ANTIPHOSPHOLIPID ANTIBODIES IN EGYPTIAN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS

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بسم الله الرحمن الرحيم

و ما أ تيتم من العلم إلا قليلا

صدق الله العظيم

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List of abbreviations

APS: antiphospholipid syndrome

APLAs: antiphospholipid antibodies

ACLAs: anticardiolipin antibodies

APTT: activated partial thromboplastin time

ANA: antinuclear antibody

Anti-dsDNA: anti-double-stranded DNA

Anti-RNP: antiribonucleoprotein

Anti-sm: anti-smith antibody

APASS: Antiphospholipid Antibodies in Stroke Study

ACR: American College of Rheumatology

APLA: antiphospholipid antibodies

aCL: anticardiolipin antibodies

BILAG: British Isles Lupus Assessment Group scale

BUN: blood urea nitrogen

β2GP1: beta 2 glycoprotein 1

bid: twice daily

CAPS: catastrophic antiphospholipid syndrome

C1: Complement 1

C2: Complement 2

C4: Complement 4

CH50: hemolytic complement

CT: computed tomography

CSF: cerebrospinal fluid

CsA: cyclosporine A

CVT: cerebrovascular thrombosis

CVAs: cerebrovascular accidents

CYC: cyclophosphamide

CNS: central nervous system

DRVT: diluted Russell's venom time

DIC: disseminated intra-vascular coagulation

DNA: deoxyribo-nucleic acid

DVT: deep venous thrombosis

DHEA: dehydroepoandrosterone

ELISA: enzyme linked immunosorbent assay

EBV: ebstein-barr virus

ECG: electro-cardio-gram

EM: electron microscopy

ECLAM: European consensus Lupus Activity Measure

GPL: G = IgG : PL = phospholipids

G-6-PD: glucose-6-phosphate dehydrogenase

HLA: human leukocyte antigen

IgA: immunoglobulin A

IgG: immunoglobulin G

IgM: immunoglobulin M

IFM: immunoflurescence microscopy

IV: intravenous

IVIG: Intravenous immunoglobulins

IL-10: interleukin-10

IL-6: interleukin-6

INF-gamma: interferon gamma

IV C: intra-venous cyclophosphamide

ICU: intensive care unit

INR: international normalization ratio

KCT: kaolin clotting time

LA: lupus anticoagulant

LAC: lupus anticoagulant

LDL: low density lipoprotein

LE: lupus erythematosus cells

LAI: Lupus Activity Index

LN: lupus nephritis

LSE: Libman-Sacks endocarditis

LR: livedo reticularis

MHC: major histocompatability complex

MPL: M = IgM; PL = phospholipids

MMF: Mycophenolate mofetil

MCTD: mixed connective tissue disease

MRI: magnetic resonance imaging

NP_SLE: Neuropsychiatric disease in systemic lupus erytematosus

NSAID: Non-steroidal anti-inflammatory drugs

PAPS: primary antiphospholipid syndrome

PF: purpura fulminans

PO: per oral

PPD: protein purified derivative

pSLE: pediatric systemic lupus erythematosus

qd: four times per day

RPR: rapid plasma regain

RNA: ribonucleic acid

SLE: systemic lupus erythematosus

SLEDAI: Systemic Lupus Erythematosus disease activity index

SIS: SLE Index Score

SLAM: Systemic Lupus Activity Measure

SLICC: Systemic Lupus International Collaborating Clinics

SDI: System Damage Index

TIAs: transient ischemic attacks

UV rays: ultraviolet

VCA: viral capsid antigen

VDRL: Venereal Disease Research Laboratories

WHO: world health organization

WAPS: Warfarin in Antiphospholipid Syndrome

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Abstract

Antiphospholipid syndrome (APS) is classified into primary and secondary. Systemic lupus erythematosus (SLE) is the most common cause of secondary APS. The prevalence of APLAs, either LA or ACLAs, in patients with SLE is high *(Roubey, 2004).*

Objective: This study was designed to determine the frequency of anti-phospholipid antibodies, (aCL IgG, aCL IgM & LA) in pediatric SLE patients, and their correlation with the associated clinical manifestations in Egyptian children.

Patients and methods: This study included 50 lupus patients followed in the pediatric rheumatology clinic, having at least 4 of the American College of Rheumatology revised criteria for the classification of systemic lupus erythematosus. Antiphospholipid antibodies were tested in these patients.

Results: aCL IgG, aCL IgM and LA were positive in 24%, 34% and 28% of the patients respectively. 22% of the patients were diagnosed as SAPS. Positive correlation was found between the presence of APLA and evidence of thrombosis, vasculitic manifestations, neuropsychiatric manifestations, hemolytic anemia and gastrointestinal manifestations.

Conclusion: From our study we can conclude that the presence of APLA is common in pediatric SLE patients, so screening for APLA in SLE patients is recommended, and also repeated testing is recommended, which reveals the value of prophylactic treatment for APS in asymptomatic SLE patients with a positive APLA.

Key words: Antiphospholipid antibodies - Children - Systemic lupus erythematosus.

Introduction

Antiphospholipid syndrome (APS) is defined by the Sapporo criteria as the presence of antiphospholipid antibodies (APLAs), either lupus anticoagulant (LA) or anticardiolipin antibodies (ACLAs), and occurrence of either an acute thromboembolic event or fetal wastage *(Wilson, 2001).* APS-related thrombotic events may be venous or arterial, whereas APS-related fetal morbidity includes premature births, spontaneous abortions, and fetal death. Other manifestations associated with APS but not part of the Sapporo criteria include thrombocytopenia, hemolytic anemia, cardiac valve disease (Libman-Sacks endocarditis [LSE]), livedo reticularis (LR), and various neurologic manifestations including intractable headaches, migraines, seizures, chorea, transient ischemic attacks (TIAs), cerebrovascular accidents (CVAs), amaurosis fugax, dementia, psychosis, depression, transverse myelitis, and a multiple sclerosis-like disease *(D'Cruz, 2004).*

APS is classified into primary and secondary, the latter being associated with connective tissue disease. Systemic lupus erythematosus (SLE) is the most common cause of secondary APS, and the prevalence of APLAs, either LA or ACLAs, in patients with SLE is reported to be as high as 30% to 50% *(Roubey, 2004).*

The antiphospholipid (aPL) antibodies constitute a heterogeneous family of auto antibodies that react against antigenic epitopes present in negatively charged phospholipids, in complex phospholipid-plasmatic proteins, or even directly in plasmatic proteins *(Vaarala, 1996).*

These antibodies are not always pathogenic. They are present in several situations, such as infections, tumors, use of drugs, and even in 3% to 4% of normal individuals, without being related to thrombotic phenomena *(Petri, 1993).* The aPL antibodies can also be detected in several autoimmune diseases, for example, systemic lupus erythematosus (SLE), Sjogrn's syndrome, systemic sclerosis, eosinophilic fasciitis, vasculitis, Behcet's disease, Lyme disease, sarcoidosis and rheumatoid arthritis *(Mackworth Young, 1989).*

Only a few studies have evaluated the frequency and behavior of the aPL antibodies and the APS in children with SLE. The positivity of the aPL antibodies varies from 19% to 87% (mean 56%) for the aCL antibodies and from 11% to 62% (mean 31%) for LAC antibodies. Antiphospholipid syndrome is present in 9% to 24% of the cases *(Ravelli, 1997).* Clinical manifestations relative to the presence of aPL antibodies are similar in children and adults, with a prevalence of venous thrombosis.