

**Frequency of Autoimmune Thyroid
Disorders among Patients with Systemic
Lupus Erythematosus and its Relation to
Disease Activity**

Thesis

**Submitted for partial fulfillment of Master degree in
Pediatrics**

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Contents

List of abbreviations

List of figures

List of tables

Introduction 1

Aim of the work 3

Review of literature

.Chapter I: Systemic Lupus Erythematosus 4

.Chapter II: The Thyroid 34

.Chapter III: SLE and Autoimmune Thyroid 75

Disorders

Patient and Methods 90

Results 100

Discussion 125

Summary and Conclusion 137

Recommendations

141

References 142-170

Arabic summary

List of Abbreviations

AAP	American Academy of Pediatrics
Abs	Antibodies
aCL	Anticardiolipin antibodies
Ag	Antigen
AIDS	Acquired immunodeficiency syndrome
ANA	Antinuclear antibodies
AMA	Antimicrobial antibodies
APC	Antigen-presenting cells
aPL	Anti phospholipid antibodies
ATG Ab	Antithyroglobulin antibodies
B2- M	Beta 2 microglobulin
CBC	Complete blood count
C cells	Parafollicular cells
CD	Cluster Differentiation
CFT	Complement fixation test
CMI	Cell mediated immunity
CNS	Central nervous system
CPK	Creatine phosphokinase
CSA	Cyclosporin A
CT	Computed tomography
DIT	Diiodinated tyrosine
DNA	Deoxyribonucleic acid
DHEA	Dihydroepiandrosterone
EEG	Electro encephalograph
ELISA	Enzyme-linked immunosorbent assay
EPO	Erythropoietin
ESR	Erythrocyte sedimentation rate
FANA	Fluorescent antinuclear antibodies
Fc receptor	Crystalline -fraction receptor
FNA	Fine needle aspiration
F T ₃	Free Triiodothyronine
F T ₄	Free Thyroxine
GD	Grave's disease
γ globulin	Gamma globulin

HIV	Human immunodeficiency virus
HLA	Human leucocyte antigen
HPF	High power field
IFAT	Indirect fluorescent antibody test
IFN	Interferon
Ig	Immunoglobulin
IHA	Indirect haemagglutination
IL	Interleukin
LA	Lupus anticoagulant
LN	Lupus nephritis
LE cells	Lupus erythematosus cell
MFM	Mycofenolate mofetil
MHC	Major histocompatibility complex
MIT	Monoiodinated tyrosine
MRI	Magnetic resonance imaging
NK cells	Natural killer cells
NIS	Na iodide symporter
NTI	Non thyroidal illness
Pmol	Pico- mole
PPT	Partial thromboplastin time
RAIU	Radioactive iodine uptake
RNA	Ribonucleic acid
RNP	Ribonucleoprotein
RRNA	Ribosomal ribonucleic acid
r T ₃	Reverse Triiodo thyronine
SLE	Systemic lupus erythematosus
SM Ab	Anti smith antibodies
F T ₃	Triiodothyronine
F T ₄	Thyroxine
TBPA	Thyroxine binding Prealbumin
TBG	Thyroxine binding globulin
Tg	Thyroglobulin
Th	T helper cell
TH	Thyroid hormones
TNF	Tumor necrosis factor
TPO	Thyroid peroxidase

TPO Ab	Thyroid peroxidase antibodies
TRH	Thyrotropine releasing hormone
TSH	Thyroid stimulating hormone
TSI	Thyroid stimulating immunoglobulins
TT ₃	Total triiodothyronine
TT ₄	Total thyroxine
TTF	Thyroid transcription factor
UVA, UVB	Ultraviolet A,B waves
WBCs	White blood cells
WHO	World health organization

List of Figures

Fig	Title	Page
1	A proposed model for SLE.	6
2	The thyroid gland and its relations	36
3	Embryology of the thyroid gland	40
4	Synthesis of the thyroid hormones.	43
5	Hypothalamic-pituitary-thyroid axis	48
6	Age distribution among cases and controls	91
7	Sex distribution among cases and control	92
8	Comparison of family history among cases and controls	103
9	Comparison of anthropometric measurements SDS between cases and controls	104
10	Comparison of frequency of clinical goiter among cases and controls	105
11	Comparison of thyroid functions among cases and controls	106
12	Comparison of TPO antibodies and anti TG antibodies among cases and controls	107
13	Comparison of the frequency of positive TPO and anti TG antibodies among cases and controls	108
14	Frequency of thyroid function disorders among cases with SLE	109
15	Comparison of thyroid function status between both sexes among cases	110
16	Comparison of frequency of clinical goiter between both sexes among cases	111
17	Comparison of frequency of goiter by ultrasound between both sexes among cases	112
18	Comparison of thyroid status in relation to age among cases	113

19	Comparison of thyroid status in relation to duration of illness among cases	114
20	Thyroid hormone status in relation to disease activity among cases	115
21	Frequency of thyroid hormone abnormalities in relation to positive family history of rheumatic disorders among cases	116
22	Frequency of thyroid hormone abnormalities in relation to positive family history of thyroid disorders among cases	117
23	Frequency of thyroid hormone abnormalities in relation to anthropometric measurements among cases	119
24	Frequency of thyroid hormone abnormalities in relation to presence or absence of goiter as detected by clinical examination among cases.	120
25	Frequency of thyroid hormone abnormalities in relation to thyroid volume SDS by U/S among cases.	121
26	Comparison of the frequency of positive TPO and anti TG antibodies between both sexes among cases	122
27	Comparison of frequency of positive TPO and anti TG antibodies in relation to duration of illness among cases	123
28	Comparison of TPO and anti TG antibodies positivity in relation to disease activity among cases.	124

List of tables

Table	Subject	Page
1	World Health Organization Classification of Lupus Nephritis	11
2	The 1982 revised criteria for classification of systemic lupus erythematosus	22
3	Autoantibodies in SLE	24
4	Systemic lupus erythematosus disease activity index (SLEDAI) :	92-93
5	Detailed descriptive, demographic, clinical and laboratory data of all cases.	100
6	Age distribution among cases and controls	101
7	Sex distribution among cases and controls	102
8	Comparison of family history among cases and controls	103
9	Comparison of anthropometric measurements SDS between cases and controls	104
10	Comparison of frequency of clinical goiter among cases and controls	105
11	Comparison of thyroid functions among cases and controls	106
12	Comparison of TPO antibodies and anti TG antibodies among cases and controls	107
13	Comparison of the frequency of positive TPO and anti TG antibodies among cases and controls	108
14	Frequency of thyroid function disorders among cases with SLE	109
15	Comparison of thyroid function status between both sexes among cases	110
16	Comparison of frequency of clinical goiter	111

	between both sexes among cases	
17	Comparison of frequency of goiter by ultrasound between both sexes among cases	112
18	Comparison of thyroid status in relation to age among cases	113
19	Comparison of thyroid status in relation to duration of illness among cases	114
20	Thyroid hormone status in relation to disease activity among cases	115
21	Frequency of thyroid hormone abnormalities in relation to positive family history of rheumatic disorders among cases	116
22	Frequency of thyroid hormone abnormalities in relation to positive family history of thyroid disorders among cases	117
23	Frequency of thyroid hormone abnormalities in relation to anthropometric measurements among cases	118
24	Frequency of thyroid hormone abnormalities in relation to presence or absence of goiter as detected by clinical examination among cases.	120
25	Frequency of thyroid hormone abnormalities in relation to thyroid volume SDS by U/S among cases.	121
26	Comparison of the frequency of positive TPO and anti TG antibodies between both sexes among cases	122
27	Comparison of frequency of positive TPO and anti TG antibodies in relation to duration of illness among cases	123
28	Comparison of TPO and anti TG antibodies positivity in relation to disease activity among cases.	124

الاختلال المناعي للغدة الدرقية في مرضى الذئبة الحمراء و علاقته بدرجة نشاط المرض

رسالة الماجستير المقدمة من الطبيب
خالد علي علي تمساح

توطئة للحصول علي درجة الماجستير في طب الاطفال

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Introduction

Autoimmune diseases are related to genetic, hormonal and environmental factors. They can be systemic or organ specific and even coexist in the same individual (**Alarcon-Riquelme, 2005**).

Lupus has been known as a diagnostic concept for at least 150 years. Whilst it was classified as a disease of the skin in the heyday of dermatology at the end of the 19th century, it had been categorized as a disease of the immune system in the 1950s, whereas it recently has been reclassified to a genetic disorder (**Alarcon- Riquelme, 2005**).

Systemic lupus erythematosus (SLE), is a disorder of the immune system in which the organism fails to recognize the immune self and starts to destroy vital organs and functions of the body. Autoimmune reaction is thought to be the consequence of deregulated apoptosis, i.e. when many cells start their programmed cell death prematurely. SLE is a systemic disorder, which affects the whole person: organs, skin, and the brain (**Alarcon-Riquelme, 2005**).

Thyroid hormones also play critical roles during embryogenesis and early life, and have profound metabolic effects in adult life, including changes in oxygen

consumption, protein, carbohydrate, lipid and vitamin metabolism (**Tata and Windell, 1996**).

Proper function and maintenance of thyroid hormones have biological, medical, and social significance. As hormones, they have prominent effects on the growth, development, and metabolism of virtually every cell and organ (**Yen, 2001**).

The association between SLE and thyroid abnormalities was first described by (**Hijmans and White , 1961**) who showed that the presence of thyroid disturbance appeared to be more frequent in SLE patients than in the general population. Furthermore, antiperoxidase and antithyroglobulin antibodies have been frequently found in SLE patients when compared to control groups as well as in the general population (**Vianna et al., 1991**).

The increased prevalence of autoimmune thyroiditis in SLE is a compelling evidence that the organ/non-organ-specific dichotomy of autoimmune diseases is more apparent than real. At least one reason for this association is that both disorders share HLA-DR3 as a susceptibility factor (**Weetman and Walport, 1987**).

Aim of the Work

To study the frequency of autoimmune thyroid disorders among patients with systemic lupus erythematosus and to detect a possible relation to lupus activity.

SYSTEMIC LUPUS ERYTHEMATOSUS

Definition:

Systemic lupus erythematosus (SLE) is a disease characterized by presence of autoantibodies directed against self-antigens and resulting in inflammatory damage to target organs including the kidneys, blood cells and central nervous system. The natural history of SLE is unpredictable, and therefore early diagnosis and treatment can greatly improve the prognosis of the disease (**Gitelman and Miller, 2004**).

Etiology:

The cause and disease mechanism of SLE remain unknown (**Gladman and Urowitz, 1998**). The etiology may be multifactorial including genetic, hormonal and environmental factors contributing to immune deregulation in lupus disease (**Woods, 1993**). It seems that the causing factors initiate the disease in an already predisposed person and separate mechanisms then precipitate the disease and maintain the pathogenic process (**Horwitz, 1993**).