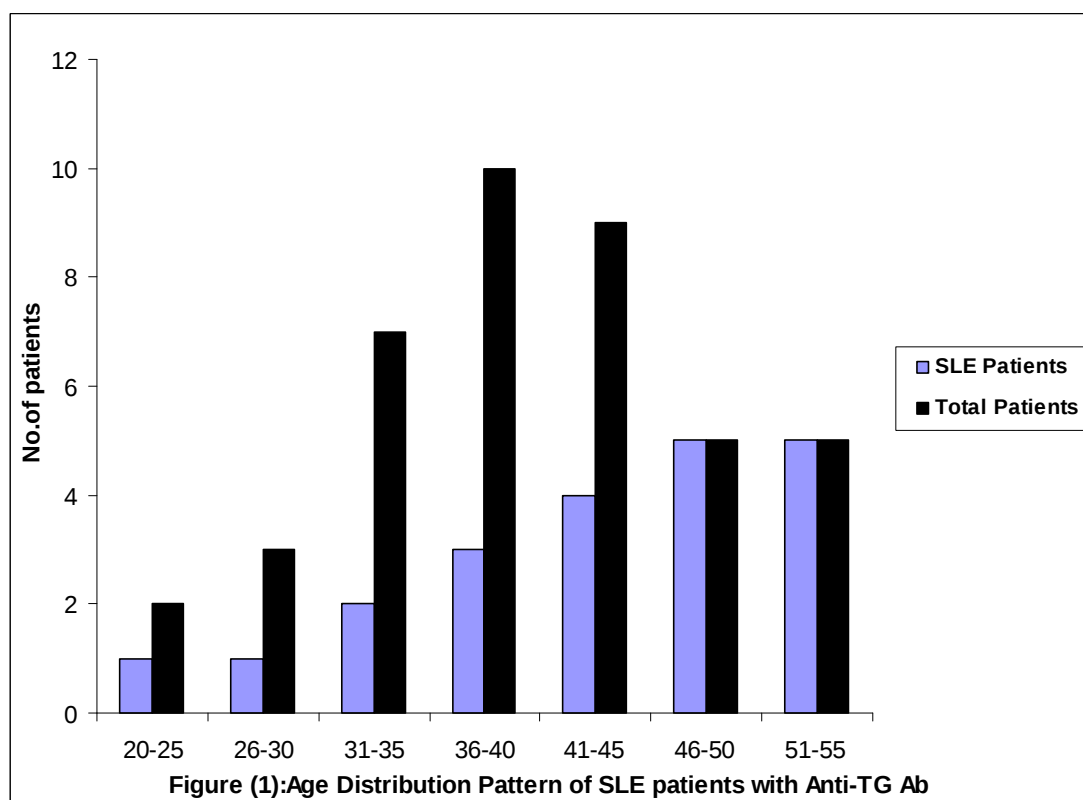
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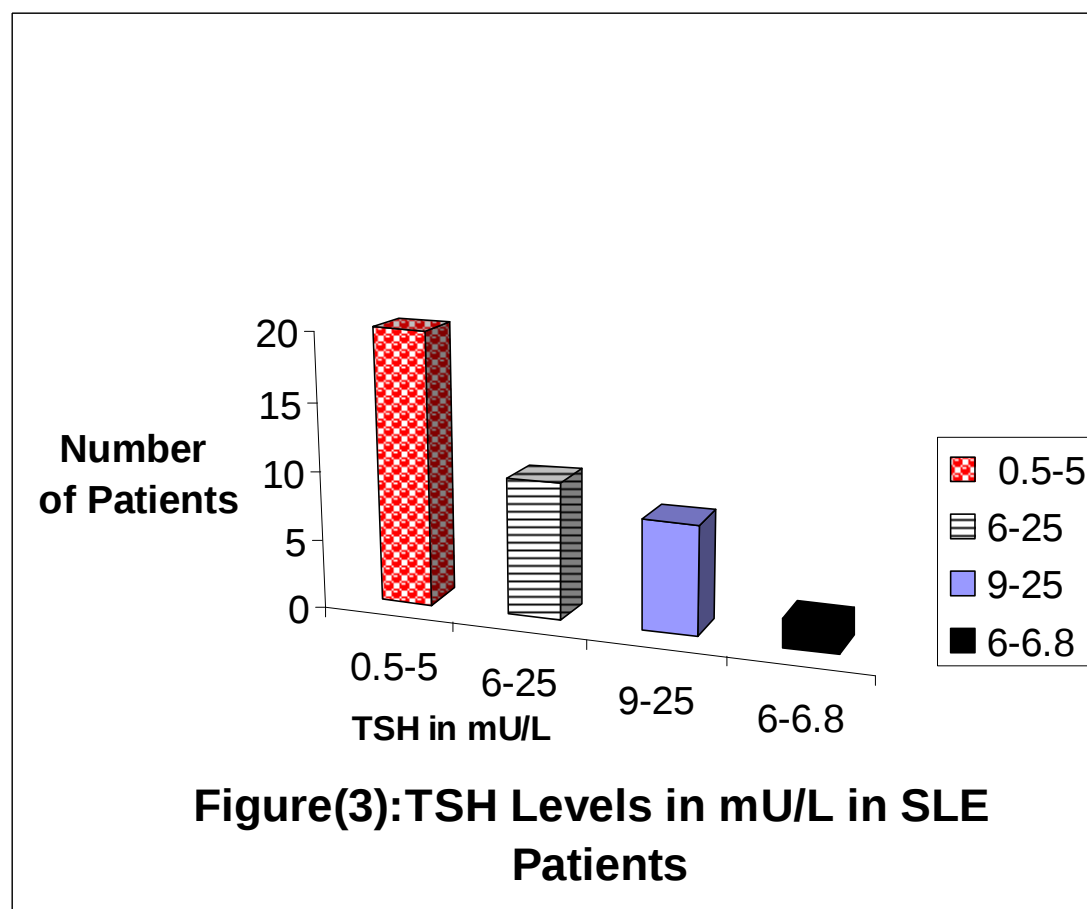
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TABLES AND FIGURES:

Table(1): Normal values of anti-TG.

	Anti-TG (IU/ml)
Normal	<100
Border line	100-150
Elevated	>150





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العلاقة بين التهاب الغدة المناعي مع داء الذؤابة الأحمراري

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الخلاصة:

حددت درجة التداخل بين التهاب الغدة المناعي مع داء الذؤابة الأحمراري تضمنت الدراسة ٤١ مريضاً مصاباً بداء الذؤابة الأحمراري مقارنة بمجموعة سيطرة. كان (٥١%) ٢١ منهم يحملون مضاد الثايروكلوبيولين وكان لعشرة مستويات عالية من الهرمون المحفز للدرقية مع حملهم لمضاد الثايروكلوبيولين. من هذه النتائج يتبين وجود علاقة بين التهاب الغدة المناعي مع داء الذؤابة الأحمراري حيث ان العديد من مرضى داء الذؤابة الأحمراري يعانون من انخفاض طفيف بأفراز الغدة الدرقية.

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