Autoimmune Thyroid Diseases In Juvenile Systemic Lupus Erythematosus

Thesis

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Abstract

Thyroid Function tests, anti microsomal and anti thyroglobulin antibodies level of 30 patients with Systemic Lupus Erythrematosus (SLE) and 30 healthy subjects were studied. The level of thyroid antibodies were higher in SLE patient's in comparison with control group although there is no significant difference in the level of thyroid hormones between the two groups.

Key wards :

Thyroid – Systemic Lupus Erythrematosus

List of Abbreviations

ACAs	Anticardiolipin antibodies.
ACR	American Collage of Rheumatology
ANA	Anti nuclear antibodies
Anti T.G	Anti thyroglobulin
Anti TPO	Anti thyroid peroxidase
Anti-ds DNA	Anti double strand DNA
APLS	Anti phospholipid syndrome
BILAG	British isles lupus assessment group
C3	Complement 3
C4	Complement 4
CNS	Central nervous system
CPK	Creatinine phospho kinase
CT	Computerized tomography
ECG	Electro cardiography
F VIIIRAG	Factor VIII related antigen
FT3	Free T3
FT4	Free T4
HLA	Human leucocytic antigen
IgG	Immunoglobin G
IVIg	Intra venous immunoglobulin
LA	Lupus anticoagulant
LAI	Lupus activity index
MRI	Magnetic Resonance Image
NPLE	Neuropsychiatric lupus Erythematosus
NSAID's	Nonsteroidal anti-inflamatory drugs
PET	Possitron emission tomography
SAHs	Sub arachnoid hemorrhage
SLAM	Systemic lupus activity measure

SLE	Systemic Lupus Erythematosus
SLE-DAI	SLE disease activity index
T3	Tri- ido thyronnine
T4	Thyroxine
TIA's	Transient ischemic attacks
TNF-α	Tumor necrosis factor- α
TSH	Thyroid stimulating hormone
UV	Ultra violet light

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Introduction and Aim of work

Lupus is a chronic autoimmune illness characterized by auto antibodies directed at nuclear antigens and causing a variety of clinical and laboratory abnormalities, including rash, arthritis, leucopoenia, thrombocytopenia, alopecia, fever, nephritis, and neurologic disease. ***(Mihailova et al;1999).***

Most or all symptoms of acute lupus are attributable to immunologic attack on the affected organs. Many complications of long-term disease are attributable both to the disease and to its treatment.***(Steere et al; 2001).***

The term lupus applies to several variants of the illness, of which systemic lupus erythematosus (SLE) is the most serious and most common. SLE is the prototype of the systemic autoimmune illness, involving multiple organ systems in pathologically similar way. ***(Rowell etal;1998)***

SLE may occur as an overlap syndrome that shares features with other autoimmune illnesses such as mixed or undifferentiated connective tissue disease,

Dermatomyositis, Sjogren syndrome, Rheumatoid arthritis and Scleroderma. Organ specific autoimmune diseases such as thyroiditis, autoimmune hemolytic anemia and idiopathic thrombocytopenia, frequently accompany and may be a part of SLE.***(Ramos-Casals et al;2000).***

Auto immune thyroid disease marked by the presence of antibodies directed against thyroid antigens, has been associated with a number of non specific rheumatological disorders, these associations include SLE and Sjogren syndrome. ***(Pedersen ;1993)***

It is postulated that thyroid disease is more common in SLE than in general population but there is disagreement as to whether both hypothyroidism and hyperthyroidism are more common or whether this finding is restricted to hypothyroidism alone.***(Pyne and Isenberg;2002).***

Both anti thyroglobulin and anti microsomal antibodies have been found with greater frequency in SLE than in the general population even in lupus

patients who do not have clinical thyroid disease.***(Scofield;1996).***

The aim of the work is to estimate the thyroid functions and detect the presence of auto antibodies to thyroid gland in juvenile systemic lupus eryrhematosus (JSLE) patients also try to correlate the presence of this antibodies (if present) with the clinco-laboratory manifestations in the studied group.

Systemic Lulus Erythematosus

Introduction:

Systemic lupus erythematosus (SLE) is a multisystem connective tissue disease characterized by presence of numerous pathogenic antibodies and immune complexes and wide spread immunologically determined tissue damage. The clinical course of SLE is characterized by periods of remission and chronic or acute relapses ***(Nuki, 1995).***

This disease occurs primarily in young women and ranges in severity from a mild disease with rash and arthritis to a devastating illness with renal failure and profound nervous system disturbances. Because of the variability in the course of SLE, the approach to therapy is individualized for each patient and is determined by the array of clinical manifestations present ***(Pisetsky et al., 1997).***

Epidemiology:

- Incidence and prevalence:

The overall incidence of SLE ranges from 1.8 to 7.6 cases per 100,000 ***(Hopkinson, 1992; Hopkinson et al., 1993 and Hess and Farhey, 1994).*** The incidence varies

with age, race and sex ***(Lehman et al., 1989 and Singsen, 1990).***

Prevelance among children younger than 18 years has been estimated at 0.53 ***(Hocheberg et al., 1985)*** to 0.6 ***(Siegel and Lee, 1973)*** per 100,000.

The overall age-standardized one-year period prevalence rate as estimated by a recent study of a geographically complete cohort from Nottingham is at 24.7 per 100,000 ***(Hopkinson et al., 1994).***

There are no accurate prevalence data in children, although it has been inferred that there are between 5000 and 10,000 children with SLE in the United States ***(Lehman, 1993).***

- **Sex ratio:**

SLE is clearly more prevalent in women, particularly in reproductive years. In most studies of SLE, 90% of patients are women. ***(Wallace and Dubois, 1987; McCarty et al., 1995 and Cameron, 1997).*** For , 14-64 years age group, the ratios of age-specific and sex-specific Incidence rates show a 6-to 10-fold female excess, which is not noted in patient younger than 14 or older than 65 years of age. This effect of age and sex on the incidence and prevalence rates of SLE suggests a role of hormonal factors in its pathogenesis ***(Gladman and Urowitz, 1998).***

- **Age at onset.**

Approximately 25% of all cases of SLE begin in the first two decades of life but the disease is extraordinary rare in children under the age of five ***(Lahita, 1999).*** In the pediatric series, the average age at diagnosis varied from I 1 to 14 years (median 12.2 years). The time from onset of symptoms to diagnosis varied from 8 months to 3.3 years (median 1.2 years). This median time of 1.2 years from symptoms to diagnosis emphasizes the difficulty in diagnosis or the lack of awareness of SLE in this age group ***(Silverman and Eddy, 1998).***

Race and geography:

Many studies have highlighted the significant variation in the prevalence of lupus among different ethnic groups sharing much the same environment A study from Birmingham by Johnson et al reported prevalence rates of 36 2, 90.6 and 206/100,000 among women of Caucasian, Asian and Afro-Caribbean origin respectively ***(Johnson et al., 1995).***

In another study by McCarty et al., the incidence in African-American females was more than 2.5 times higher than that in white females. In males, incidence in African-Americans was almost twice as high as that in whites. thus rates of SLE were found to be highest in African-American